

Harry;

Regular baking powder as we know it does not work well in this type of application since the acids formed during fermentation will immediately react with the soda portion of the baking powder leaving the acid component without soda to react with resulting in acidification of the dough as well as the development of an after taste resulting from the type of leavening acid used. For example, if the acid is sodium acid pyrophosphate the after taste will be something like that of a cake donut (yes, the leavening system is responsible for the characteristic flavor of a cake donut) but if sodium aluminum phosphate is used the resulting flavor is much like that which we normally associate with a baking powder biscuit (the reason being that commercially made baking powder biscuits are almost always made using a SALP based leavening system).

To get around most, but not all of this problem, we used a fat encapsulated chemical leavening system when combining it with any kind of a yeast leavened dough. The preferred chemical leavening system is comprised of SALP and soda with 100% fat encapsulation. This means that 1-pound of the chemical leavening is encapsulated with 1-pound of fat. The fat protects the chemical leavening from any kind of pre-reaction due to exposure to moisture or acid but it melts off during baking to allow the chemical leavening to fully react during the baking process (hence the term bake to rise or oven rising). Pizza is not the first place that this was used, it has been used in making yeast raised donuts for over 50-years, significantly predating its use in pizza as we know it.

Dough Clinic / Re: Yeast + Baking powder

Thanks for the pics. Those bubbles are not as bad as I thought you were describing and should be controlled with a decent dough docker. As to the cause of those bubbles, that's the type of bubbles that we normally see when the dough is too cold going into the oven. Try letting the dough balls sit out for an additional 30-minutes before opening into skins and let us know what you find.

Great pics by the way! :)

Dough Clinic / Re: Reducing Large Bubbles in NY-Style Crust

Nat;

They're electric resistance heaters (is there any other kind?) Those that add moisture in the cabinet also have a water reservoir with a "cal rod" situated in the water to heat in causing an increased rate of evaporation thus humidifying the air.

Shop Talk / Re: Cooked pizza display cabinet (pizza sold by slice) - heated or not?

A couple of things to look at here, the IDY level at 0.5% is on the high side for the type of pizza that you are making, I would suggest reducing it to around 0.25% or a little lower. Then use a thermometer to check the dough temperature after mixing (it should be around 80F) and again before you begin opening the dough balls into skins (it should be 50 to 55F). Lastly, there is the dough docker, there are dough dockers and there are dough dockers. In my opinion there is only one type that works as a docker should, and that is the one with plastic docking wheels and flat tipped docking pins (not metal pins). A picture of the docker would help as would a picture of the pizza.

Dough Clinic / Re: Reducing Large Bubbles in NY-Style Crust

Darticus;

Yes, just play it over the hearth. You will be able to see any hot spots too.

[**Newbie Topics / Re: Pizza Oven: Pellets and thermometer?**](#)

Fazzari;

How do you manage the scrap dough when you die cut the skins?

We found the best way for us to do it is to collect it in a bucket in the cooler under the prep table (idea was to keep the dough cold to control fermentation) and then we added 10-pounds back to each batch of fresh dough that we made (50# flour weight doughs). Just curious how you are managing it?

[**Shop Talk / Re: Reversible Sheeter / Doughball Divider/Rounder**](#)

Even more than tomato? :)

[**New York Style / Re: Oregano Pre/Post bake**](#)

Get yourself an infrared thermometer with a sufficiently high temperature range to measure the deck temperature and identify any hot spots on the deck.

[**Newbie Topics / Re: PIZZA OVEN PELLET AND THERMOMETER**](#)

Typically the thicker the slice, the less cupping you will get.

[**Pizza Toppings / Re: How to PREVENT pepperoni from "cupping"?**](#)

JT;

You're correct about the divider. You might be able to get a dough rounder that will work for you though. Have you contacted AM Manufacturing <www.ammfg.com> yet about their dough rounder to see if it will work with a low absorption dough such as yours? As for the reversible sheeter, with the right one I think it will work but it will take up a lot more room (bigger foot print), about 2.5 feet X 6-feet, and it will probably be slower too as the dough will still need to be formed in two passes through the sheeting rolls with a 90-degree turn between each pass. I'm guessing that you will find bench top sheeters faster and they don't require as much space either. If your dough wasn't for a thin crispy pizza and up around 60% absorption it would be a whole different story, but depending upon the actual temperature of the dough at the time of sheeting, those 40% absorption doughs can be pretty tough to sheet on equipment made for higher absorption dough.

If you are planning to attend Pizza Expo this winter this would be a good challenge to bring with you (shoot some video of your dough being rounded and sheeted to bring with you) to see if you can find an equipment supplier that might be able to help you within your space limitations.

[**Shop Talk / Re: Reversible Sheeter / Doughball Divider/Rounder**](#)

Jiraya;

Rather than cooking the sauce to condense it (which will result in a loss of flavor in the finished sauce on the pizza) you have two better options. 1) Blend in some tomato paste, this will increase the solids content of your sauce making it thicker. 2) Add a little fresh crushed or diced garlic and or onion to the sauce and refrigerate it overnight before using it. The enzymes present in the onion and garlic will catalyze the pectin in the tomato causing it to gel, making for a thicker sauce without any other changes.

[**Chicago Style / Re: Deep dish in WFO?**](#)

Duke;

I did something similar last year to what you did. Due to an early frost we have an abundance of green tomatoes, more than we could fry and eat, so I made them into almost a gallon of green picante sauce. I used the picante sauce as a substitute for

sauce on some of my pizzas, used a blend of mozzarella and white cheddar cheese, then used either chicken or pork for the meat topping, added some black beans, onion and slices of fresh tomato. After the pizza was sliced we added dollops of sour cream to each slice. It made for a nice change from my regular pizzas and I didn't hear any complaints either :).

General Pizza Making / Re: Chile Verde Pizza - Does this sound good or gross?

Harry:

It sounds like your dough is firm enough to get away with it. It is still a good idea to season new screens "just in case".

Shop Talk / Re: Use of screens for larger sized pizzas - pros and cons

More surface area for the topping ingredients to migrate from.

Pizzeria & Restaurant Reviews / Re: This is why I avoid buying LARGE pies.

Iceman;

Great idea! I might offer one suggestion though, instead of placing the frozen sauce cupcakes directly into a Zip-Lock bag I would suggest wrapping each one individually in either stretch wrap or use individual food bags. If using stretch wrap pull the wrap tight to the cup cake, and if using food bags be sure to pull the bag snugly to the cup cake to create as little head space in the bag as possible. Within two weeks you will begin to see the effects of freezer burn as moisture is removed from the sauce and deposited on the inside of the Zip-Lock bag. By minimizing any head space around each cup cake you will minimize or nearly eliminate any damage due to freezer burn.

Sauce Ingredients / Re: How I am storing the big 6 lb cans of sauce :)

Jim;

I'd suggest getting a good, but low cost (\$35.00) electronic scale. Volumetrically portion out each ingredient as you normally would and run the portion over the scale to get a weight in grams. Once you know what all of your specific ingredient weights are you can convert your "recipe" to a "formula" in bakers percent by dividing the weight of each ingredient by the weight of the flour and multiplying by 100. Now you can manipulate the size of your dough, and because you will be WEIGHING each ingredient you will have much enhanced scaling accuracy repeatability when making your dough. Normal errors in volumetric portioning can have a dramatic effect upon how the dough performs when made at different times.

Dough Ingredients / Re: Caputo Flour 00 question

Pete;

Careless, slip-shod dressing of the skins and as you can see in the photograph, as the pizza bakes the cheese and toppings move/gravitate towards the center of the pie. In our pizza class we always taught our students to dress the skin so the center was almost devoid of toppings and more toppings were applied out closer to the edge which resulted in a more even/uniform distribution of toppings after the pizza was baked. Now, try to explain that to your local pizzeria.

Pizzeria & Restaurant Reviews / Re: This is why I avoid buying LARGE pies.

Jim;

I can't speak to Caputo flours but U.S. milled flours are known to have a shelf life (that's how long they keep them) of up to a full year after milling. Under what conditions the flour is stored in during that time is anybody's guess. When I used to

do routine flour testing we would occasionally find bags of flour submitted by a distributor that were returned to them because of erratic or poor performance. The performance oddity was usually confirmed and more often than not it was traced back to poor storage conditions. I remember in one case, during an unusually hot summer on the east coast, we were able to trace the problem back to storage of the flour in a facility where the temperatures were peaking out at nearly 140F. Even the boxed cubes of shortening that they had stored in there were melted and the boxes bulged out as a result.

Dough Ingredients / Re: Caputo Flour 00 question

Jim;

Remember too that the age and conditions under which the flour has been stored can impact the taste. I think everyone here will agree that freshly milled flour produces a better flavored crust than flour that has been stored out in the "garage" for 6-months or more.

Dough Ingredients / Re: Caputo Flour 00 question

I think this is a matter of preference. I like to add oregano or basil (I only use the fresh form and seldom, if ever, the dried form) immediately after baking so the latent heat of the pizza releases the bouquet of aroma. On some occasions I will also add a drizzle of EVOO at the same time for the same reason. I never add salt after baking as I feel it interferes with the flavors I'm looking for.

Just my way of doing it I guess.

New York Style / Re: Oregano Pre/Post bake

Jim;

If I'm wrong on this somebody please jump in and correct me but I think your problem might be in the fact that the flour you like working with has a higher protein content and is made from a variety/varieties of hard wheat where as the flour that you don't like working with has a lower protein content and forms a different (weaker) gluten structure as it is made from a soft wheat (typically better suited to pastry production). Note the soft wheat reference on the bag.

Dough Ingredients / Re: Caputo Flour 00 question

Muttdog;

What you are proposing (putting sauce on the dough prior to par-baking) I think is the key to successful par-baking of pizza crusts. The approach that I normally recommend, and take myself, is to apply not more than 1/2 of the sauce prior to par-baking, this helps to keep the top from bubbling if the dough is so minded, and it also goes a long ways to conserving the moisture content of the finished crust, then after baking apply the remainder of the sauce and dress as desired before placing back into the oven for the final bake. If you are so inclined, you can also set the par-baked crusts aside (wrapped in stretch wrap) and stored at room temperature for up to four days and then make a pizza on the spot if friends stop by or if you get a pizza urge.

Sicilian Style / Re: Thick crust and even cooking at home

If you want to see first hand the impact that oil has on the chewiness of a crust pick up two packages of wheat flour tortillas, one regular and the other fat-free.

Dough Clinic / Re: Foldable, chewy crust

18 X 26 sheet pan and into the oven to brown, stir/turn once during the cooking process to prevent sticking.

[**Pizza Toppings / Re: Cooking bulk ground meats**](#)

Yang;

I think you will be ahead of the game using screens due to the ease of use and overall convenience offered by the screens, plus since you will be making slices from the whole pizzas it will be much easier for you to get uniformly round shapes using screens as opposed to baking on the oven deck without a screen. The one thing that I must caution you on though is to MAKE SURE YOU SEASON THE SCREENS WELL BEFORE USE, failure to do so will result in a perpetual problem of the dough sticking to the screens during baking. Screens are the cheapest baking platform that I know of so you should be able to get plenty to use in your store. NOTE: The one problem experienced with screens is that they are easily damaged, for this reason be sure to buy a good number of extras, then after you know how many you will need in your operation season at least 10 more screens and set aside as replacements, always make sure you have your replacement screens seasoned before hand, the time to be seasoning screens is not at the last minute when you need them. Like was mentioned in an earlier post, the aluminum blade peels aka oven peels are just the ticket for putting the screened pizzas in the oven and taking them out. As for peel size, I like to use a peel that is about 2-inches narrower than the screen size that I will be working with, it's a lot easier than using a full width peel. As for peel length, I like to size the length of the peel so it is about 2-feet longer than the oven is deep. Remember, it's easy to work with a peel that is too long but dangerous to work with a peel that is too short, and if it is too long and the extra length bothers you it's easy to cut the length of the handle back.

[**Shop Talk / Re: Use of screens for larger sized pizzas - pros and cons**](#)

Nat;

Because pizzas are baked using mostly bottom heat the top heat is used mostly to control the bake to the top of the pizza and maybe help a little with moisture control. I would start with bottom heat only and adjust the baking time to achieve a nicely browned bottom crust color, then, if necessary, add top heat to get the top bake you are looking for as well as to adjust the cheese browning if you want to go in that direction.

As for the deck material, we don't know what your choices are but steel is not usually a good one. Instead opt for a thicker, (composite?) material that has the ability to store lots of latent heat. This will help with both your regular pizzas as well as reheating the slices. As for a hood, here we do not have that as an option, instead it is usually dictated by the codes department of the city. In any case I would highly recommend a hood if for no other reason to limit the amount of heat spilling out into the store.

[**Commercial Ovens / Re: Deck oven advice**](#)

Lacking any other information a soft, chewy and foldable crust will result when the pizzas are baked right on the deck of a very hot (700 to 850F) oven. This is especially common when higher dough weights are used in making the skins, such as 12 to 13-ounces of dough for a 12-inch crust for a dough loading of 0.106 to 0.115 ounces of dough per square inch of surface area. This translates to 16 to 17.75-ounces of dough for a 14-inch diameter crust. The use of a rolling pin or sheeter will ensure a suitably chewy crust. For a really chewy crust be sure to delete any oil/fat from the dough formulation. Most of the pizzas that I see made this way are sauced edge to edge leaving not much more than a 1/4-inch of exposed edge.

That's about the best I can offer for now.

Dough Clinic / Re: Foldable, chewy crust

Peter;

Going back a short time ago, I had mentioned in another thread about static freezing of dough, which is nothing more than freezing the dough in a "freezer" (0 to 05F and little to no airflow). As we know, this is quite deleterious to the yeast but all of the results that I got when doing the research on freezing dough indicated that the dough can be frozen in this manner and still perform reasonably well BUT the shelf life is reduced from 21-weeks for blast frozen dough to 10 to 15-days when it is static frozen. I seriously doubt that there is anything that Norma could do short of blast freezing or cryogenic freezing (-65F) to achieve any significant improvement in the quality of her frozen dough. I'm in total agreement with you, if it ain't broke, don't fix it.

The rules for formulating a fresh dough into a frozen dough is to increase the yeast by 50%. This is done for two reasons, 1) it compensates for the damaged yeast cells and 2) it helps to reduce the overall proofing time and improve the oven spring properties of the dough which are lost through weakening of the dough. Increase (maximize) the salt and sugar levels to reduce water activity (A_w) in the dough as a means of further protecting the yeast. Change from oil to shortening and have the shortening at 4% or slightly more to help seal the gas cells in the dough for improved gas retention resulting in better finished volumes (not so important with pizza dough but critical for dough that will be used to make bread and rolls).

Minimize the amount of water added to the dough (% absorption) so as to help in retaining a firmer dough after slackening out, remember that freezing the dough results in it getting softer, some times to the point of being sticky so more water will just compound the issue. Use "additives" as needed to achieve the desired shelf life characteristics. Mix the dough to full gluten development and then just enough more to achieve the necessary dough properties that will allow for uninterrupted high speed processing of the dough. After the forming of the dough into balls, pucks, or moulded loaves get the dough into the freezer as quickly as possible with two objectives 1) reduce the internal dough temperature to 38 to 40F (this will control the yeast activity) and 2) bring the internal dough temperature down to 0 to +10F (this is the lowest temperature that we take the dough down to (economics) and then package and place into a holding freezer at -10 to -5F for a minimum of 24-hours before loading on a freezer transport for distribution. If the dough is cryogenically frozen the process is a little different in that the dough is frozen at -65F (what we call shell freezing) and the internal temperature is between +15 and +20F, the dough is then packaged and placed into a holding freezer (-10 to -5F) for 2-hours after which the internal temperature of the dough is again measured, we're looking for 0 to +5F. If the dough balls have equilibrated to that temperature they will remain in the storage freezer for the mandatory 24-hour period, if the dough balls have a higher core temperature they are given a longer residence time in the cryogenic freezer, if they are below the target temperature the residence time is reduced accordingly (again economics). I might add that the term "anal attentive" is properly and politely used to describe anyone responsible for commercial frozen dough production. Why is this? Because in a frozen dough operation you may have up to 21-weeks of production out there on a limb.....now is not the time to find out that all of the dough is failing after three weeks of storage. In a frozen dough plant it is a life of measuring the quality of each ingredient that goes into making the dough and then religiously maintaining the processing parameters and enforcing those parameters so if a dough falls outside of the parameters it is scrapped or diverted into a different processing area for use in

making something else or for use in a special application where shelf life is not the order of the day such as sale or donation to a food bank where the dough will be used rather soon. It's even more fun when you get into studying the distribution of frozen dough, and to put a twist into the cat's tail there is another type of frozen dough which is called "pre-proofed frozen dough". I know, it sounds contrary to everything we've discussed but it can and is being done very successfully, where you ask? Look no further than your local supermarket, frozen pizza section, Schwan's Foods Freschetta Pizza, yep, pre-proofed frozen, but that's another story.

Dough Ingredients / Re: Salt and Yeast

By chance, did you happen to take any photographs of the pizza? If not, please tell me as much about it as you can.

Dough Clinic / Re: Foldable, chewy crust

Thank you Peter.

A small amount of diastatic malt powder is not a problem in frozen dough production as malted flour is almost always used. You just don't want to dose it to the point where you are beginning to see some stickiness in the finished dough. Frozen doughs are already a little sticky after slacking out so it won't help to make the dough even stickier.

As for the salt in a frozen dough, salt will significantly slow the rate of fermentation depending upon the balance between salt and yeast. The temperature of the frozen dough has the greatest depressing effect upon the yeast in the mixing bowl and then the salt also contributes to this depressing effect. The reason for using a very fine particle size salt is to ensure thorough dispersion throughout the dough mass (remember that commercially, the salt is added close to the end of the mixing process so as not to toughen the dough any more than what the depressed temperature already has and it is a well known fact that cold doughs do not develop gluten as quickly as warm doughs do so by leaving the salt out of the dough until about the last 4 to 5-minutes of mixing the dough develops quicker which in turn takes significant stress off of the mixer and agitator bars. Then the shorter mixing time doesn't generate as much heat due to friction during mixing so it is easier to achieve and maintain the target finished dough temperature which is normally between 60 and 65F with 70F generally considered as the very top end for dough temperature when making frozen dough. Add to that the fact that yeast typically exhibits about a 20-minute lag phase before it begins to feed and create fermentation as we know it. Since the objective in a frozen dough plant is to process the dough and get it frozen as quickly as possible (the reason being to limit growth/swelling of the individual yeast cells) since the mere act of freezing the dough (even blast freezing at -35F with 600 to 800-linear feet of air flow over the product per minute) will create some large ice crystals though the majority will be much smaller ice crystals, it is the formation of those large ice crystals that damages the yeast during the freezing process and if the yeast is allowed to begin feeding (plumping up the yeast cells) more of the cells are damaged in the freezing process, so to minimize the damage to the yeast the main focus is to mix and freeze as quickly as possible. Assuming a 10-minute mixing time and a 20-minute yeast lag phase that leaves only about 10-minutes to get the dough processed and into the freezer (actually most lines are designed to process the dough in 15 to 20-minutes so there is a compromise between processing and quality/shelf life of the dough) additionally remember that the dough doesn't get chilled to a point where the temperature suppresses yeast activity (40F) until the dough has been in the freezer for about 15-minutes (depending upon the size and shape of the dough). This is why there is inevitable damage to the yeast even with commercial freezing

processes. It has been determined that about 10% of the yeast is damaged during the freezing process which is responsible for the release of glutathione from the yeast cells, which in turn weakens the dough and explains why we occasionally see some inherent stickiness in frozen dough which now leads us to the addition of oxidation to the dough. Ascorbic acid, azodicarbonamide and some of the newer oxidative enzymes are used in conjunction with strengtheners such as SSL (sodium stearoyl lactylate) and DATEM. This is just the tip of frozen dough iceberg, there is a lot more to it but this should give you an idea of how the ingredients interact and why certain ones are used.

Dough Ingredients / Re: Salt and Yeast

Pete;

Between you, me and the fence post, none, but when you add food safety guidelines they state unequivocally that hot food (pizza included) be baked and heated to an internal temperature of not less than 160F (that's easy as all of the starch doesn't set until 180F is reached) then it cannot be allowed to drop below 140F at the time of serving or sale (assuming served or sold by the store). If said pizza drops below 140F it must be reheated to an internal temperature above 160F (kill step) to make it safe to sell or serve. If a pizza is delivered by your driver or contracted driver the pizza is considered property of the store and has to follow the above (this is why maximum delivery time depends upon how long you can keep the pizza at or above 140F). Now, if a customer comes into the store and buys a pizza (carry out) he can do whatever he/she wants to do with it just so long as it isn't going to be sold. Here is a take on it, some cities, counties, states go by the 4-hour food safety rule which simply states that a food can be at a temperature which will support microbial growth (under 140F) for a maximum accumulated time of 4-hours. The issue has always been when did/does the clock start ticking? Did you measure the internal temperature of the pizza? It's a bag of enforcement worms so some have simply gone to internal temperature that way there is no discussion on how long it was at a temperature below 140F. Again, would I join you reheating a nearly cold slice of pizza and enjoying it without any fears of getting ill? ABSOLUTELY! But when you are in the business of selling food you have to play by a different set of rules that are dictated to you by informed and not always so informed people, but whatever the case if you want to remain in business you gotta follow the rules imposed upon you that are made to have a wide spectrum application not just to pizza but other foods as well. Just ask anyone with a buffet what their main food safety challenges are. Most will say keeping the cold stuff cold and keeping the hot stuff hot as defined by someone else.

With all of that said, does it mean that you can't get sick/ill eating pizza that has cooled to under 140F for an undetermined length of time? Absolutely not, but if we get sick eating that pizza, it's only us, not 200 other people.

Shop Talk / Re: how the crispiness of the pizza last for 15 mins after cooking?

I'm with Craig as I can't remember anyone ever saying that 70% absorption was necessary to make pizza. There are times and types of pizza where 70% absorption might be used but I would not call this the "norm". If I personally had to pick a number to represent the typical dough absorption of a pizza dough it would probably be 62% but even that is open to a lot of discussion as the absorption depends upon so many different factors all coming together such as flour, formulation (especially oil content), amount and type of fermentation, type of dough (wheat, whole-wheat, white, etc.) type of pizza being made (New York, deep-dish, thin crispy, thin cracker, and how the dough will be formed into a skin, just to

name a few, all enter into the dough absorption equation.

Dough Clinic / Re: Hydration

Pete;

You are absolutely correct in getting the crisp/crunch without excessive drying of the crust when re-crisping the pizza/slice over an open flame. It's just that it doesn't work in a commercial setting as we are required to get the internal temperature up to not less than 160F before serving. The toaster oven I admit can be a real challenge as the time and temperature setting are critical, the reason for this is because the toaster oven is a source of very dry heat (electric resistance heating) which can really raise havoc on a crust by getting it too dry (insipidly dry) in short order if not done correctly for the product at hand. The same thing might be said for microwave re-heating of pizza. Pizza that has a higher finished moisture content as well as a higher oil content tend to re-heat better than a pizza made on a crust having a lower moisture and oil content. When re-heating over an open flame the temperature can be over 1,000F (depending upon the distance from the flame) but that flame is actually pretty high in moisture content as compared to heat that is produced by electric resistance (very dry). We refer to this as direct heating (flame is in the baking chamber or flame heated air is circulated into the baking chamber) or indirect heating where the flame is within a tube which is heated and the air is passed over the heated tube and then circulated in the baking chamber. Direct heating almost always bakes better than indirect heating as it doesn't dry out the product nearly as much AND the moisture content of the heat significantly improves the heat transfer properties (think of 212F dry heat as in an electric oven and steam, both at 212F) so a better and faster bake (about 20% faster) is achieved when that moisture is present. Huge commercial ovens (some over 300-feet long) have addressed this issue where they have indirect heating BUT they have incorporated a means of recirculating a portion of the moisture rich oven air back into the baking chamber to achieve baking properties more like that of direct heating. Ovens and baking are a pretty cool thing to study.....both are in a constant state of flux but the physics don't change.

Shop Talk / Re: how the crispiness of the pizza last for 15 mins after cooking?

Norma;

Diastatic malt?

Dough Ingredients / Re: Salt and Yeast

Pete;

We'd better break the news to Adam Peyton, owner of AJ's New Your Pizzeria (two stores in Manhattan, KS and one in Topeka, KS.) Voted best pizza by the student body at K-State University and best pizza in Manhattan, KS, plus he just got the honor of best pizza in Topeka, KS at his Topeka store. His whole business is based on finishing a par-baked crust as a pizza slice using a commercial pizza oven (XLT air impingement oven). We used the air impingement oven approach as it afforded us the ability to tailor the airflow to the top and bottom of the pizza to achieve the best bake. We also have a Marsal deck oven but when we tried to reheat slices in the deck oven (pizzas placed right on the deck) we got pizza that was not thoroughly heated throughout (we have to reheat to a minimum of 160/165F). By using the XLT oven and 3-minutes reheating time the slice or whole pizza is thoroughly reheated and so hot that it cannot be eaten without letting it cool a little (much to the delight of the customers) We did a lot of work using microwave to assist in the baking of pizzas and what we found out was that it can be done

(Turbochef uses programmed magnetic resonance very similar to microwave) as part of their combined technology approach to fast baking (bakes a 14-inch pizza in just over 2-minutes from raw dough). The biggest problem that we encountered with using microwave as a reheating tool was that it has a very fine line between reheating and toughening and to compound the issue the time and power setting as well as the age of the microwave oven all influence the actual time it takes to reheat and then the dough formulation will impact how much microwave baking the crust will tolerate before experiencing the undesired toughening. If you are working with a single dough formula using a known type of fat (oil or shortening/it does make a difference) it can be done with good success but if anything changes as it so often does in a commercial setting things go south in a hurry.

Shop Talk / Re: how the crispiness of the pizza last for 15 mins after cooking?

Kosher salt with its larger crystal size takes longer to dissolve while the salt used by commercial bakeries for regular and frozen dough production has a smaller particle size than even regular table salt, it is almost, but not quite to a powdered form. In addition to regulating yeast activity and strengthening the dough salt also helps frozen doughs by reducing water activity in the dough (only salt and sugar will reduce water activity) for this reason salt is normally maximized in frozen dough production with levels at 2 to 2.25% or even slightly higher, at the same time because frozen dough is not fermented the products made from it are inherently lacking in flavor so with the higher salt level the flavor is improved slightly at the same time.

Dough Ingredients / Re: Salt and Yeast

Nat;

Some say two hours, others say three hours.

Shop Talk / Re: Cooked pizza display cabinet (pizza sold by slice) - heated or not?

Billy;

From what you are saying it sounds like a dough sheeter might have been a better choice for opening the dough. The reason being is that a thin crispy or cracker type crust would come closer to providing the characteristics it appears you are looking for. Using what you have, let's think about some dough changes and see if we can press the dough...no promises.

- 1) Reduce the dough absorption to 50% (5,100-grams) The dough will be a lot STIFFER.
- 2) Mix the dough JUST until it comes together in the mixing bowl.
- 3) Adjust the water temperature to give you a finished dough temperature of 85F/29C (water temperature of about 75F/24C will be needed).
- 4) Immediately after mixing scale and ball the dough.
- 5) Box the dough balls, oil the top of each dough ball, stack the dough boxes (covered) and allow to proof at room temperature for 30-minutes, then take to the cooler and cross stack for 2-hours then down stack, cover and cold ferment for AT LEAST 24-hours (48-hours will be better).
- 6) Remove dough box from the cooler and allow to warm to 60F/16C before removing from the dough box, oiling the dough ball and pressing.

This is not a typical dough management procedure for a pressed dough but what we are trying to accomplish is to make something closer to a cracker type dough and manage it in such a way so as to allow it to be effectively opened using a dough press. Fermentation is going to be the solution here. When you remove the dough

fro the box for pressing it should show signs of being well fermented, handle it gently as you remove it from the box, oil it and take it to the press (DO NOT EVEN THINK ABOUT RE-SHAPING IT). Let's see where this brings us out at (pictures of the dough after the C.F. period and pressing would help).

Dough Clinic / Re: Here's my recipe. Why is it not crispy?

Pete;

It will vary with your equipment used to re-heat (from cold) or re-freshen (from warm, such as a delivered pizza). Before we got our toaster oven we used to place a slice of pizza over the top of our 4-slice toaster and start all four. The heat did little for the top of the pizza but it did dry off the bottom. Now that we have a toaster oven it takes about 1.5 to 2-minutes for a cold slice or about half of that to re-freshen a delivered (actually a carry-out for use as we live outside of any local delivery area) pizza slice.

Shop Talk / Re: how the crispiness of the pizza last for 15 mins after cooking?

Most of the pizza display/holding cabinets sold in the U.S. are heated to maintain the pizzas at 145F/68C for food safety reasons and because most food safety departments require it for the same reason. As an added benefit for you the time needed to re-freshen a slice can be a little as 60-seconds for a slice of thin crust pizza. With the pizza held at the heated temperature all you are now doing is "re-freshening" the slice by that I mean you are heating the bottom to restore the crispiness, bringing the oil back to the surface to improve the appearance, and enhancing the overall flavor of the slice. If you were holding the pizzas in a non-heated cabinet you would need to "re-heat" the pizzas to bring the internal temperature back to 165F/74C for food safety reasons and to ensure the center of the slice is uniformly heated to serving temperature which with a fresh baked pizza will be something between 165F/74C and 185F/85C. This will take longer to accomplish so it will impact your "turn-around" time. In any case you will want to experiment with re-freshening or re-heating (which ever way you decide to go) by placing the slices directly on the oven deck and on a pan or pizza screen to see which method works best in your application.

Shop Talk / Re: Cooked pizza display cabinet (pizza sold by slice) - heated or not?

Actually, they do have delivery vehicles which do exactly as you have suggested, reheat the entire pizza at the time of delivery. The problem is that you would need a fleet of the vehicles (thing of Domino's recent delivery project with special vehicles, but special heated delivery racks were explored many years ago. Pizzas were placed into a cabinet in the delivery vehicle and held at 140F and then just prior to arriving at the delivery address the heat was increased, then the pizza was boxed and brought to the customer. A few years ago it seemed like new delivery vehicles were on display at Pizza Expo every year. Lately it seems the interest has waned.

Shop Talk / Re: how the crispiness of the pizza last for 15 mins after cooking?

No, that's the real thing. What I'm referring to here is a commercial inactive dry sourdough flavoring material that is added to the dough as a flavoring material. The way the stuff is made is by preparing a very strong sourdough starter and then inactivating it by pasteurization followed by freeze drying and then grinding it to a

fine white (actually off-white) powder. Corion Food Ingredients Company out of Kansas City, Missouri as well as Puratos Corporation (Cherry Hill, N.J.) are two of the major suppliers of this type of ingredient.

Off-Topic Foods / Re: Real Pizza Dough Flavor @ \$52/lb

Phhlad0;

What you are experiencing first hand is too much elasticity in the dough and yes, the addition of VWG can contribute to increased elasticity, so before making any other changes I would suggest deleting the VWG and the additional water that was added with the VWG to see if that helps. If that doesn't help then my next step would be to increase the IDY to 0.33% (5-grams) this will provide for more fermentation all things equal which should result in a softer, more extensible dough that opens more easily.

Dough Clinic / Re: Need help making dough more extensible

Pfhlad0;

The easiest way to look at it is this way:

Your total KABF is 100% or $1566 - 44.84 = 1521.16$ -grams

The VWG weight is 44.84-grams or 2.9% ($44.84 \div 1521.16 \times 100 = 2.94775$)

Absorption of the KABF is let's say 62% so 1521.16×62 (press the "%" key) and read 943.1-grams of water.

Absorption of the VWG is 150 to 200% so let's use 200%; 44.84×200 (press the "%" key) and read 89.68-grams of water.

Total dough water is $943.1 + 89.68 = 1032.78$

Total % dough absorption = $1032.78 \div 1521.16 \times 100 = 67.89\%$

While some do it, it is not recommended that you combine the flour and VWG as your total flour. The reason for this is because the VWG is a variable in the formula, and it is also an added ingredient and it must be handled in the same manner as any other ingredient (not included in the flour weight).

Hopefully this clears up any confusion.

On a separate note, you indicate that your dough is "difficult to stretch" is it too strong? Too elastic? Those are the characteristics imparted by VWG so maybe you don't need any VWG for your dough management procedure. Truth is, VWG is not used very often if the dough is properly managed, form what you have said it appears that your dough is well managed and 2-days CF is not a long time so the question is, "is VWG even needed at all?"

Dough Clinic / Re: Need help making dough more extensible

The pans appear to have a gray finish which is fine, no need to do any seasoning. The color absorbs heat almost as well as the black colored pans so. I looks like one of the pans has some mileage on it as I see some seasoning beginning to develop around the top inside edge.

Stones/tiles/steel, Pans & Accessories / Re: Anodized aluminum pans

That's a tough one, to answer as there is no real answer to your question. There is no way right now to bake a fresh pizza, stuff it into a box, place it into an insulated "moon" bag and run around with it in the back of a vehicle looking for a delivery address for much more than just a few minutes without the pizza steaming itself to death. With that said, there are some things that you can do to diminish the impact to your customers.

- 1) Allow pizzas to "steam-off" for about 2-minutes before boxing them.

- 2) Use a Pizza Savor mat or a ripple sheet in the box to hold the pizza off of the bottom of the box which will allow for ventilation under the pizza and to prevent the pizza from sitting in any oil or moisture released from the pizza.
- 3) Make sure your delivery boxes have steam vents and make sure they are opened.
- 4) Take your pick of delivery bags, the work that we did evaluating them showed little difference between them.
- 5) Deep-dish pizzas seem to hold up to delivery better than thin crust pizzas, at least the effects of the steaming process are not perceived as detrimental to quality as they are with thin crust pizzas.
- 6) If you go with thin crust pizza consider a thin cracker type crust, but don't target a super thin crust, instead shoot for something around 10 to 11-ounces for a 12-inch pizza (dough density loading of 0.088 to 0.097/ounces of dough weight per square inch of surface area).
- 7) Use as long of a baking time as possible to achieve the driest/crispiest crust possible.
- 8) After opening the dough ball into a pizza skin brush the skin VERY LIGHTLY with oil to help create a moisture barrier between the toppings and the dough.
- 9) Nothing beats an air impingement oven for baking DELCO (delivery/carry-out) pizzas. The reason for this centers around the moisture control afforded by the high velocity airflow used in this type of oven.
- 10) Whatever dough formula you opt to use it is suggested that you include not more than 2% fat in the formula. The fat in the dough formula will help to repel moisture, helping to keep it from entering into the baked crust.
- 11) When all else fails, EDUCATE YOUR CUSTOMER, encourage them to place the pizza into a preheated oven at 400F/204C for a few minutes to restore some of the lost crispiness. I have gone so far as to get some pizza stones with my name and contact information on them and sell them to my customers at cost, I then give them a free book of coupons good for \$2.00 off on their next pizza purchases (total value not to exceed amount they paid for the pizza stone, so in a way you might say that they are getting the stone for free).

You might search through my archived articles at PMQ <www.pmq.com> (In Lehmann's Terms) as I remember writing an article on this not too terribly long ago.

Shop Talk / Re: how the crispiness of the pizza last for 15 mins after cooking?

Full Strength is definitely the way to go as opposed to an all purpose flour. If you go to the PMQ RECIPE BANK and look under the heading of Sandwich Buns I have a formula and procedure posted at the bottom of the column. I good number of posters at the PMQ THINK TANK have reported excellent results using this formula and procedure. We used it locally here to produce a Chicago style Italian Beef sandwich sandwich.

You really need the protein content of the Full Strength or even All Trumps to get the desired "chew" in the finished bun without it falling apart after soaking up all that juice.

Off-Topic Foods / Re: Full Streghth vs Bread Flour and/or All Purpose flour for Sandwich Rolls

Enchant;

You can have anodized finish pans in both bright (silver) and dark finish. If the pans are not a dark anodized finish they are a bright finish and need to be seasoned prior to use not so much for release properties but to improve the heat absorption

of the pans. If the pans happen to be non-anodized bright finish they need to be seasoned both inside and out to improve the release properties of the pan and to improve the heat absorption properties of the pan. Since it looks like your pans have a bright anodized finish only the outside of the pans need to be seasoned. Seasoning the inside of the pan is not critical to release but it may improve the release.

Stones/tiles/steel, Pans & Accessories / Re: Anodized aluminum pans

Huh!

My pizza DOUGH has never had a cheese and garlic flavor, just the good old fashion aroma and flavor of FERMENTATION which is transferred to the finished/baked crust to provide a great overall flavor as well as a more digestible crust (for whatever that's worth) and a more tender eating crust (high on my priority list).

If you're of the ilk that believes more flavor is needed in your crust and don't want to go the fermentation route try adding 1 to 2% of a dry, white sour aka dry French bread sour (this is NOT an active culture), you just add it to the dough and it imparts a reminiscent sourdough flavor to the finished crust. This approach does work and is being used commercially where fermentation is not an option. Additionally, keep in mind that "bread flavor" essentially pizza crust flavor has never been successfully synthesized, there have been a lot of attempts but no successes, finished crust flavor is just too complex.

Off-Topic Foods / Re: Real Pizza Dough Flavor @ \$52/lb

Islandguy;

Pizza dough is not mixed to full gluten development or actually, even close to it during the initial mixing stage so the "window pane" test is of little relevance. Bread yes, but not pizza unless you are making frozen pizza dough but that's a whole different story. So I wouldn't worry too much about gluten development for right now. Then you said you cold fermented the dough for 4-days after which it tore badly and was sticky when you opened it into a skin and tried to peel the dressed skin into the oven. From this description it sounds like the dough was over fermented. This can be due to formulation of the dough, the dough management procedure, or the temperature of the cooler/fridge where the dough was cold fermented. If you would share your dough formula, dough management procedure (including the temperature of the dough as it came off of the mixer), and confirmation of the temperature of the cooler/fridge I'm sure we can figure out what's responsible for the issues you are experiencing. Also please let us know something about your dough mixer, bowl size and type of mixing attachment, a picture would be great if you can provide one.

Dough Clinic / Re: Dough will not windowpane

In addition to any responses to your question here, you might also want to run your question across George Mills at the PMQ Think Tank <www.pmq.com>. George is the resident equipment expert at the Think Tank.

Shop Talk / Re: Prep table that can keep temps in 100 degree heat

A bright silver colored aluminum pan (though not usually recommended) might help you in this case by reflecting a portion of the heat giving a slower more thorough bake.

Chicago Style / Re: Deep dish in WFO?

JS:

If your dough is fully relaxed after 48-hours of cold fermentation time, as it should be, it will only take a few passes with the pin to open the dough, remember to use the pin properly and use several lighter passes as opposed to a single heavy pass, and REMEMBER to only open the dough with the pin to 3/4 or a little more than finished size.

Dough Clinic / Re: Dough thin in middle

So, the question that begs to be asked is "at what temperature will the pizza be baked at?" Remember, the oven is cooling down (from what temperature?) so there will be no constant temperature.

Chicago Style / Re: Deep dish in WFO?

JS;

As just about anyone on this site will tell you, I am a very strong advocate of using a method that we developed a number of years ago to train people in the art of opening a dough ball into a pizza skin without the issues that you are experiencing. This has been discussed many time here but here it is again.

Adjust the temperature of your mixed dough so it is between 75 and 80F (this is done through adjustment of the water temperature). Take the dough directly to the counter top/bench for scaling and balling. Oil the dough balls and place into individual plastic bags (Food Bags or bread bags) and twist the open end into a pony tail to close, tuck the pony tail under the dough ball as you place it in the fridge. Allow the dough to cold ferment for 48-hours then remove from the fridge and allow the dough to warm to 50 to 55F (30 to 60-minutes). Turn the dough ball out of the bag onto a floured surface (the dough ball should invert the bag as it falls out of the bag). Flour the dough and flatten slightly using your hands than use a rolling pin or pie/pastry pin begin rolling the dough out to roughly 3/4 or a little more of the finished diameter, then begin table stretching the dough to final diameter. I have some videos on my web site <www.doughdoctor.com> which may help you. I also have a video showing this procedure being used very successfully in a pizzeria, just contact me at <thedoughdoctor@hotmail.com> and request a copy of the video. I've found that I can have a total novice opening the dough as good as a pro in as little as 30-minutes using this procedure, this procedure allows you to produce good skins while developing your skills at opening the dough and in essentially every case the student soon progresses on to more traditional methods of opening the dough while still being able to retain the uniformity across the diameter of the dough skin.

Dough Clinic / Re: Dough thin in middle

Gosseni;

You don't need to be trained all that well in identification of the morel mushroom, just learn the difference between a real morel and the false morel (very easy to do) and you're good to go, like I said, it limits your possibilities but allows us "uneducated" to go on hunting and eating mushrooms another day.

Chitchat / Re: Wild mushroom hunters?

D.C.;

To avoid disappointment, don't bank on a 3 to 4-minute bake. The thermostat dial is for controlling the bottom (deck) temperature and the other one is for the top temperature. On some ovens this is just a damper which pulls out for less top heat and is pushed in for more top heat. Your best baking temperature for a balanced (top and bottom) bake will most likely be about 600F or a little less. As with all deck ovens be sure to check the calibration of the thermostat. This is easily done

using one of the hand held infrared thermometers available for about \$15.00 (I just recently got one for \$12.00). Just to confirm, your oven has a composite deck as opposed to a steel deck, is this correct?

Dough Clinic / Re: First time using a Deck Oven

About the hottest that I've been able to do a fresh baked deep-dish pizza at is 575F. The problem is that pizzas are baked from the bottom up and with the thicker crusts you need more baking time to achieve a complete bake so at the higher temperatures you end up with an over baked top and a charred or under baked bottom to the pizza. You will also probably need to bake a deep-dish pizza on a screen in the oven too so as to create an air gap between the pan and the deck to prevent over baking the bottom of the pizza.

Chicago Style / Re: Deep dish in WFO?

Just as a cautionary note for those like me who are not well versed in mushroom identification you might want to take a look at (CTV Montreal News Videos) on the article about another victim of the Death Cap Mushroom.

Chitchat / Re: Wild mushroom hunters?

P.R.

You say maybe 4 or 5 basic pizzas, do you mean different toppings or different types of pizzas? If you are planning to sell whole pizzas why not just one pizza and let your customers decide on the toppings? If you are planning to sell slices and just reheat them at the time of sale you can probably get away with just 3 different topped (the most popular) pizzas.

New Forum Members / Re: Newbie from Northern Ireland

Good point Craig, might try using 1/16-inch steel. I will stamp well and is still easy to work with.

Shop Talk / Re: Steel Number Tents

You might try making your own using 1.5 or 2-inch X 1/8-inch aluminum flat bar stock and a number stamp kit. Cut to length, stamp as desired, using a bench vice and a machinists hammer fold the flat stock to the desired angle so the number is on the outside, repeat.

Just a thought.

Shop Talk / Re: Steel Number Tents

The "Bread Flour" comes in at 12% protein content (a strong winter wheat type of flour) and Superlative (Supreme) is a spring wheat flour coming in at 12.2% protein content. As Essen1 indicated, both are excellent general purpose pizza and bread flours. I regularly recommend the G.M. Bread Flour as a bench mark flour for someone just getting into pizza making at home.

Dough Ingredients / Re: La Romanella Hi Gluten Flour

One of the benefits to using PZ-44 or any other reducing agent for that matter is that you can make a low absorption dough such as Big Dave's and still achieve the necessary extensibility to open the dough by hand. A good many of the commercially manufactured pizzas crusts (frozen pizzas) are made in this manner due to the fact that the sheeters being used are not always compatible with the dough characteristics resulting from increased absorption needed to impart the right combination of extensibility and elasticity. When reducing agents are used (with highly controlled processing parameters) you can use a low absorption dough

that exhibits excellent processing characteristics on high speed automated equipment and essentially "dial in" the extensibility and elasticity needed through manipulation of the amount of reducing agent used.

Dough Clinic / Re: How to make homemade PZ-44 ?

Wangji;

Reducing agents such as PZ-44, dead yeast, onion and garlic powder are most commonly used only when opening the dough using a dough press and only occasionally when using a sheeter/roller. When opening the dough by hand it is seldom used because we can make adjustments to our procedure in hand/manual opening the dough but when using a press or sheeter there isn't always a lot that can be done to address the snap-back/dough memory issue. The main tools to address snap-back are dough absorption and fermentation time with the actual dough temperature at the time of opening being a close runner-up in importance. If you are experiencing problems with excessive dough memory I would first see if the condition can be improved through the addition of more water (increased dough absorption), if that doesn't work use the dough absorption that gives you the best dough handling properties and then begin a series of tests incorporating more fermentation into the dough. Keep in mind that you can also increase dough fermentation rate by increasing the dough temperature or the yeast level. For the most part if your yeast level is something between 0.5 and 1% of the flour weight (compressed yeast) or its equivalent in ADY or IDY your yeast level is probably OK, if the dough temperature immediately after mixing is something close to 21C/70F and the actual dough temperature at the time of opening the dough is in the 50 to 55F/10 to 13C you're probably OK there too so that might indicate that you just need to increase the total fermentation time of the dough.

Dough Clinic / Re: How to make homemade PZ-44 ?

Juran;

Those pizzas look great, and when you consider how far the dough had to be transported they look even better! You did well. Now with some success under your belt you can fine tune your dough management to make it even better (as if it needs to be any better). :)

Dough Clinic / Re: Dough ball, how to end up with proofed nice, non flattened, dough ball

One of my spring past times is hunting morels and then bringing them home to fry-up in butter or mixing into my scrambled eggs for breakfast, a once a year treat! I am sure that there are other varieties that I'm overlooking but that's the only variety that I can positively identify without a supermarket label.

Chitchat / Re: Wild mushroom hunters?

P.R.

Congratulations! Nice looking trailer.

What kind of oven do you have in the trailer? Do you make the dough yourself or have it made for you/buy it? What kind of pizzas are you making? Tell us as much as you can about your trailer and we'll try to fill in the blank spaces for you.

New Forum Members / Re: Newbie from Northern Ireland

I don't know if they were anything like those made in Jamaica but in Jamaica the dough is essentially what is referred to as a mealy type pie crust soft wheat/pastry flour 100%, salt 2%, shortening (lard or butter works best) 25%, whole egg 5% and just enough ice cold water to make a coarse textured dough (about 30% if I

remember correctly). A pastry knife attachment is used to mix the dough but a flat beater can also be used, just take care so you don't over mix the "dough" into a homogeneous mass, if you do the crust will be tough rather than flaky and tender. Directions: Place lard in the refrigerator to chill thoroughly (it must be hard/firm or it will be mixed into the flour during mixing. Put the flour and chilled lard (best to break/cut it into pieces and add it all at once) mix at low speed just until the "dough" has a coarse sawdust like texture then add the ice water into which the salt and whole egg are suspended and mix just enough to incorporate the water (the dough should be slightly granular). Remove from mixing bowl, scale about 75-grams, form into a "puck" shape by pressing together with your hands, place on a lightly floured sheet pan and cover with stretch wrap and allow to hydrate overnight, on the following day roll the dough out to about a 6" diameter circle, add the filling, brush half of the circle with water and fold the dough over the filling onto the wet portion of the dough, crimp the dough together (a fork works well) and bake at 425F on a sheet pan/cookie sheet.

We have a Jamaican restaurant here in Manhattan and they use their jerk chicken and pork for the filling.

Note:

Use a pre-cooked filling

The yellow color is from the use of saffron and or curry powder which can be added to both the dough (for the bright color) and the meat filling.

If the dough is too tender increase the mixing time slightly.

This dough is easy to make in a food processor, just mix it until it comes together and it's done.

If you're in a hurry you can forgo the overnight hydration period by mixing the dough a little longer, just until it looks like it is becoming smooth.....but this crust will not be as flaky.

Off-Topic Foods / Re: Jamaican meat patties NY style

I haven't followed any more work on the Alveograph since we got one in the (might have been mid 1980's???) We did a lot of work using it but the biggest problem that we encountered was that it might work well with one flour but then not with another flour sample, additionally with the work that we did with the Crop Quality Council we found that the Alveograph was not a good predictor of wheat/flour performance with new wheat varieties, some having performance characteristics not normally encountered in commercial flours. For example, we might encounter wheat which gave flour with a very strong protein with limited elasticity (much like a durum flour) which performed poorly using the Alveograph, but when using the Farinograph we could see that the flour also had a very good (long) mixing tolerance which while not good for the bakers (they like a flour that develops its gluten within a specific time period, 10 to 13-minutes) the flour, when mixed properly produced excellent finished loaf volume (pup loaves, miniature bread loaves) so the wheat from which the flour was made could be readily identified as a potential blending wheat. As for any new comparison research between the Alveograph and the Farinograph since the paper published by Dr. Hoseney at K-State, you would have to research that to see what there is.

One other thing, since the Alveograph works well with the softer, more mellow flours, it is commonly used in the quality assessment of soft wheat flours/wheats. In this application it seems to work quite well as might be expected since our soft wheat varieties are typically closer to the European hard winter wheat varieties. When I was on the McDonalds International Task Team working throughout all of Europe helping bakeries make buns for McDonalds as they expanded into Europe, we found that local flours made from the local wheat varieties were not nearly

strong enough to make a decent hamburger bun (many of the bakeries had never even made a hamburger bun) but the word was that there was French flour that was much stronger, it was stronger and it made excellent buns using the right dough management procedure (80/20 sponge dough procedure with a 4-hour sponge), then I got to thinking "So how is it that the French are milling such a strong flour when their domestic wheat varieties are not selected for the properties needed to make such a strong flour with good mixing and fermentation tolerance?" I got to making some phone calls to my friends at U.S. Wheat (government agency responsible for promoting U.S. wheat and flour into the international markets) and I soon found out that France was now importing greater quantities of DNS (dark northern spring) wheat from both the U.S. and Canada, it soon became apparent that what they were doing was to produce strong flours from imported wheat for use in the "new" expanding U.S. fast food applications throughout Europe and selling it under their name, not a problem as everyone was happy, U.S. and Canada were selling a premium wheat to France and bakers had a source of the strong flour needed to produce the new products on their production schedules, and yes, they were using the Farinograph to measure flour quality, I don't know if they were also using the Alveograph, but it wouldn't surprise me if they were. Remember, this was all back in the mid 1980's, I'm sure things have changed to some extent since then.

Dough Clinic / Re: Factors Affecting Gluten

AB;

My first thought was that possibly your flour was too low in protein content but with 12.3% protein content it should be OK. Your salt level is on the low side at 1-teaspoon (approx. 6-grams) or 1.2%. I would suggest doubling the amount of salt to 2-teaspoons (12-grams) 2.4%.

Your fresh yeast level is also on the high side for a 3-day cold ferment. I would suggest reducing it to around 3-grams. You didn't say what you put the dough in when you put it into the fridge, but oiling the dough balls and placing them into individual plastic bags (like bread bags), twisting the open end into a pony tail and tucking it under the dough ball as you place it in the fridge is a good method to start with. Lastly, you might be allowing the dough to warm too much before opening it, we always get better results when allowing it to warm only to 50 to 55F/10 to 13C.

You might incorporate these changes and let us know if you see any improvement in your dough.

Dough Clinic / Re: Help - Pizza Dough too fragile

A good crust is every bit as good as a slice of artisan bread in my book, the toppings just add variety and interest.

I eat the crust from every slice.

Chitchat / Re: Do you eat the crust of a NY pizza or chuck it?

Pon;

I think you'll find that you will have a stronger dough that is easier to open when you allow it to cold ferment for 24 to 48-hours. While you do get some biochemical gluten development taking place in three hours at room temperature, you should see a significant improvement after the longer cold fermentation period.

Dough Clinic / Re: Saucing help..or maybe it's the dough

I don't think it will really matter since we are trying to kill the yeast. Just suspend the yeast in water (115F) since it is closer to the kill temperature, and immediately

put it into the pan and place into the oven. If you have a fan in the oven I'd suggest turning it on to speed the evaporation.

Dough Clinic / Re: Deactivated Yeast

A number of years ago Dr. Carl Hoseney, Kansas State University wrote a paper on comparing the Alveograph (used in Europe) to the Farinograph (used in the U.S.) with regard to the ability to measure flour performance. Results of the study indicated that the Alveograph gave better results with the softer/weaker flours used in Europe than it did with the stronger U.S. flours. The Farinograph was more accurate with the U.S. flours and less accurate with the European flours. This might stand to reason because the Alveograph is an invention of the French while the Farinograph is an invention of the U.S. so they were developed with their respective flours at hand. The Alveograph has been around for a good number of years now but it still is not used very often to measure flour quality here in the U.S. but the Farinograph is still widely used by both the milling industry as well as university and independent cereal grain/wheat research laboratories.

Dough Clinic / Re: Factors Affecting Gluten

PZ-44 is a blend of L-cysteine and whey, the product is formulated so 1% (flour basis) provides approximately 20-parts per million L-cysteine. In almost every case the optimum level of PZ-44 requires will fall between 1 and 2% or 20 to 40-ppm L-cysteine. Due to the fact that the L-cysteine, in its crystalline form is very hygroscopic and the amount is so small it must be blended into something to make handling/scaling easier. In the case of PZ-44 whey was selected as the carrier since it doesn't impact dough absorption and is relatively inert in the dough except for its contribution to crust color owing to its lactose content (about 70%), but even at that, 1 to 2% isn't going to impact crust color very much at all.

If the "dead yeast" experiments prove successful it might provide a useful alternative to PZ-44 where it isn't available. As a side note: Remember that you can also add powdered onion and/or garlic to achieve a moderate level of dough relaxation. The amount needed isn't all that much either, start with 0.25% of either or both and go up to 0.5% if necessary.

Dough Clinic / Re: How to make homemade PZ-44 ?

Just make a water-yeast suspension (1-part yeast to 5-parts water) put the suspension into a shallow pan and place in your oven at NO MORE than 140F (verified with a thermometer) and let it remain in the oven until the water has evaporated, remove the dried yeast from the pan (scrape) and pulverize by rolling with a rolling pin and then manually forcing the material through a screen (like a tea strainer) to break up any large lumps. If you have a very small food processor you could use that too.

Dough Clinic / Re: Deactivated Yeast

QwertyJuan;

Your dough size looks sufficient for the bowl capacity so we can take that off of the table now. I do have one more question regarding your mixer, I'm assuming that the agitator is working the dough without stalling or stopping for a second or so, and that the agitator you are using is a reverse spiral dough arm as opposed to the standard Hobart "J" hook. Are these valid assumptions?

Dough Clinic / Re: dough mixing and biochemical gluten development

Pon:

If you have a couple of dough balls to work with you might want to pull one after 24-hours and another at the 48-hour mark to see which time works best for you.

Dough Clinic / Re: Maximising gluten development for relaxed dough for handstretching

I think what you are trying to do is an interesting project.

The yeast has to be in a suspension to achieve the results desired, that is to kill the yeast and collapse the cell wall but not to denature (destroy totally) the yeast cell. Remember, what we are trying to do is to allow for the release of the plasma material (glutathione) from the inside of the yeast cell. If the temperature is too hot or the time is too long the glutathione will be destroyed too.

You bring up an interesting approach when you propose putting the yeast suspension in a very thin layer on a sheet pan in the oven then carefully watching over it using an IR thermometer, (1) If you put the yeast slurry on the pan in a very thin layer it will heat throughout pretty uniformly so you won't need to agitate the slurry to allow for uniform heating. (2) You will need to carefully monitor and possibly control the temperature to prevent things from getting up over 140F. I'd suggest doing a few trial runs using just plain water first to perfect your method. Why do I think your idea might work? Many years ago ADY was manufactured in a similar manner, it was sprayed onto a heated drum, the water evaporated off and the dry yeast was removed from the drum using scrapers BUT the problems encountered using that yeast was one of inconsistent dough softening when the ADY was used (this is why ADY was never used commercially, it was only promoted for home use where the inconsistent dough softening would not be a problem). As you might have guessed, the softening problem was due to the release of glutathione for the yeast cells which were killed as a result of the heating and drying process (sound familiar?) and remember this, they were not trying to damage the yeast in any way. In your case we are trying to kill the yeast so we are using a higher temperature than what that drying drum was at.....hummm, just might work!

The results might be very interesting to those who are experiencing problems with dough memory/snap-back and either can't or don't want to increase the fermentation time. It would also be of interest to anyone wanting to make a last minute pizza for dinner (emergency dough).

If you decide to pursue this please keep us posted.

BTW: ADY is now made using much improved drying processes by which very little yeast is destroyed during the drying process
(think spray drying).

TDD

Dough Clinic / Re: Deactivated Yeast

Poniel;

Biochemical gluten development will take care of your gluten development for you. After mixing your dough on the bench/counter top divide it into desired weight pieces for the pizzas that you are planning to make, form into balls, oil the dough balls and place into individual plastic bags (Food Bags work well, bread bags are perfect, twist the open end to form a pony tail and tuck it under the dough ball as you place it in your fridge. I normally look at 24-hours as a good cold fermentation time but I think 48-hours provides a better flavor. To use the dough balls, remove from the fridge and place on your counter top to warm to at least 50F (usually requires something close to 2-hours depending upon room temperature), open the bag and invert over a floured surface letting the dough ball strip the bag inside out

as it falls from the bag. Flour the dough ball and begin opening the dough into a skin. Your dough will have excellent gluten development. We have done this for well over 30-years and have never been disappointed. When I conducted our pizza class I used to open a dough ball made in this manner and then have three or four students gather in a circle and stretch the skin over the back of their hands to see how large of a skin they could make. We never measured the diameter but the skin was thin enough to clearly see details of your skin through it. There has been some previous discussion on biochemical gluten development here not too long ago.

Dough Clinic / Re: Maximising gluten development for relaxed dough for handstretching

How much flour are you using in your dough?

Dough Clinic / Re: dough mixing and biochemical gluten development

Actually, what you are referring to is the chewiness of the finished crust, not the dough. With hand kneading it is hard to be definitive about anything due to the inconsistency and normal variability of hand kneading. The difference in chewiness might be due to the fact that with 6-minutes of hand kneading you are incorporating less dusting/bench flour into the dough than you would with 10-minutes of kneading. That might create a slightly dryer dough condition after that flour hydrates which "could" result in a chewier finished crust. Like I said, there are just too many variables in hand kneading to say anything for sure, all speculation.

Dough Clinic / Re: dough mixing and biochemical gluten development

Yes, there is a difference. The trick is to heat the yeast just enough to kill it and collapse the cell wall without denaturing it. The thermal death point for bakers yeast is 136F so you might try making a water bath that will hold steady at 140F, then make a yeast suspension and place it into something like a glass test tube and insert into the water bath long enough for the yeast suspension to reach 140F this will ensure a sufficiently long exposure time to ensure the kill, to make a dried product like you can buy you will need to freeze dry the dead yeast suspension and grind it into a powder. If you have a dehydrator you might try drying it at around 120 to 125F to see if they will work (never did it that way). To test the product after drying make a dough that you are familiar with, and add 2% flour weight basis of the dead yeast powder and see if you get any dough softening. If you are machine mixing you should see it at the mixer but if you are hand mixing/kneading it may take until you open the dough balls before you see any significant effect. What you are looking for is dough that is softer than normal and which exhibits improved extensibility (stretches easier) and with less or no memory/snap-back at forming. This could be an interesting project.

Dough Clinic / Re: Deactivated Yeast

Any Hobart mixer that was built prior to about 1975 was indeed a "tank" they used their own motors and they were awesome! After about that time they were required to use motors built by someone else and soon acquired a nick name of "gutless wonders" the mixer design was still great but the motors were not nearly as good as when built by Hobart. I was not very impressed with any Hobart mixer since then but now with their relatively new Legacy series of mixers I'm once again impressed.

I have the specifications, exploded views and parts list with part names and number for the C-100 mixer. If you are interested in getting a copy send me a mailing address at <thedoughdoctor@hotmail.com>

[Prep Equipment / Re: Found this Hobart C100 at an estate sale](#)

QwertyJuan;

How are you defining tenderness of the dough?

Tom Lehmann/ The Dough Doctor

[Dough Clinic / Re: dough mixing and biochemical gluten development](#)

Thanks Mitch :)

I'll try to keep this short and to the point.

Dough Strength: Probably best defined as the extensibility and the elasticity characteristics exhibited by the gluten in a dough structure.

How to Manage It: By management we can define this as doing something that will alter the dough strength in some way.

The Role of Pre-ferments: The number one accepted role of a pre-ferment is to introduce flavor into the finished product and close behind is its ability to mellow/soften/weaken??? the gluten structure of the dough for dough handling/processing or finished product enhancement (mostly in shape).

Pre-ferments be it in the form of a biga, poolish, going out on a limb a little bit, starter or sourdough, or a sponge all serve to allow the yeast to impact the flour proteins glutenin and gliadin either directly through exposure to protease enzymes or through the by-products of fermentation carbon dioxide, alcohol and acids (primarily acetic, lactic and propionic). The carbon dioxide can work to block oxidation of the sulphydryl (S-H) bonds on the protein resulting in strengthening of the dough. The Chorleywood bread making procedure (Great Britain) which utilizes dough mixing (Tweedy Mixer) under under a vacuum to capitalize on this concept. With a vacuum there is little or no oxygen to strengthen the gluten during mixing so the dough mixing time is significantly reduced resulting in an energy savings. Then there are the acids. These acids will degrade proteins with time eventually completely destroying them if given enough time to do so. The protease enzymes will act in a similar manner but are faster in their impact upon the proteins, in either case, if the proteins are completely hydrolyzed they are no longer proteins and do not function as a protein, hence the dough that has been exposed to fermentation too long will eventually lose its binding ability (from the gluten) and turn into something looking more like a syrup than a "dough". By incorporating fermentation of all or part of the flour into dough making/dough management procedure we can effectively modify the binding characteristics of the gluten to meet our specific needs, be it for dough handling or finished product characteristics.

For the most part, especially in pizza production we want to have the characteristics imparted by a high percentage of a characteristically strong strong gluten formation which allows us to open the dough balls by a number of different methods, especially by hand tossing/slapping procedures where we end up spinning the dough in an acrobatic fashion, for these characteristics we really don't want to break down the proteins, we just want to mellow (soften) them allowing for their greater extensibility in that form. The impact of fermentation upon any dough is largely influenced by the amount of proteins (gliadin and glutenin) present as well as their intrinsic strength characteristics which are present in the wheat and influenced by type and variety of the wheat, as well as growing conditions under which it was grown. Here in the U.S. and Canada our flour millers are blessed with pretty good quality wheat from which to choose from (though you might get an argument from time to time from them on that point) for making the flour that we use. This allows then to change the grist (wheat blend) used to make our flour and keep things pretty constant for us. This is an art as well as a science in itself. Other countries are not so fortunate so they have to use what

they have to make their flour, hence the flour quality is continually changing. At one time Mexico required that only Mexican grown wheat be used in making their flour, they don't have a wheat breeding program like we do so the expression "trigo es trigo" is most appropriate (wheat is wheat) with the end result being flour is just that "harina es harina" (flour is flour) was also appropriate. In other words you took pretty well what you got and made the best of it. This severely limited how the flour could be used and in what kinds of food applications. Today they import a lot of U.S. and Canadian wheat to blend with their domestic wheat and the quality has improved immensely, just ask any baker working for Pan Bimbo (the same baking company that now dominates the U.S. baking industry). The other side of the flour quality coin involves what to do with a flour that doesn't have the strength characteristics that we are looking for, the first answer is to add vital wheat gluten (VWG) which is effective but also expensive which is why we use it only as a last resort or sometimes it might be used for its convenience factor such as when we specialize in making deep-dish pizzas using a lower protein bread flour but we need to have a higher protein flour for our thin crust pizzas so we fortify the lower protein flour with VWG thus eliminating the need to inventory two different types of flour and all its associated costs and challenges. Goodie bags is another way of introducing VWG into doughs where flours of different protein level are needed (again a convenience factor). The other way to strengthen flour is to add some type of dough strengthener as an additive ingredient to the dough. This might include ingredients such as sodium-stearoyl lactylate (SSL) or diacetyl tartaric acids of monoglycerides (DATEM) or (TEMS). Both of these ingredients improve the protein response either very late in the dough handling process (proofing of the dough for a pan pizza) or by affording improved oven spring properties during the baking process. Neither will take a dough made with a very low protein flour and allow it to be easily tossed without difficulty or tearing so in that application these ingredients are limited in how they strengthen the dough. The other group of dough strengtheners are what we refer to as oxidation such as ascorbic acid (AA), azodicarbonamide (ADA), and potassium bromate (BROMATE) being the most widely encountered in the U.S. These oxidants work to oxidize/strengthen the S-H bonding links on the protein chain resulting in a rapid tightening of the dough (some oxidants are faster in this respect than others). The only problem with oxidants is that they are used at very low levels (measured in parts per million based on flour weight). For example, AA (60 to infinity (no top end limit but normally used at 60 to 200-ppm) ADA (10 to 20-ppm) and BROMATE (7 to 15-ppm). Bromate is the slowest acting of these so you might see some effect of it in doughs that are subjected to long periods of fermentation or shorter periods of higher temperature fermentation. Is BROMATE really needed today? No, it has always been referred to as a crutch, and at the present legal use levels there is not nearly as much benefit as there was in the past when the legal use level was 65-ppm. So why is BROMATE used on the label of high protein flours? Because its always been there and old habits can be hard to break but like I said, at the present use levels there is little if any real benefit to having it there from a functional standpoint. Other gluten modifying ingredients are known as reducing agents which include L-cysteine hydrochloride (the active ingredient in PZ-44), glutathione aka dead yeast and vegetable powders, primarily garlic and onion. These ingredients are all very fast acting (they act in the mixing bowl during mixing of the dough) and their function is to break the protein bonds at the S-H bonding points. This is important to know since these bonding points can be repaired through the use of oxidation, so, used correctly you can use a reducing agent to weaken the dough for a shorter mixing time and reduced processing (fermentation) time and then have the oxidant kick-in/react later in the dough making/management procedure to restrengthen it

again. Glutathione is referred to as the first cousin to L-cysteine, meaning that they are very similar in the way and speed at which they perform, the biggest difference is in the fact that you can call glutathione derived from yeast as "yeast" on a product label (important if a clean label is part of the product identity) whereas L-cysteine must be labeled as such. L-cysteine is a scary sounding name to many consumers but in reality both L-cysteine and glutathione are amino acids aka protein building blocks....it's all in the name. Deodorized vegetable powder is in the same boat as dead yeast, it's a reducing agent, capable of breaking down the glutenin and gliadin making a more extensible dough and it's consumer friendly. This is also why I don't usually recommend adding garlic powder and/or onion powder directly into the dough. If you want or need a softer, more extensible dough such as is the case where you might be pressing the dough to form your skins this is a viable option, but if it is not, you might be in for a surprise when you find your dough becoming softer and softer, It has, does and will continue to happen. What about protease enzymes as a way to manage dough strength? They too are very effective as reducing agents but they usually require some time for them to work, typically about 45 to 60-minutes before you see any effect, but when they do work the effect is non-reversible since they completely break-down the proteins, and they continue to work over a period of time until the proteolytic enzymes are destroyed during baking. This is one where you need a pretty good excuse for using it.

Lastly there is dough absorption. The absorption properties of the flour are first dictated by the inherent properties of the wheat from which the flour is milled. In some instances (outside of the U.S.) flour is milled to a much higher level of starch damage (3 to about 7% in the U.S. but what we are talking about is upwards of 18 to 20%), the damaged starch significantly increases the immediate absorption properties of the flour BUT those damaged starch particles are the first ones to be hydrolyzed into sugar by the amylase enzymes present in the yeast so we have a situation where the damaged starch allows for high absorption doughs but when subjected to much over about 45-minutes of fermentation time those starch particles are hydrolyzed into sugar and quickly release all the water they were carrying into the dough resulting in a dough consistency that more closely resembles a batter than a dough as we are used to seeing it. Been there, done that! What do you do in that case? Live with it, no magic ingredient to help in this case, or do as I do, seek out a different flour source if you can. This type of flour has been very common in Latin America but since Pan Bimbo and McDonalds have moved in there are now milling companies vying for their business and the good thing is that neither use or want a high starch damage flour so they are a potential flour source. Why is dough absorption all over the board when we look at different pizza doughs, you have to look at how the dough is managed to get insight into that question. Many hand mixed doughs and some machine mixed doughs employ the use of an autolyse (flour + water and allow to hydrate for a period of time) to effectively maximize the absorption properties of the flour. No other procedure allows you to really maximize the full absorption potential of a flour quite like an autolyse. Other processes, like a sponge-dough process may allow for more water to be added to the entire dough but it does not really allow for maximizing the flour's absorption potential. In the baking industry we say that dough mixing and absorption go hand in hand. A dough made with higher absorption will be softer, more fluid and not mix as well as a slightly firmer or stiffer dough while a dough that is made with less absorption will be stiffer and receive more mixing action allowing it to develop the gluten faster. If flour is made from wheat that incorporates all of these variables into the flour (remember flour will be the most variable ingredient that you put into your dough) why don't we see a significant

difference in dough absorption? The answer is because most of us rarely work to maximize the absorption of the flour (remember this is accomplished by use of an autolyse), so we are working with significantly less water/dough absorption than what the flour might allow for BUT we all know that machine mixing the dough has a softening or mellowing effect upon the forming gluten structure and with all the water present that the flour can hold (or at least close to it) an overly soft and sticky dough condition is hard to prevent (no need to worry about hand mixing/kneading as the gluten development is so gentle, plus we are continuing to work in additional flour as we work the dough on the bench top).

As you can see, there are many options when it comes to managing dough strength (trust me, I did not cover them all) and when it comes to using pre-ferments we introduce a whole new set of variables into the equation of dough strength. As for dough absorption, you either have to allow sufficient time for the flour proteins to fully hydrate (autolyse) or you can mechanically open the proteins to accept more water using a dough mixer but due to the interaction of mixing and dough softening due to increased absorption it is all but impossible to fully maximize the potential flour absorption properties.

Gluten/dough strength is really quite complex considering all of the variables and mitigating factors which is the main reason why so many people don't have a good understanding of it. It took me YEARS of bench work and years of working with some of the best protein chemists in the world (Kulp, Tsen, Klaus, Ponte, and Dempster) to gain even a rudimentary understanding of the topic.

Sorry to be so long winded Mitch, but you did ask :)

Dough Clinic / Re: Factors Affecting Gluten

Billy;

I think with more crust porosity aka open cell structure, you will find that you will get a better bake, the gum line will go away and you will get a crispier finished crust. Do experiment with the baking time as suggested. My feeling has always been that the pizza is done when the bottom of the crust is done. If it ain't, you need to be looking at your dough formulation (which I think is OK in your case) or the way your pizza is being baked.

Dough Clinic / Re: Here's my recipe. Why is it not crispy?

As a bystander, let me add this to the discussion above.

Flour enrichment is the addition of vitamins and minerals to the flour in a quantity to replace that which was lost through the milling process in making white flour.

Fortification of flour is the addition of VWG to a flour to improve the gluten forming properties of that flour.

There are two main aspects to "gluten" quality and quantity. Most of the time these are just applied to the flour protein since flour protein is generally referenced to gluten content of the flour. It is entirely possible to have two different wheat varieties or classes with the same protein content and gluten content (balance of gliadin and glutenin) but with entirely different performance characteristics, such as fermentation tolerance, mixing tolerance, absorption properties, elasticity, and extensibility. As such, these characteristics are intrinsic with the wheat from which a flour is made. The flour that we work with every day is made from a blend of wheat having at least some of these individual characteristics with the function of the miller in blending the wheat to balance out these characteristics to provide a flour with consistent and known properties (this is why so many of us describe flour milling as both an art and a science).

The method of dough management and the parameters of the dough management

procedure are designed to address any of these unique characteristics to give us a finished dough suitable for its intended purpose be it pizza, bread, cookies or pastry. For example, if we have a lower protein bread flour we may find it advantageous to limit the amount of fermentation if we want to have a finished dough with suitable strength characteristics, and if we have an excessively strong flour which is characterized by overly elastic properties this can be addressed through additional fermentation (more yeast, longer cold fermentation time, finished dough temperature, fermentation temperature are the main ways these are accomplished).

If you have a weak flour and add several percent VWG to it you will need to add additional water to compensate for the hydration properties of the VWG and you may also find that the dough does not need as long of a mixing time as a dough made with a high protein flour does, the reason for this is because the VWG is already fully developed. We can see this using the Farinograph where a double peak is clearly seen, the first peak corresponds to the hydration of the VWG and the second peak corresponds to the development of the native proteins into gluten. We used to make dough at the PMQ Pizza Shows for the acrobatic competition, the formula consisted only of flour (ideally All Trumps), water, a double dose of salt, and just a little oil to allow the dough to stretch without tearing, we then mixed the dough until it had the desired balance of extensibility and elasticity. The dough could be used right away or it could be balled and refrigerated for use on the following day BUT it had to be allowed to warm to room temperature before it could be used or it would be too stiff to open.

Dough Clinic / Re: Factors Affecting Gluten

Your yeast calculates out at only 0.08% in bakers percentage. This is not sufficient to provide the fermentation needed to properly condition the dough for pressing. This is why the dough exhibits "memory" and snaps back/shrinks after the first press. When properly conditioned the dough should only need to be pressed once. To correct this I would suggest increasing the yeast (assuming you're using IDY (instant dry yeast) to 0.4% or 41-grams based on your 10.2-kg of flour weight. Additionally, you should leave the dough set at room temperature after removing it from the cooler until the dough balls reach an internal temperature of 10C. This is especially important when forming the dough skins using a hot press as you are doing as the warmer dough temperature allows for much improved pressing properties. I believe if you look in the "RESOURCES" at the top of the page you will find a copy of my Dough Management Procedure which I believe you have modeled your procedure after. If you cannot find the procedure please e-mail me at <thedoughdoctor@hotmail.com> and I'll send you a copy.

The insufficient yeast level and double pressing of the skin are what I believe to be mostly responsible for the problems you are experiencing but information on your baking time will also be helpful.

Dough Clinic / Re: Here's my recipe. Why is it not crispy?

Poniel;

Yep, you got it right!

By the way, be sure the coupe pan is well seasoned or better yet that it has a dark/black anodized finish. Walmart used to sell a similar pan BUT it was dark on the inside and silver on the outside???? Makes no sense at all! Just pick one up and season the outside of the pan using corn oil until it has an amber color (it will continue to darken with use) and you're good to go. If you are not familiar with

seasoning a pan go into the archives here as there have been a number of excellent posts/discussions on the topic.

General Pizza Making / Re: Need help to identify a pizza style from just photos and description

Just my two cents worth. Burning wood creates a different heat than say electric due to the amount of moisture released during the burning of the wood. This is why we see a difference in baking properties between electric and wood or gas (gas is similar to wood in this respect). My personal take, you have a beautiful oven there, you have a significant investment, I'd be following the manufacturer's directions for proper curing of the oven as a means of protecting both, it might take you a month or more to do this BUT you will get a lifetime of use and enjoyment from it.

Remember the old adage: "Good things come to those who wait".

Hearth Ovens / Re: some questions about curing my new WFO

The crust appears to have a thickness of about 1/2-inch, the shape of the edge suggests that it might have been baked in a coupe pan and the slightly oily bottom is an indication that the pan was oiled as opposed to greased with a plastic fat. We used to make this type of pizza in our pizza class and we referred to it as a "thick" crust pizza, not to be confused with a pan style pizza which is thicker. I stand to be corrected on this but I think Straw Hat used to have this type of pizza on their menu at one time.

A starting point for the dough formulation might be this:

Flour (bread type): 100%

Salt: 2%

Sugar: 2%

IDY: 0.5%

Olive oil: 3%

Water (70F): 56%/variable

Follow your preferred mixing method but use the delayed oil addition procedure if machine mixing.

Immediately divide the dough into 14-ounce pieces for 12-inch pizzas.

Form the dough pieces into balls, lightly oil and drop into individual plastic bags, do not use Zip Lock bags, twist the open end of the bag into a pony tail and tuck it under the dough ball as you place it into the fridge to ferment for 24 to 48-hours.

Turn the dough ball out of the bag onto a floured surface and gently pat and stretch out "open" to about 12-inches in diameter.

Place the skin into the oiled coupe pan, cover and allow the dough to rise for at least 30-minutes (you will need to experiment to find the time that gives you the desired height/thickness), dress the skin and bake on a center rack position (home oven) at 450F for 15 to 20-minutes. Check the bottom of the pizza, when it's brown the pizza is done. Note: You will need to spin the pizza in the oven once or twice during the baking cycle to ensure an even bake.

General Pizza Making / Re: Need help to identify a pizza style from just photos and description

I also do an apple dessert pizza, somewhat similar to what you are doing but I make a cheese custard that goes on first. I soak the apples in lemon juice (skin on), while the apples are soaking I brush a skin with melted butter then add a liberal amount of cinnamon and a sprinkling of sugar, then I apply a layer of the cheese custard followed by the apple slices, to top the pizzas I either apply a streusel topping or just sprinkle generously with raw sugar.

When finished wit raw sugar the pizzas are served "as is" either hot or cold but when topped with the streusel I always finish the pizza after about 5-minutes of cooling with a generous drizzle of powdered sugar icing. To make the cheese custard I blend 16-ounces of cream cheese and 8-ounces of powdered sugar until smooth, then add 2-whole eggs and mix smooth, then 16-ounces of sour cream and 16-ounces of ricotta cheese and blend until smooth. If the mixture needs to be thinned for better spreading viscosity add a little cream until I get a good, spreadable consistency. Unused custard will keep for up to a week in the refrigerator. Note: Half size batches are better sized for home use. Spread the cheese custard over the prepared skin about 3/16-inch thick keeping it about 1/2 -inch away from the edge. In addition to apples I also use banana, berries, peaches, mango, kiwi, grapes, dates (date season in California) and even occasionally toss on a few chopped pecans.

Dessert Pizza / Re: our dessert pizza experiments

I bake my pan pizzas at 450F in a center rack position in our home oven (electric) while I bake my thin crust pizzas at 550F on a pizza stone in the same rack position. Just be sure to allow the better part of an hour for the stone to heat up properly.

I've also got a pretty decent home made pizza dough "recipe" posted in the PMQ Recipe Bank at <www.pmq.com>. This dough "recipe" does not require kneading to develop the gluten, but instead it uses biochemical gluten development. This is the same recipe that I was using when I was training local farm wives in mastering the making of great pizza without developing arms like the village blacksmith.

General Pizza Making / Re: Pizza at home methods-

Those are the "wet" gluten weights. I'd have to look up the conversion from wet to dry gluten weight, if anyone has that information please jump right in.

Newbie Topics / Re: some question

For anyone who might be "math challenged" all I can say is "NOW THAT'S A TOOL"!

Thank you Peter!

New York Style / Re: Thickness Factor (TF), what is it?

Peter;

Taking that to the next level:

If you know the TF was can now calculate the amount of dough needed to make any number of skins/pizzas at that TF.

Example:

Let's say I want to make 75 pizzas, each 12-inches in diameter, using a TF of 0.085
0.085 X 113 (number of square inches in a 12" diameter circle) = 9.605-ounces of
dough will be needed to make each skin/pizza.

75 (number of pizzas to be made) X 9.605-ounces = 720.375-ounces of dough
needed. Or 720.375 divided by 16 (ounces in a pound) = 45.023-pounds of dough
needed.

Divide the amount of dough needed (45.023-pounds) by the sum of the bakers percent (164.25) after dividing it by 100 (1.6425)

45.023 divided by 1.6425 = 27.411-pounds of flour will be needed.

Then use bakers percent or the calculator to find the weight of each ingredient to make a dough based on 45.023-pounds of flour weight.

P

Peter;

Is it possible to extend the calculator out so anyone can enter the TF, the diameter/size of the pizza(s) wanted and the number of pizzas wanted and the calculator will solve for the flour weight needed, then if the formula is entered you can get the complete formula in both bakers percent as well as weight measures for the amount of dough entered above?

Just a thought.

New York Style / Re: Thickness Factor (TF), what is it?

Parallei;

In your example, DW should be total bakers% since you are adding up the bakers percentages.

Flour weight is (total of all dough ingredient weights) divided by the sum of the bakers percent after dividing it by 100.

Ingredient weight is: Ingredient percent X flour weight (press the "%" key) read the ingredient weight in the same weight units as the flour is expressed in.

New York Style / Re: Thickness Factor (TF), what is it?

Werty20;

Oops! Typo, that should read (Sugar: 2%).

Good catch! Thanks for bringing that to my attention.

If the yeast is IDY (instant dry yeast), yes, it can be put into the flour if you are machine mixing the dough, if you are hand mixing the dough without a mixing machine it is best to suspend the yeast in a small amount of warm (35C) water before adding it. In that case you should add the yeast suspension to the water in the bowl before you add the water.

Newbie Topics / Re: some question

PizzaPap;

You have brought up an interesting point that I had not before considered, that is using T.F./dough loading as a tool to figure out how much dough will be needed.

T.F./dough loading = 0.085, we want to make a 12" round pizza. So, $0.085 \times 113 = 9.605$ -ounces so if you want to make two pizzas, as most of us do, $2 \times 9.605 = 19.21$ -ounces of dough will be needed to make our two pizzas.

Here is where it gets interesting: Let's round that up to 21-ounces to account for normal dough loss. If you add up your total bakers percent:

Example: Flour: 100%, Salt:2%; IDY: 0.25%; Oil:2%; Water: 60%.

The total/sum is : 164.25%

Divide that by 100: 164.25 divided by 100 = 1.6425 (just move the decimal point two places to the left).

Now divide your dough weight (21-ounces) by 1.6425 = 12.785-ounces (this is the amount of flour that you will need to make your dough). If you're scaling ingredients in grams multiply $12.785 \times 28.4 = 363$ -grams of flour.

Now that you know the flour weight you can easily calculate the other ingredient weights using bakers percent. (ingredient % X flour weight then press the "%" key and read the ingredient weight in the display window of your calculator). The ingredient weight will be in the same weight measure that the flour weight was shown in.

Just another way to use bakers percent.

New York Style / Re: Thickness Factor (TF), what is it?

Werty20;

I'm somewhat familiar with your flour situation. The "bread flour" option which you have is typically the all -purpose flour to which is added vital wheat gluten (VWG)

to bring the protein content of the flour up to approximately 11%. If you can get VWG add 3% to the flour and blend it in by just stirring it into the dry flour for a couple seconds. If you can't find VWG you can still make good pizza using your bread flour option.

My advice is to start out making a very basic dough using 100% bread flour, 2% salt, sugar 2%, 2%, 0.15% IDY, and 55% water (23C).

Procedure:

Put water in mixing bowl, add salt and sugar, then add the flour and stir to make a thick, sticky paste. Scrape the dough out of the bowl onto a floured surface and knead/fold the dough for several minutes and form the dough into a ball. Oil a suitably sized bowl, oil the dough ball and place it into the oiled bowl. Drape a piece of plastic over the bowl to prevent drying. Allow the dough to ferment for 3-hours then turn it out of the bowl and fold it a couple of times, form back into a ball shape, lightly oil the dough ball and the bowl again and place the dough back into the bowl to continue fermenting for 3 more hours. Turn the dough out of the bowl handling as little as possible, and open the dough into a pizza skin, then dress the skin and bake as you normally do. As Craig said, if the dough feels too firm or dry add more water in 1 or 2% increments to following doughs. When you have an acceptable pizza by this method (this will confirm that your dough management, formulation, flour and ingredients are correct for your application) you can begin to experiment with the dough formulation by introducing a starter or biga. I would suggest that you start low (maybe 5%) and increase the amount in 5% increments. Remember to take into account the amount of water in the starter or biga when calculating the total dough absorption.

Newbie Topics / Re: some question

I'm on record as stating that one should first determine the amount of dough needed to make their pizza (pick a size, any size for testing) then use T.F. aka "density loading" to calculate the amount of dough, sauce and cheese to be used when making different size pizzas from the SAME dough. It's a "tool" nothing more, nothing less. Is it exact? No, but it will get you close enough to fine tune from there, it sure beats trial and error or SWAG.

Reminds me of when our boys were young and we would occasionally go to Pizza Hut for their pan pizza, this was back when they used fresh dough and proofed the dough in the pan right at the restaurant. We would always order a 16" large size but once we discovered that they would almost always run out of the large size pan pizzas by 7:00 p.m. and substitute two 12" pan pizzas for the same price we never again showed up before 7:15 p. m. reasoning being: One 16" pizza = approximately 201 square inches of pizza. Two 12" pizzas = $113 + 113 = 216$ -square inches of pizza. $216 - 201 = 15$. $15 \text{ divided by } 201 \times 100 = 7.46\%$ more pizza = a better deal for us. :)

New York Style / Re: Thickness Factor (TF), what is it?

Sam;

Additionally, you might want to post your questions in the Think Tank at <www.pmq.com>. George Mills is a regular follower of posts in the Think Tank and I know he does a lot of work in both equipment and design.

Shop Talk / Re: Location and menu design

After you know things are going well with your pizza, begin cutting pieces off of the other dough piece and roll out under your hands to form a "hot dog", place onto a lightly greased pan and brush with melted butter, when the pizza is ready to be served put the (bread sticks) in the oven to bake for about 8 to 10-minutes, when

they come out of the oven brush with melted butter once again and sprinkle with cinnamon, serve with a dipping icing (powdered sugar, water and a couple drops of vanilla) for a simple dessert, save the cheese cake for later with a good cup of coffee.

General Pizza Making / Re: Backup dough on the side or just for one bake ?

Agreed, your dough is very lacking in fermentation to develop the type of crust flavor that you are looking for. As Steve indicated in his response, if your yeast is compressed yeast aka wet yeast aka fresh yeast a good level to begin working with is 1% (3-grams). At this lower yeast level you will be able to allow the dough to ferment longer to develop flavor. An easy way to do this is to use 75F water when making your dough, after mixing scale the dough into desired weight pieces and form into balls, lightly oil each dough ball and place into plastic container or as I do, place them into individual plastic "food bags", twist the open end into a pony tail and tuck it under the dough ball as you place it in the fridge. After at least 24-hours in the fridge remove the dough balls, and allow them to warm to about 50 to 55F, then turn the dough ball out of the bag into a bowl of flour and begin opening the ball into a skin.

I would suggest that you experiment with allowing the dough balls to cold ferment in this manner for varying periods of time such as 1 to 5-days to see which time period gives the best results in making your pizza and also gives the improved flavor profile that you are looking for.

Dough Clinic / Re: Better Tasting Dough

In our house you're going to have to be faster than three seconds if you're going to get it before the dog, even if we should beat him to it it still ends up in his food dish. Too many years training in food safety.

Chitchat / Re: Food on Floor: Five Second Rule

Aside from New York pizzerias there are an awful lot of pizzerias today that are faced with high rent costs, ever increasing ingredient and labor costs, not to mention overhead. For all of those thousands of pizzerias they need to keep a close watch on their food costs (it's one of the few things that they can actually control) and they do this by weighing ingredients, weighing dough and using such things as dough loading to calculate their dough, cheese and sauce amounts for the various size pizzas that they make. It wasn't too long ago that it was common to see a pizzeria use maybe 10-ounces of dough, 5-ounces of sauce and 6-ounces of cheese for a 12-inch pizza (just as an example) but then when going to a 14-inch pizza and using 15 or 16-ounces of dough, 8-ounces of sauce and 10-ounces of cheese. The problem was that the 14-inch pizza is only 41% larger than a 12-inch pizza but the dough weight was more than 50% greater, the sauce was 60% more and the cheese was 66, almost 67% more. In view of the number of pizzas being sold each month these differences would easily amount to a difference of about \$500.00 a month in either saved or lost revenue. I well remember working with only a cash drawer, no cash register or POS. At the end of the week I only had to make enough money to pay the bills, but that isn't the case anymore. You almost need an accountant to just to track your expenses, so you add his/her cost to your expenses too, and in the end you're fighting to make both ends of the string come together, so yes, math is/has become a much greater part of being in business than it has in the past, and from what I see every day those independent pizzerias are doing everything possible to make the best quality pizzas possible for their customers, if they don't.....someone else will.

New York Style / Re: Thickness Factor (TF), what is it?

I forgot to add, to find the "thickness factor" aka "dough loading" simply divide the dough weight used to make the pizza by the surface area of the pizza that you made. Yes, the pizza does shrink a bit during baking so the factor is not 100% but then again, we're making pizza dough, not nitroglycerine (thank God!).

New York Style / Re: Thickness Factor (TF), what is it?

The term "thickness factor" appears to have been coined here but I really don't like using it, though I know that a lot of people do. Instead, I use the term that we coined at AIB which is "dough loading", said in another way it is ounces of dough per square inch of surface area. For example, if you are making a 12" round pizza a typical dough loading (many just call it "factor" of 0.07 to 0.08 is about right for a thin crust. Translated: 0.07 to 0.08-ounces of dough per square inch of surface area, or $0.07 \times 113 = 7.91$ to 9.04-ounces of dough. The thing about using a dough loading factor is that you can use it to calculate the dough weight needed for any size pizza. For example, a 14" round pizza has approximately 154-square inches of surface area so $0.07 \times 154 = 10.78$ -ounces of dough to provide a larger size pizza, using the same dough should provide about the same final dough thickness.

Perhaps this is where "thickness factor" came from. We also use "dough loading" to calculate the amount of cheese and sauce to use when making a different size pizza. This is important in a commercial setting where we want to offer the same pizza in different sizes, additionally with the use of air impingement/conveyor ovens this also helps to provide the same bake to all of the different size pizzas as these ovens actually bake by dough loading, or weight of product per square inch going through the oven. If you wanted to, you could bake an endless ribbon of pizza through one of these ovens and as long as you maintained the same dough loading across the entire ribbon width and length the entire baked ribbon would be essentially the same at any point. For many years this has been a critical aspect in baking cookies and crackers in commercial tunnel ovens where the ovens are so finely tuned that if you get a part of the ribbon too thick it will not bake properly and if it is too thin it will either over bake or develop too much crust color. We now use infrared measuring devices to measure the dough thickness from a fixed position, in this case a thicker dough equals heavier dough weight (higher dough loading) and a thinner dough equals less dough or a lower dough loading.

New York Style / Re: Thickness Factor (TF), what is it?

I've tried them all and worked with others trying to teach our students how to open the dough balls into skins and it always boiled down to "this is how you do it, now go and practice until you've mastered it". Knowing that this wouldn't work in a situation where we had a student that was only going to be with us for a few days I developed the method of using the dough sheeter/roller to open the dough to only about 75% of final diameter and then opening it the rest of the way by hand. This worked extremely well for use as we found that we could have a total novice opening the dough in less than 30-minutes....and making good pizzas. This is the procedure that I taught at AJ's New York Pizzeria here in Manhattan, Kansas and they still use it 8-years later because it works so well, by the way, they just got their third award in four years (best pizza in Manhattan, Kansas), (best pizza by Kansas State University), and just last week one of the three best pizzas in Topeka, Kansas). In Topeka they only select the 3 best pizzas without distinguishing any order. When executed properly the dough opens with a very uniform center thickness and a light raised edge. Crust porosity and crispiness are the trade marks of an AJ's pizza. The procedure is also being used in other commercial applications too. Each of the forming methods sheeting, hot pressing, cold pressing

and hand forming gives the crust a different and unique finished crust characteristic, this is why the different forming methods are not interchangeable but when you take a dough ball and open it to only 75% of full diameter and then finish opening it by hand it is indistinguishable from a crust that was opened totally by hand. I have a video of the pizza dough being opened by a college student at AJ's using this procedure.

Dough Clinic / Re: Saucing help..or maybe it's the dough

Martin;

I just saw your posting and I see that you are from Montreal, Canada. What you are looking for is the equivalent of the DiGiorno/Delicio pizza crust.

Which utilizes a combination of both yeast and chemical leavening. We have a ready made product here in the U.S. called "Wrise" <www.thewrightgroup.net> that is a fat encapsulated blend of soda and sodium aluminum phosphate (SALP), that's the good news, the bad news is that the SALP may not be allowed for use (or sale) in Canada. You can easily confirm this by looking at the ingredient declaration on a Delicio Pizza at your local supermarket to see if it appears on the label (it will appear towards the very end of the ingredient declaration). If it's there you can use it, just contact The Wright Group at the above address and request a sample or buy a bag, it's pretty cheap and it lasts forever if properly cared for. If it is NOT allowed check to see if they have a counter part for use in Canada (typically these are made with soda and calcium acid pyrophosphate (CAPP). To use the Wrise product, store it in the cooler/fridge and add it about 4-minutes before the mixing cycle is completed, then process your dough in the normal manner. A good starting level for Wrise is 2% of the total flour weight.

If you don't want to go this route you might try this to see if it will work for you (works only for the thicker crusts, NOT THIN CRUSTS). Increase the yeast level in the dough to 1% IDY, mix, scale and ball, cold ferment NOT more than 24-hours, temper dough to 50F, open into a skin, proof at room temperature 30 to 60-minutes depending upon the thickness you want, dress the proofed skin and place into the freezer, after the dough is completely frozen (about 3-hours, wrap in shrink wrap for storage). To use, remove shrink wrap, place on baking pan and bake in a pre-heated oven at 425F. If necessary adjust the sugar level in your dough formula to achieve the desired crust color. NOTE: Lightly blanched vegetable toppings tend to work better in this application than raw, but if you do use raw vegetable toppings be sure to slice them thin, ALL meat toppings need to be fully cooked. If this process/pizza looks familiar it is because it is modeled after the Freschetta brand (Schwan's) pizza. The key to the Freschetta pizza is in blast freezing the fully proofed, dressed dough but with a bit of care and shorter shelf life expectations (7 to 10-days) it can be done at home too.

Dough Clinic / Re: Hello from Montreal Canada

Opening of the dough ball into a skin with a fairly uniform thickness across its dimension is by far the most difficult and problem-some part of making thin crust pizza, and the thinner the dough gets the more difficult it becomes. The dough must be soft, extensible and yet possess enough strength to resist tearing or just limply stretching into infinity. This means the first order of the day is to have/develop a dough with these properties and then starting out using a heavier dough weight (0.08 to 0.09) and working with that until you can master your opening technique after that your next objective should be to begin reducing the dough weight gradually (remember that your technique might need to be modified slightly as you reduce the dough weight), as you master each reduction in dough

weight drop down again and repeat until you either reach the dough weight/thickness you are looking for or you can no longer open the dough with a uniform thickness or other without other issues.

One thing that I've mentioned a number of time here is the use of a rolling pin/pie pin/pastry pin to partially open the dough ball to about 75% of the desired diameter and then finish opening the dough by hand after that. I've found that this greatly reduces the learning curve for someone just learning how to open a dough ball and it gives a much more uniform dough thickness in the finished dough skin. You will probably find that if you use this method you will soon gravitate to opening the dough entirely by hand as you develop the dough opening skills.

Dough Clinic / Re: Saucing help..or maybe it's the dough

Mitch;

The airflow is a contributing factor in that the fan provides for more air to flow over the product but IF the air is sufficiently cold and can't carry any more moisture (it's at its saturation point) the airflow will have no impact upon drying, BUT when we open the fridge and replace the cold air with warm air that fan is now moving the warm air over our product at a greater rate so the drying process progresses faster. This is the same principal used by a hair dryer aka blow dryer.

New York Style / Re: Yup, humidity levels do affect pizza

Wholehog;

You should also remember that due to its larger particle size semolina flour is slower to hydrate than your regular strong bread flour, so if your dough feels normal after mixing it will most likely be under absorbed when the semolina flour hydrates about 30-minutes after mixing. You might try making a soaker out of the semolina flour and the water as the first step in your dough making process. Just lightly combine the semolina flour and water in the mixing bowl (you can use all of the water) and allow this to hydrate undisturbed for 30-minutes to an hour, time is not critical as long as it hydrates for at least 30-minutes. Then add the bread flour and the remaining dough ingredients and mix the dough as you normally do. If it feels too dry or too stiff you can now add more water as needed.

Dough Clinic / Re: need some assistance please

I like to save the "good stuff" for use as a dipping oil with a little balsamic vinegar, or for use in my salad dressing. I do like to use EVO once in a while to drizzle on top of a pizza when it first comes out of the oven, but in the dough I always use pomace olive oil, the flavor is stronger (more robust) and that's a good thing to have in the dough.

Dough Clinic / Re: why not use virgin olive oil

Mitch;

Are you sitting down for this? The fridge really doesn't have all that much of a drying effect upon foods that we put into it (uncovered). The physics: Cold air holds less moisture than warm air so the moisture of the food cannot transfer as readily to the air as it can to warm air. So why do things seem to dry out in the fridge??? Every time we open the fridge door the cold air (being heavier than warm air) flows out and is replaced by....you guessed it....warm air which has the capacity to hold more moisture than cold air, the warm air becomes saturated and it's time for another cold beer so we go to the fridge and open the door again.....repeat above process, what we now have is a rudimentary form of freeze drying. This is also why we get frost build up in the freezer and freezer burn in packaged goods with any amount of free head space in the packaging. Just look under the top flap of the

carton of ice cream in your freezer, see the ice crystals, they came from the ice cream. During the defrost cycle the air in the freezer warmed which in turn warmed the packaging which warmed the air in the package (head space), now the defrost cycle ends and the air cools which cools the packaging and as the air in the package cools it loses its ability to hold moisture so the moisture condenses against the packaging and freezes there, repeat and the ice continues to build up.

Remember, we're talking physics here so while the ice cubes aren't melting there is a change in temperature of only a fraction of 1F and that is all that is needed, then add the fact that your new, 5-star energy efficient fridge may defrost as many as 12 to 24 times in a 24-period and you have a ready made freeze drier, and if you have kids regularly taking the inventory of the fridge or freezer that just adds to it.

So, getting back to things drying out in the fridge, yes they do, and now you know why, or like the guy on the radio used to say "Now you know the rest of the story".

New York Style / Re: Yup, humidity levels do affect pizza

Mitch;

You're absolutely correct, humidity has very little impact. The temperature of the air during mixing can/will impact the finished dough temperature, this is why room temperature is one of the factors used in calculating desired finished dough temperature. It is also why modern bakeries use a fermentation shelf as opposed to a fermentation room like they used to use (they are also a lot easier to maintain over time too, but that's a different story, the actual air temperature has little impact upon the dough once it is mixed due to its bulk/latent heat and continued warming due to heat of metabolism, not to mention small surface area as compared to the size of the dough. Even when putting dough balls into the cooler/fridge it can easily take several hours to reduce the temperature of the dough ball 20 to 30F. In that case airflow and temperature have the greatest impact upon lowering the dough temperature due to the greater surface area to weight ratio, but still humidity has little impact. In most cases it isn't even taken into account when calculating cooling/freezing time for the dough.

Who ever said that dough was easy to understand? It's a complex mix of science, biology, and physics and to that you can also add the science of flow dynamics.

New York Style / Re: Yup, humidity levels do affect pizza

Actually, air conditioning cools the air by removing moisture from it, just look at the condensate drain for all the water flowing from it. And then there is the question of actual dough temperature, do you keep track of your finished dough temperature? In many cities the summer time water temperature is considerably higher (5F is significant) than during the cooler seasons of the year, this might explain why the dough tended to brown faster (cooler/lower dough temperature = reduced fermentation rate = more sugar left for participation in the browning reaction and with less fermentation there would be less acid formation to block the browning reaction).

You're right about large wholesale bakeries using humidified final proofers in which to proof their dough in, but it isn't for the reason cited, it is for two basic reasons. One is to provide a consistently soft dough with known expansion properties which allows the dough to proof/rise at a controlled rate which is only possible when there is no skin or crust formation on the dough, failure to have this humidity (86% R.H.) can result in cracking or tearing of the dough during the proofing phase. The second reason for the humidity is to provide some moisture on the surface of the dough as it transfers from the final proofer to the oven. Bakeries are hot places to work (this is why we find it difficult to recruit new people into the baking industry) often exceeding 85F in the cooler places and 100F when you're

close to an oven or near to where the bread is exiting the oven. To make life more bearable we have air handlers installed throughout the bakery to provide air circulation but when you have air circulation and heated air you are drying anything that air contacts very fast so when the bread is making that transfer from proofer to oven (measured in seconds) it will dry the top of the proofed dough to the point where it will not expand (oven spring) as desired during baking resulting in loaves that are too small, mis-shapen, or worse yet develop a torn break and shred which will cut the bread bag like a razor blade as it is being automatically bagged. I've mentioned this before but in essentially all bakeries today the fermentation room (temperature/humidity room where the dough is bulk fermented) no longer exists, instead, they use what is referred to as a "fermentation shelf", this is a large stainless steel sheet that is in a fixed position about 3-inches above the top of the dough troughs (wheeled steel tubs holding 800 to more than 1500-hundred pounds of dough or sponge), the troughs are placed under the shelf which keeps and drafts off of the dough and allows for the development of a head of carbon dioxide gas (it's heavier than air) to form and remain over the fermenting dough thus further preventing it from drying out due to the low relative humidity in the ambient air within the bakery. Wholesale bakeries are pretty neat places to work and I would encourage anyone wanting to get a real feel for dough to work in one.....we need all the recruitment we can get. How bad is the recruitment issue? The last project that I was working on was with a team to develop the worlds first FULLY AUTOMATED bakery, and I do mean "fully automated" we were developing the instrumentation for measuring properties of the flour which would allow for instant (real time) determination of dough absorption and mixing time and make processing adjustments as needed, it would also use infrared technology to confirm the presence of each dough ingredient. We developed the ability to scan a flour sample (both white and whole-wheat) and accurately give you the correct mixing time for any kind of dough in approximately 15-seconds. I could write a book on the process but this will give you an idea of how sophisticated and controlled bakeries are today and where they are going with new technologies.

New York Style / Re: Yup, humidity levels do affect pizza

Rob:

We also dry/dehydrate a bunch of the cherry tomatoes every year too, (they are like candy). When we do anything larger we cut into quarters (top to bottom) and slice into 1/4-inch thick pieces then dehydrate to a point where they are still soft before bagging and freezing. Don't forget those last tomatoes that are too green to ripen are great when sliced 1/2-inch thick, dipped in egg and floured, then fried golden brown (we use a fry pan), sprinkle with grated Parmesan cheese immediately upon removing from the frying pan and serve. I like mine with a side of ketchup. Fried green tomatoes!

Sauce Ingredients / Re: Homegrown tomatoes and frozen sauce question

Was the entire crust stuck to the pan or just the bottom or sides? Can you provide any pictures of the crust, or what's left of it, especially the bottom and sides? This might help in determining what might have gone wrong. In the meantime I'd suggest trying it again but this time use Crisco, butter or margarine rather than oil in the pan and let us know if it releases any better. Oil can be absorbed into the dough over time resulting in compromised release properties. We used to see this quite frequently in bread production. The solution was to use what is referred to as a liquid shortening (think of it as a thick, just barely pour-able shortening which when heated a little can be sprayed into the pans but upon contact with the cooler pan re-solidifies as a shortening which doesn't absorb into the dough).

Newbie Topics / Re: Welded to a pan. Advice please

Just to pour a little gas on the fire, in the summer months when the weather is hot and humid we have our air conditioning running full blast to keep us cool and reduce the humidity in the air for comfort, then when the cooler months come upon us the air conditioning is either reduced or turned off so there is a period for most of us where the temperature and humidity in the fall are about the same as they were in the summer with the air conditioning (those are those beautiful fall days we all love so much). The low humidity really doesn't enter into the picture until the air temperature drops to a point where we now need to turn the heating side of our furnace on, so now we are heating the lower humidity air further driving the R.H. (relative humidity) down. This is why we get dry skin and the wood joints in our furniture begin to creak and loosen during the winter months. If your furnace was not heating your home at the time I'm guessing that what you might have been experiencing was due to a difference in dough temperature (cooler) which would impact both the rate of fermentation as well as the way the dough feels at the end of the fermentation process (6-hours at ambient room temperature).

New York Style / Re: Yup, humidity levels do affect pizza

For a thickness factor of 0.07 you would have a dough weight of 8-ounces for a 12-inch diameter skin. Normally when we see a lot of wrinkling especially towards the center of the skin the problem is related to dough memory/snap-back but if the problem is seen over the entire skin the problem is just the opposite, dough that is too relaxed or weak. I'm guessing that this more closely fits into your description. Between the bulk fermentation and the freezing of the dough you might be getting a dough that is simply too weak. You open the dough to a size a little larger than what you want and then fit it onto the peel and by carefully lifting the edges you shrink the dough skin back to the desired diameter or something close to it. The outer edge comes in but the center doesn't which results in the wrinkling you describe. This makes saucing the dough extremely difficult and can even result in tearing of the dough, but the real problem is in the fact that the center of the skin didn't shrink as planned so it is really made with a thickness factor somewhat less than what you think you have. This is not as much of a problem when working with a higher thickness factor but when you are working at or close to the minimum thickness you really end up with a center section that is too thin and the moisture from the sauce immediately penetrates the dough making it sticky on the peel. Some times a VERY THIN coating of oil on the skin prior to application of the sauce can help as can using fine corn meal for your peel dust but even then we find that the dough is just too thin and weak to withstand the stretching required to transfer off of the peel so the dough tears making transfer impossible or if it does transfer with a tear it can weld itself to the oven hearth/deck with obvious results. My suggestion is to try the oil approach combined with the fine corn meal on the peel, if that doesn't work you have two options as I see it, one is to begin reducing the amount of fermentation that the dough is exposed to or increase the thickness factor to something closer to 0.08 which figures out to 10-ounces of dough for a 12" diameter skin. If problems still exist at 0.08 TF I would really begin to look at dough strength as the culprit and begin reducing the amount of dough fermentation.

Dough Clinic / Re: Saucing help..or maybe it's the dough

We just scald ours to help remove the skin and then freeze just as they are, later we thaw and manually tear apart and place in a colander to drain off any surplus liquid and then use in building my sauce. We also dry a lot of our tomatoes then

bag and freeze for use as dried (like in sun dried) tomatoes. They are great in soups, chili, and roasts during those long, cold winter months. I'm not averse to soaking a few of them in olive oil over night in the fridge for use on my pizzas the following day, not bad in salads this way either.

Sauce Ingredients / Re: Homegrown tomatoes and frozen sauce question

One other thing, I would have never accepted a torn (compromised) bag of flour. Would you have accepted a bottle of milk if the cap was not tight and sealed, of course not, so why accept a bag of flour that has been torn open. In a commercial setting we will never accept anything that cones in damaged, especially something like a bag of flour. Who knows how or why it was torn open? Who know how long it was allowed to remain open to let insects or rodents access the flour? What caused the bag to be torn open, a piece of wood, fork from a fork lift, dropped? How do you know nothing was put into the flour? You get the drift, file a claim and tell the carrier to come and get it.

Chitchat / Re: Is this safe to use?

Bromated flour is a "state" thing, some states allow it, others may not. California doesn't ban it but it does require that the flour and anything made with it have a labeling stating something to the effect that (this product contains potassium bromate which has been shown to be a potential carcinogen) This is the same type of warning label that is carried on a pack of cigarettes or bottle of alcohol. Bromate is illegal in all of Canada though.

By the way, you really don't need the bromate, the amount that is added is much less than what it used to be so the impact on flour performance isn't as dramatic as it once was.

Chitchat / Re: Is this safe to use?

Didn't we just recently discuss this topic?

New York Style / Re: Plan On Using Whey Left Over From Making Yogurt, anyone tried It?

As I said, this is possible due to the use of maturing agents added to the flour at the flour mill. In the rare cases where a bakery might receive "green" flour (completely untreated and freshly milled) the bakery will add oxidation such as ascorbic acid in the dough formulation to improve the performance of the flour through their automated processing equipment.

The most commonly used maturing agent added by the flour mills to the flour to allow almost immediate use of the flour is Maturox. If you Google (flour additive maturox) you can get more information on it.

Dough Clinic / Re: fresh milled flour

It's not that flour can't be used in baking on the same day or soon after milling, it's just that the overall baking performance is significantly improved and issues with stickiness during handling/processing are greatly reduced (that's what oxidation does for a dough). If dough is going to be manually processed or processed using a minimum of automated equipment there is usually no problem at all as adjustments can be made during handling to accommodate the handling properties, this is not possible in an automated or semi-automated bakery environment.

As for whole-wheat flour the legal definition of whole-wheat flour is flour that is milled to varying fineness from 100% of the wheat berry, including the germ portion. It is true that that the bran is removed during the milling process and then added back when making whole-wheat flour. When wheat has been "just" milled

into flour certain aromatics are released as a result of the milling process (you can smell this in a commercial flour mill too) but as the flour ages such as during distribution and sitting on a store shelf awaiting sale, these aromatics are dissipated resulting in a different aroma. Believe it or not, essentially EVERY commercial user of wheat flour (bakeries, pizza commissaries, etc.) are all using flour that is between 4 and 36-hours old between the time that the flour was milled and the time it is being used to make dough. The reason why we can do this is due to the addition of maturing agents to the flour which provides the oxidation needed for optimum flour performance in high speed processing equipment. I might add that in Germany they do not use these maturing agents but instead have a process where the flour is exposed to heated air in something resembling a cyclone separator, the mechanics behind this are that heat, like burning is an extension of the oxidation process so they can achieve the desired amount of oxidation within a reasonably short time without any maturing agents. This is just like the old bakers used to do by storing their flour behind the oven for weeks but just accelerated.

Dough Clinic / Re: fresh milled flour

None that I'm aware of. But note that I said to "roll the bag down onto the product", this is done to eliminate the head space in the bag, Zip Lock bags allow for a huge amount of head space. Every time you open the bag you allow moisture to enter the bag, this moisture is present in the head space, so the more head space, the more moisture, this moisture condenses on the malt and is absorbed into it.....did you want to use one lump or two in your dough? :). With the malt in a plastic bag rolled down upon the malt and secured with a rubber band you can place it into a Zip Lock bag for added protection.

When I remove malt from the bag I like to lay the bag on its side, unroll the top allowing access to the malt, then opening the bag just enough to insert a soda spoon remove what I need, remove the spoon and roll the bag back down tightly against the malt. I know all this sounds silly, but remember that moisture is not your friend in this case.

Prep Equipment / Re: 50lb+ Flour Storage

Mindflux;

Garlic and many other herbs can carry the organism clostridium which can produce the botulinum toxin which is deadly. For this reason it is highly recommended that you make any infused oils daily and discard at the end of the day, or you can freeze it immediately after preparation and remove just enough for your immediate use (keeping the rest frozen). This has always worked well for me (you won't hear from me anymore if it doesn't). To learn more about this just Google (Can clostridium grow in home made garlic infused oil?). There is quite a bit of good information on it there.

Sauce Ingredients / Re: My Pizza Sauce

PizzaPap;

One to two hours? Big difference. Here's a better way to determine when to open the dough. Get a dial aka stem type thermometer (\$10.00 to \$15.00)

Walmart and auto stores usually have them for about half of that, they're used to check the air temperature from the car's air conditioner) and insert it into the dough ball until the tip of the stem is about in the center of the dough ball, when you record a temperature of 50 to 55F it's time to begin opening the dough ball(s). Since all doughs are different in one way or another you can experiment with the temperature to find the temperature that allows for the easiest opening of YOUR dough then from that point on all you need to do is to look for that temperature.

Don't worry about the ambient temperature as it will have little or no effect upon the internal temperature of the dough ball.

Dough Clinic / Re: Hydration/dough opening

Ross;

The "00" flour may not have the same absorption properties as your bread flour so if you are adding water as a constant (always adding the same amount) it might be too much for the "00" flour, hence the stickiness. Using an autolyse may help as it allows the flour to better absorb the water. I've found the best way to do this is to just put the water in the mixing bowl first, then add at least 75% of the flour and mix just to incorporate. Allow to hydrate for a period of time (I like to use 1-hour), stir any dry ingredients into the remainder of the flour and add to the dough along with any other ingredients, mix the dough just until it comes together and begins to form a ball in the bowl, with the mixer running at low speed pour a small amount of oil down the inside of the bowl, mix for 10 to 15-seconds, immediately remove the dough from the bowl and take to the bench for kneading.

Newbie Topics / Re: Sticky dough and pre ferment questions

Best to store it in a small air tight container (plastic bag that you can roll down onto the malt is best). The object here is to maintain "0" or as little head space as possible in the container and then store in the fridge BUT be sure to remove it at least an hour prior to opening the bag, this will prevent condensation from forming on the dried malt resulting in one large cube of malt. I store my malt in a small plastic bag that I roll down onto the malt powder, secure it with a rubber band and then place it in a plastic jar (don't worry about head space in the jar, that's what the plastic bag addresses). I use a soda spoon to remove what I need as quickly as possible and then reseal and place back into the fridge. Seems to keep forever.

Prep Equipment / Re: 50lb+ Flour Storage

Germ oil aka wheat germ oil. Some flours available today are ground (they call it milled) and then sifted to remove the larger pieces of bran which leaves the flour with a higher level of germ oil than conventional "white" flour. Germ oil is highly unstable so it oxidizes (turns rancid) rapidly. This is why you should always refrigerate or freeze whole-wheat flour (because in whole-wheat flour all of the germ oil is still present in the flour). In commercial bakeries the whole-wheat flour is milled and shipped to the bakery where it is typically used in 10-days or less from the date of milling. If grinding/milling your own flour this is something that you might want to consider if you don't mill your grains as you need flour.

Prep Equipment / Re: 50lb+ Flour Storage

It will work for the developed insects and larvae but not for the eggs. Freezing for roughly 45-days will effectively destroy both the insects and their eggs, after that you can store at room temperature BUT any oil present in the flour will oxidize thus impacting the flavor of anything you make from it. The other option is heat treating the flour but that also impacts the flour in a negative way too BUT then there is always irradiation, works great but my unit just happens to be down at the moment for repairs :).

Prep Equipment / Re: 50lb+ Flour Storage

Just think of all those little spaces between the flour particles. For its volume flour is very light, lots of air in there taking up all that space.

Prep Equipment / Re: 50lb+ Flour Storage

Peter;

Protein has been a topic for some time now but when the schools came out with their new nutrition guidelines and pizzerias were approved to provide pizza to schools it became a hot topic. How to get all that protein into the dough????? Trust me, it couldn't be done! We ended up using protein as a stabilizer in the pizza sauce.....worked like a champ! In that application you need to select the protein very carefully as it must not create grittiness, and more importantly interfere with the flavor of the sauce, for this reason protein concentrates and isolates are commonly used (the purer the protein the less it resembles the parent grain), by this I mean that soy flour has a "funky" flavor, much like silage , but defatted soy flour (think of it as purified soy flour/most of the fat removed) has a much more tolerable taste, then when you further purify the protein to a concentrate (90% protein)it is for all purposes flavorless and when you take it to an isolate 95%+ protein content we are looking at near 100% pure protein that has no resemblance to its parent....soy flour.

On a different topic, would you please send me your e-mail address.

Dough Ingredients / Re: Article on Protein in Baked Goods

Agreed, unless you can run through your 50-pounds of flour in less than a month, the flour should be stored under refrigeration or better yet, freezing conditions. Even though the flour is run through an entilator at the mill there are always some insect eggs that survive the process, they will hatch into larvae (many call them "worms") in less than 28-days, depending upon when they were laid prior to milling. In any case it takes roughly 28-days from egg to mature insect (most likely confused cigarette beetles) where more eggs are laid and the population explosion begins. You can usually find these insects either on top of the flour or more commonly around the top edge of the bag, just above the flour where they are looking for a place to fly from to increase their infestation. Refrigerating the flour greatly slows the life cycle and freezing the flour for 45-days will kill any eggs that are present, then you can transfer the flour to the fridge for long term storage if you wish. Considerations: Flour is VERY DIFFICULT to freeze. A 50-pound bag might take as long as two weeks just to freeze (yes, it's that good of an insulator) you can get much more effective freezing by breaking the flour down into smaller bags (I use 5-pounds in a bag). Sperry is an organic flour and as such, it deteriorates to a great extent after only 2-weeks of storage at room temperature so if you use an organic flour it really must be refrigerated to maintain its quality. Ditto for whole-wheat flour too.

I hope this helps.

Prep Equipment / Re: 50lb+ Flour Storage

Peter;

This is a very good article but readers must remember that the thrust of the article is on protein supplementation of wheat flour based doughs where we are typically trying to supplement with 30% or more additional protein. Back in the mid 1970's I did a huge amount of research on protein supplementation and one thing that we found was that as mentioned the added protein, in many cases, would interfere with the development of the gluten film or at least the integrity of the gluten film. What we found that worked very well was to find out how much additional water would be needed to hydrate the added protein, then make a dough with that level of absorption (but without the added protein) the dough would be mixed to full or nearly full gluten development and the protein would then be added to the dough allowing the added protein material to be "tacked onto the existing gluten film". This was confirmed through the use of micro-photographs. The process worked

very well in that it allowed for the addition of up to 35% addition of non-gluten forming protein to the dough BUT all good things have a price and the price in this case was that we could not add much more than about 35% added protein, if we did the absorption increase was sufficient to interfere with the development of the gluten film prior to the addition of the protein. It was about this same time that we took a play from the play book of the old bakers and started using soakers to pre-hydrate the added protein material prior to addition to the dough, this same approach was used when we developed methods for adding huge amounts of fiber material to the doughs when high fiber was all the rage.

Pretty neat stuff!

Dough Ingredients / Re: Article on Protein in Baked Goods

For optimum performance fresh milled flour should be stored in a dry but warm location for approximately 30-days to achieve optimum performance as compared to a commercial flour. At the turn of the century, before oxidation (Maturox) was added to the flour to achieve rapid oxidation bakers used to store their pallets of flour behind the oven for up to a month prior to use to achieve natural oxidation which improved the baking properties of the flour. If you're making bread and pizza dough at home and you can live with a little stickiness in the dough handling properties and perhaps a little less oven spring you can use the flour straight off of the mill. In bread I would say that you might be able to pick-up a different flavor between fresh milled and commercial bag flour but in a pizza application with all of the herbs and toppings I have never been able to identify any significant difference in taste or aroma. If you have a ready made source for fresh milled flour you can save the expense of buying a mill, all things equal, it should perform as well as any flour that you will grind from your own wheat. Just make sure you know what kind of wheat is being used to make your flour.

Dough Clinic / Re: fresh milled flour

And we can also add insufficient dough absorption for the dough management procedure employed. Even flour that is too low in protein content can cause tearing of the dough at the time of opening. To get even more complex, add insufficient fermentation due to low yeast level, poor yeast quality, low finished dough temperature or even a dough management procedure which does not provide for sufficient dough fermentation time for biochemical gluten development to take place.

I think everyone would agree that we really need to know more about your dough formulation and dough management procedure (everything you do with/to the dough from mixing to opening) to really answer your question.

New York Style / Re: Dough ripping

I like to do the easy things first so I'd recommend increasing the dough absorption by an initial increase of 5% and if the dough is still tight/stiff begin increasing the absorption in 2% increments until you achieve a softer dough that is both easier to round as well as easier to open into a skin.

Please keep us posted on your progress.

Newbie Topics / Re: Balling (issues?)

Something else to consider is attending the Mid-America Restaurant Expo (formerly the NAPIC Show) in Columbus, Ohio. The dates are January 29 - 30, 2017. This is an excellent and well attended pizza show, second only to Pizza Expo. This is also a much less costly show to attend than Pizza Expo but still with excellent representation by vendors of ingredients and equipment and a good

variety of low cost and even free seminars to attend. If you're serious about planning to open a pizzeria in the future this would be an excellent opportunity to talk with vendors and gather information for future reference (a very valuable resource). To get more information on this excellent show just Google The Ohio Restaurant Association.

Shop Talk / Re: How to planning

Potato has been used as an effective bread softener for more than one hundred years, it is possibly one of the very first bread "additives" ever used. Originally the potatoes were boiled and mashed then the mashed potatoes were added to the dough as an ingredient but the modern approach to this now involves the addition of dehydrated potatoes, just like you buy in the supermarket. Based on research that I did for the U.S. Potato Board a number of years ago something between 2 and 5% dehydrated potatoes will produce the softest bread/buns without developing undue gumminess in the crumb structure. If you would like to get more information on this you can contact Teresa Kuwahara she goes by "T.K." at <teresak@uspotatoes.com> to request printed information. By the way, we also did a very thorough study utilizing different forms of dehydrated potato in pizza too. I have a formula for an excellent potato bread shown in the Recipe Bank at the PMQ web site <www.pmq.com>

Off-Topic Foods / Re: Burger Bun Recipe

In addition to Craig's comments I might also add that the dough appears to be quite dry/under absorbed. Are you experiencing any difficulties opening your dough ball into a skin?

Newbie Topics / Re: Balling (issues?)

Inver;

I add some cheese to my sauce but also add Parmesan and/or Romano to the cheese blend to add dimension to the cheese flavor.

General Pizza Making / Re: Adding a powdered cheese (ie: parmesan) to your sauce

The types of wheat that you will have to choose from are:

Hard white wheat (good for bread and deep-dish pizza)

Soft white wheat (cookies and pastry)

Hard red winter wheat (bread and deep-dish pizza)

Hard red spring wheat (Artisan breads, rolls, thin crust pizza) This type of wheat will provide you with the highest level of protein. Keep in mind when selecting your wheat that you want to select a wheat that is approximately 1% higher in protein content than the protein content of the flour you have been using, this is because approximately 1% protein content is lost when milling the wheat into flour. Note: Home "flour mills" are typically more of a wheat grinding mill than an actual flour mill (commercial flour mill) where the wheat is ground on a roller mill and separated into its different flour fractions. If your mill has a screen for sifting the bran out of the flour to make something resembling white flour you will lose that 1% protein as much of it is attached to the bran particles (that 1% lost protein by the way has rather poor gluten forming properties).

Just remember, select a wheat that is 1% higher in protein content than the flour you want to use. If you want to use a 12% protein flour select a 13% +/- protein content wheat.

Dough Ingredients / Re: Home milling high gluten flour

It sounds like the center of the dough is rising more than the edges forcing the toppings to the edges of the pizza especially during the oven spring phase of baking. You might try using a rolling pin to open the dough to full pan size, then place the dough into the pan and fit it as well as possible, allow the dough to rise in the pan for 45 to 60-minutes (cover with a piece of plastic to prevent drying) then lightly oil your fingers and re-fit the dough into the corners of the pan being sure to pull the dough slightly up the sides of the pan. Using a rolling pin to open the dough will result in a more uniform dough thickness across the pan.

Newbie Topics / Re: Each time I bake a (Sicilian) pizza lately, kitchen smokes up.

How long do you bake your pizzas and at what temperature? Also, do you pull the dough up slightly into the corners of the pan?

Newbie Topics / Re: Each time I bake a (Sicilian) pizza lately, kitchen smokes up.

In addition to all of the above the addition of powdered/grated cheese to the sauce also helps to neutralize some of the acidity of the tomato in the sauce. This is due to the calcium content of the cheese. We have seen this many times over when we presented pizza sauce to sensory panels and asked them to rate the tartness of the sauce (less perceived tartness when cheese was added). Additionally, when judged on a hedonic scale the sauce with cheese consistently received a higher preference value over that made without cheese. Because of these findings we have been adding cheese to our pizza sauce for about 20-years now.

General Pizza Making / Re: Adding a powdered cheese (ie: parmesan) to your sauce

PizzaPap;

That being the case reduce the baking temperature to 375F and again bake JUST until a little hint of color begins to develop.

Newbie Topics / Re: Par baked/frozen skins

PizzaPap;

You're always going to lose a certain amount of flavor when using a par-baked crust. Texture on the other hand is a mixed bag. When pizza is made on a par-baked crust and consumed fresh and hot after the final (finishing) bake there is not much if any difference in texture, BUT after the crust cools (eating cold pizza) you can really appreciate just how dry the crust has become as a result of baking it twice.

BTW: In the pictures of your latest par-bake crust you have too much color on the top of the pizza so I'm assuming the bottom will also have too much color too. Do you have any pics of the bottom? All you are looking for is just a faint indication of color beginning to form.

Newbie Topics / Re: Par baked/frozen skins

John;

That was John Crow, President of Lloyd Pans. Pizza Paul (Paul Nyland) passed away about four years ago.

Dough Clinic / Re: dough mixing and biochemical gluten development

BMK82;

I also have a video of the procedure that Peter referenced being used in a local pizzeria here in Manhattan, Kansas where they are making New York style pizzas

at AJ's New York Pizzeria, Manhattan, Kansas.

If you would like to see the video please send my your e-mail address and I'll send it to you.

<thedoughdoctor@hotmail.com>

Prep Equipment / Re: Need advice on how to make it easier for people to make pizzas

Properly developed gluten in a dough to be used for making pizza is developed just enough to provide a little elasticity, a smooth skin and relatively non-sticky handling properties at the bench during scaling and balling of the dough. Unlike bread bread doughs pizza doughs are not mixed to full gluten development, we let biochemical gluten development take care of that for us during the fermentation period whether it be a cold fermentation or warm (room temperature) fermentation. When mixing pizza doughs all you need to do is to mix the dough until it takes on a smooth, satiny appearance and exhibits decent handling properties at the bench.

There has been quite a bit of discussion on this lately.

Newbie Topics / Re: What does gluten development look like?

John;

That was back when we used to have guest pizza experts to work with our students too. Big Dave (Dave Ostrander), Pizza Paul (Paul Nyland), Evelyn Slomon and Chef Ted Rowe (Mulberry Street Pizzeria, San Rafael, CA) were regulars back at that time as well as representatives from all of the major pizza oven, equipment/tool, and ingredient manufacturers. My "right hand man", understudy and assistant with a huge amount of pizza research was Jeff Zeak (The Pizza Practitioner). Jeff left the AIB at the same time as I did and he now works for Reiser Equipment Company specializing in V-Mag rotary extrusion dividers.

Dough Clinic / Re: dough mixing and biochemical gluten development

The lightest I go for a 12" skin is 250-grams (about 8.75-ounces), but my normal dough weight is 275-grams (just over 9.5-ounces).

American Style / Re: SO, how big are your dough balls?

Additionally, when you first put a dressed skin in the oven it will always stick to the hearth until it has a chance to sear (like searing a steak) but after 20 to 30-seconds you can use the spinning peel to move the pizza around in the oven or rotate it for an even bake. What are you using for your peel dust? With a very thin skin and no peel dust you can get a condition where the moisture from the sauce or toppings enters into the dough making it sticky and this will glue itself to the oven hearth, but we normally see problems with peeling the pizza into the oven when this condition is present. If you are pre-saucing or prepping the skins there is a possibility that the skin is tearing when peeling it into the oven thus creating a condition like that mentioned previously. If you are prepping the skins in advance, it's always a good practice to very lightly brush the skin with oil before applying the sauce, this creates an effective barrier to moisture migration into the dough while it's waiting for its turn in the oven.

Neapolitan Style / Re: Pizza bottom sticking to the WFO floor - WTF?

Mitch/Ovenray;

Mitch, your dry milk will work as well but you will need to use more of it as the average lactose content is around 45% as opposed to 70% for whey, I would suggest using non-fat dry milk solids to limit any flavor contribution from the

butter fat content of dry whole milk solids or dry butter milk solids. Additionally, whey has very little impact upon the dough absorption but when using any of the dry milk products the rule is to add an equal amount of water as dry milk solids to compensate for the absorption properties of the dry milk solids.

Ovenray, I don't have any idea of what the lactose content of the liquid would be (maybe an internet search would turn something up) but yes, it can be used, however due to the amount of water present the amount used would be significantly higher. Also, that thin liquid floating on top of yogurt is high in lactose too but I have no idea of the lactose concentration. Coffee creamers can also be a good source of lactose too with some of them as high as 50% lactose. You might Google the brands you have available to you to see what their lactose content is. Unless you want a different flavor be sure to use an unflavored coffee creamer, but then too it might be interesting to play with different flavored coffee creamers just to see how they would impact the finished crust flavor, you might come up with something interesting there.

Dough Clinic / Re: Crust Color and Pre-Ferment

Depending upon the protein level of your existing flour you can probably go up in protein content to achieve a stronger gluten film and with all that fermentation chewiness shouldn't be a problem, and it might even help contribute to the crispiness of the crust.

Dough Clinic / Re: Last Little Bit of Elasticity

Mitch:

I think your suspicions were pretty close. The crust has that dull, chalky color that is common with over fermented, high acid dough. There was no sugar of any kind to participate in the browning reaction and the acidity of the dough is blocking the browning reaction with the flour. Where the crust is in direct contact with the oven hearth the dough is receiving enough heat to develop some color but not very much. During normal fermentation the enzymes in the yeast convert a portion of the starch in the flour to sugar (glucose and fructose) which can be metabolized by the yeast but when fermentation is excessive those sugars are all consumed by the yeast (less crust color) and the acids developed during the long fermentation time pretty well block the browning process (again contributing to the "funky" crust color). Where you have the crust in direct contact with the oven hearth sufficient heat is delivered to the dough/crust to begin browning due to the presence of the proteins in the flour (the crust color is pretty light under these circumstances). Here is a test that you might try sometime: Find some sweet dairy whey (health food store?) and add 5% based on the total flour weight. Whey contains roughly 70% lactose (milk sugar) which is not fermentable by bakers yeast, and it is the least sweet of all the sugars (less than 10% as sweet as sucrose (table sugar) so it will not impart a sweet taste but it will participate in the browning reaction to provide improved crust color. If this works it would confirm the above postulation.

Dough Clinic / Re: Crust Color and Pre-Ferment

Peter is absolutely correct. Making pizza in a controlled or somewhat controlled environment such as a pizzeria is pretty easy as compared to making pizza in a home environment where the number of variables are endless. That's what keeps us young and alert, trying to unravel the everyday problems experienced by professional and novice home pizza makers.

Just look at the number of posts made to the Think Tank at <www.pmq.com> as compared to here. It's also interesting to look at the differences in questions/problems posed too.

Dough Clinic / Re: New to dough and having same problem

That being the case, just begin slowly increasing the amount of IDY but not more than double of what you are presently using. Pick the yeast level that gives you the most improvement then begin slowly increasing the dough absorption (amount of water added) by one or two tablespoons at a time until you see the improvement in crumb structure that you are looking for. If the dough begins to get a little sticky while you're handling it don't be afraid to use a little oil on your hands and/or dusting on the bench (counter top). Keep us posted on your progress.

Dough Clinic / Re: I want dough with lots of air pockets.

John;

What year did you attend my pizza class?

Dough Clinic / Re: dough mixing and biochemical gluten development

There is some confusion over what dough docking really is. Some liken it to "perforating" the dough but this is incorrect and serves little function. Dough docking is actually pressing the dough together, much like spot welding, where the top and bottom of the dough is physically locked together. Properly docked dough does not show a hole in the dough, instead it shows an indentation. You can see this very clearly by looking at club crackers or especially saltine crackers, there are few if any holes through the cracker, there is a thin layer of dough covering the bottom of the indentation. It is the locking together of the top and bottom of the dough which controls bubbling of the dough. The best dough dockers, by far, are those with the flat tipped wheels like those from American Metalcraft which MartyE showed in his response. I always like to reference a tool or anything else from a supplier that anyone can access as this allows one to actually see what I'm talking about, then, like Peter said, you can go out on the Internet to see if you can find the same item at a lower price, which is usually possible once you know exactly what you're looking for.

As for docking dough in the pan, by all means protect your pans by using a plastic docker as opposed to a metal pin docker....the Lloyd Pans don't come cheap. By the way, there is a plastic docker which has long plastic pins (American Metalcraft Long Pin Docker #DD5703) which in my over 50-years in the industry I've never found an excuse for using.

Stones/tiles/steel, Pans & Accessories / Re: Dockers.. Plastic vs. Metal pins.. any good plastic ones recommended for docking in the pan?

It's true, commercial yeast does not multiply, in fact you cannot grow yeast under normal conditions encountered in baking procedures/processes. If yeast did multiply during fermentation it would be impossible to control the rate of fermentation due to the rapidly and ever increasing yeast cell numbers. You can reference this in the book Baking Science and Technology by E.J. Pyler. What happens during the fermentation process is that the yeast cells mature (swell in size) but do not bud (that's how yeast multiplies), any daughter cells present in the yeast will mature but again not bud. So technically there is essentially no increase in the actual number of yeast cells present.

Sourdough is quite different from a cold fermented dough, even one which has been fermented for the better part of a week. It has a much greater acidity and the acids present (primarily acetic, lactic and propionic) are in different proportions giving the finished product (pizza crust) a totally different flavor. To achieve this difference in acids sourdough is normally made using wild yeasts and lactic acid forming bacteria common in the air.

[**Newbie Topics / Re: Cold fermentation**](#)

John;

Providing dough "B" wasn't over mixed (highly unlikely in the real world where high protein flour and modest mixing speed is the norm) both doughs would be considered on a gluten development plateau. We used to show this in our annual pizza class by mixing one dough just to cohesiveness and the other to a very smooth consistency and the students would always ask "why don't we just mix the doughs longer if it doesn't hurt them in any way?" The answer was that while you could see a difference between the two doughs at the bench during cutting and balling there was no perceptible difference between the doughs on the following day after a period of biochemical gluten development the additional mixing time took its toll even on our 80-quart planetary mixer as you could feel the motor heating up after mixing the dough for the longer period of time. Bottom line, it makes life a lot easier for your mixer and reduces the probability that you will develop a first name relationship with your mixer repair man. Occasionally, when using a mechanical rounder the dough does not handle as well as it should during rounding if mixed just to the point of having a smooth, satiny appearance so we need to mix the dough a minute or two longer to get it to perform correctly at the rounder.

I think this is why there are so many questions regarding the mixing of pizza doughs, while we can mix the dough for different periods of time we don't see any significant difference in the end, and like I said above, that is a valid observation, but what we are missing is the impact that the longer mixing time is having on our mixer. My philosophy when it comes to mixing pizza dough is to mix it just enough to allow for decent bench handling (so it isn't sticky during scaling and balling) and let biochemical gluten development do the rest of the work for me.

[**Dough Clinic / Re: dough mixing and biochemical gluten development**](#)

First of all, I'd suggest replacing that scale and converting your "recipe" into a "formula" based on weight measures as this will give you the reproducibility needed to zero in on a target characteristic. With the formula in weight measures we can put it into bakers percent to better manage and formula changes.

From your description it sounds like they are using a commercial frozen dough, but you don't need to freeze it to replicate it. Adjust the water temperature to give you a finished dough temperature of 80 to 85F (you'll probably need to start with 70F water), mix the dough as you are presently doing and immediately after mixing scale the dough to desired weight and form into a dough ball. Oil the dough ball and place it into a plastic food bag (NOT A ZIP-LOCK BAG), or a bread bag, twist the open end to form a pony tail and tuck it under the dough ball as you place it in the fridge for 18 to 24-hours. Remove from the fridge and allow to warm at room temperature for 1-hour, then invert the bag over a bowl of dusting flour allowing the dough ball to strip the bag inside out as it falls from the bag. Flour the dough ball well and hand shape it to desired size.

Here are a couple of things that should help you achieve the characteristics you're looking for:

- 1) Increase or adjust the IDY to 0.5% of the weight of the flour.
- 2) Increase the water (absorption) to 65% of the weight of the flour.

With these formula and procedure changes I think you will be a lot closer to where you want to be.

[**Dough Clinic / Re: I want dough with lots of air pockets.**](#)

Pizza Pap:

There is no hard and fast rule for par-baking pizza skins except to say that they are baked at around 400F for about 4-minutes, but depending upon the type of oven used that could be as short as 2-minutes. Every dough formula par-bakes differently, you have to match baking temperature against baking time to control bubbling, then look for opaque spots or what appear to be oil spots on the par-baked crusts, there are NOT oil spots. They are areas of crust collapse due to insufficient baking (longer baking time is normally used to address this). Docking the skins helps to control the amount of bubbling on the crusts. A couple of tricks that work well with par-bakes is to invert the crust immediately upon removal from the oven onto a screen for cooling (flattens out and bubbles) and if you want an absolute minimum of bubbles just apply 1/2 of the sauce to the skin before baking, works great. No need to refrigerate either as the sauce will be RT stable for the day.

Does a par-baked crust change due to refrigeration or freezing? You bet it does! It stales very rapidly under those conditions. The crumb structure becomes firmer (could be perceived as a good thing) and there is also a loss of flavor as compared to one that wasn't refrigerated or frozen.

Newbie Topics / Re: Par baked/frozen skins

Gluten is formed when wheat flour (proteins) is agitated in the presence of water. If the oil is added along with the water we see a significant variation in dough consistency from batch to batch, this used to be blamed on the weather but now we know that it was due to the fact that some of the flour was absorbing oil and unable to form gluten. To eliminate this problem we developed the "delayed oil addition" method of mixing where the dough is mixed without oil for about 2-minutes, or just until all of the flour has been hydrated, the oil is then added, the dough mixed for 1 more minute at low speed and then medium speed is used to develop the dough to the desired level of gluten development. If a plastic fat (butter, lard, margarine, shortening, etc.) is used it can be added right on top of the flour without using the delayed "oil" addition method. The plastic fat will not readily adsorb into the flour and impact gluten development.

Dough Clinic / Re: Does oil affect gluten development

Chris;

It isn't that your starter was contaminated but it certainly sounds like it was initially cultured at a temperature other than what was specified. When this happens you end up with different bacteria becoming the dominant bacteria in the starter which gives a different flavor and aroma profile. This is what it sounds like happened. I'm not aware of any practical way to re-culture the starter where the favorable bacteria is selected for growth (culturing) over any other bacteria that are present. You might try dividing up the starter material that you have to make several smaller starters and take great care to hold them at the recommended culturing (some refer to it as the "ripening" temperature) to see if the original bacteria (it will be one of the many forms of lacto bacillus) is still viable, if it is it might grow to become the dominant bacteria and you will have your original starter back. Be sure to follow the instructions for feeding the starter. It might take as long as a couple of weeks to recover the starter if it is recoverable. If the starter is not recoverable your only option is to start all over again but in that scenario I would divide the culture into at least two containers so I'd have two identical starters culturing at the same time, this way if one is lost I would still have the other one from which to make more. Always keep multiples of your starter...just in case. In use you would use from one starter one time and use from the other starter the next time thus allowing you to continually feed the starters keeping

them active, if you don't use enough of the starter don't be afraid to either discard some of it or share it with a friend. The bubbling and aroma are the indicators that you look for to determine if something has gone wrong with the starter.

Dough Clinic / Re: Do i have to wash my starter?

Parallei;

What kind of pizza do you make? I would agree with you totally if your pizza is made using a lower absorption dough (under 65%). Then again, your dough may have already been optimized for the Denver altitude. Remember, all of the recommendations are intended as guidance for those going from something closer to sea level to 5,000-feet or more. It's just a matter of physics, when there is less atmospheric pressure pressing on the dough it will expand to a greater degree than when there is more atmospheric pressure pressing on the dough (the internal pressure within the dough will remain the same). It's like a balloon, blown up in San Diego, it will actually increase in size if taken to Denver.

General Pizza Making / Re: How Elevation Affects Baking Performance

One thing to keep in mind about the nutritional labeling is that in most cases it is generated through the use of a computer program, as such the total fat reported will come from the tomato, the flour, and anything else that will contain fat, it's not just the added fat. Sodium can come from the sauce, cheese and dough including constituent ingredients for each. Protein can come from the tomato, flour, yeast, as well as constituent ingredients in the sauce. Fiber will come mainly from the tomato and flour but there could also be ingredients in the sauce which would also contribute fiber. I won't go into all of the details here but this just gives you an idea of what you might be up against Pete is absolutely correct, the ingredient panel would show you a lot more useful information. When we used to do a lot of reverse engineering if we didn't have good solid data to work from we took the "duck" approach. Develop a product that has all of the attributes of the target product and then do a nutritional profile on it, you'd be surprised at how similar the products were most of the time.

Remember a huge amount can be learned about a product by just looking at it and then feeling it and tasting it so this will narrow the formulation down, then looking at and tasting the sauce will provide some direction for the sauce. In the end, we have found if it looks like the target, tastes like the target, has the same or similar textural properties, and the sauce comes close, the nutritional profile will tell you just how close you came, or look at it this way...if it has all of the attributes of the target, close enough, that's what most people are looking for anyways.

Cracker Style / Re: Shakey's nutrition, a clue?

When it comes to making pizza at home when that home is located at around 5,000-feet (I'm thinking Denver, CO) or more, you may have some challenges if you're making pizza using a very high absorption dough as it may overly expand during oven spring and baking, or even over expand (not to be confused with over fermenting though the appearance is identical) during the fermentation period requiring more frequent punching of the dough. You will also most likely need to reduce the amount of yeast used in the dough. How much to reduce it? I can't answer that as there are just too many variables involved, but the way I do it is to begin reducing the yeast level until I achieve the desired finished crust characteristics that I'm looking for. Then again, maybe high altitude is the ingredient that's been missing and you are now getting the finished crust that previously you could only dream of getting. Remember that the effect of altitude on a dough works in both directions (up and down) so if you formulate a dough and

dough management procedure as well as baking parameters at high elevation and them move to a lower elevation (say Denver, CO to San Diego, CA) you will need to make some changes too, such as more yeast and possibly more water(absorption) to allow the dough to expand as it previously did in Denver, and if you are baking in an air impingement oven you will most likely need to adjust the baking time and temperature (lower temperature and shorter time). When you're trying to make pizzas in Quito, Ecuador all cards are off of the table as the rules just don't seem to apply anymore, moderate yeast level, slight adjustment in absorption (lower) just to control the dough from turning into a pita during baking, with baking temps around 600F, from there you just manipulate the formula and dough management procedure to get a dough that doesn't flow all over the place and which gives you a finished crust close to what you're looking for. Yes, it is a bit of a challenge.

General Pizza Making / Re: How Elevation Affects Baking Performance

Ryan;

A "flying sponge" is really designed to be used when a bakery receives a late order for more bread but they only have sufficient sponges on hand to make the doughs needed to produce to the order which was received the night before. So a flying sponge is set to allow the production of additional doughs from which the additional breads will be produced. Think of it as the commercial bakeries version of an emergency dough, that's really all it is and that's how it is used. The flying sponge is used only to add flavor to a dough which would otherwise be made using little to no fermentation so the finished bread will have a flavor profile somewhat similar to that of the regular production bread made with a conventional sponge at about 70 to 75% for bread or 80 to 85% for soft buns (hamburger buns).

A straight dough using the same fermentation time as the flying sponge will impart significantly more flavor into the finished bread than a flying sponge. So, why don't the large wholesale bakeries just use a straight dough for their "pluses" (bread orders received to late to include in the normal production run), it has to do with the size of the dough troughs on hand. The troughs in a sponge-dough bakery are sized to accommodate the fermented sponge but not a full size dough with any significant amount of fermentation on it, additionally, in automated equipment a straight dough handles quite differently than a sponge-dough so rather than re-set the entire line they just use a flying sponge.

Which brings me to one of the great mysteries of commercial pizza production. Why don't commercial pizza producers use a sponge-dough method for making their dough? It offers many benefits over what they are presently doing, it improves the flavor of the finished crust, gives better oven spring, the dough is softer and more extensible for improved forming by just about any commercial forming method, and it's easy to implement. Two reasons have come up, 1) They don't have the space to ferment the sponges in. 2) Huh...we never considered it, how did you say you do that?

No figure!

Dough Clinic / Re: Question on preferment

The work that Klaus did was based on bread and cake systems and because they address certain laws of physics the results are the same for both large and small batch sizes, BUT keep in mind that this work was done using typical bread formulas which utilize three times or more yeast than pizza doughs, also the bread doughs are much softer than the average pizza dough (62% absorption, 3 to 5% yeast (CY), 3% oil, use of a 70 to 75% sponge, and mixed much more than we do a pizza dough (typically mixed beyond full gluten development to achieve the desired dough extensibility characteristics. The way a pizza dough bakes at increasing

altitude is the same though as reported, more moisture loss during baking, higher baking temperature and longer baking time are needed at any thing much above 4,000-feet. We generally don't make any absorption adjustments when making pizza at high elevation because we look at the increased moisture loss as a positive feature and the stiffer dough pretty well resists the expansion due to the lower atmospheric pressure (but bubbles do seem to be more common). When baking pizzas in an air impingement oven at high elevation we find that we commonly max out the temperature which means that we then need to re-profile the finger configuration to accommodate a longer baking time. A few years ago I was consulting for a large box chain with stores at both sea level and at 5,000+ feet elevation and they just couldn't figure out why the high elevation stores couldn't follow the "ops" manual and bake the pizzas at the specified time and temperature (which were established at an elevation of only 750-feet).

As I've said before, there is a fork in the road where bread technology goes one way and pizza technology goes another way.

General Pizza Making / Re: How Elevation Affects Baking Performance

A number of years ago it was discovered that the addition of 1% salt to the sponge resulted in a more consistent fermentation rate making the age of the sponges more predictable in a large scale production environment.

Dough Clinic / Re: Question on preferment

Alvin;

If it were me, I'd upgrade to something like the Dough X Press Model DXM or the equivalent from Dough Pro. They're actually easier to use and they have a thickness adjustment. Remember though with press forming the dough weight will have a great influence on the thickness of the pressed skin.

Shop Talk / Re: Doughpro PP1818 pizza press

You might also take a look at using the Stanislaus 74/40 tomato filets (drained for 30-minutes) in lieu of a regular sauce. It has the appearance, flavor and texture to make an outstanding pizza, or try adding them to a pizza lightly topped with 7/11 ground tomatoes to complete the sauce. Makes for a really flavorful sauce.

Sauce Ingredients / Re: Opinions on cannned tomato products

For ADY your yeast amount should be at 1 to 1.25-ounces. Your dough might not be getting sufficient fermentation or oven spring with only 6-grams of ADY. Your dough absorption is also on the low side at only 56.6%, I think you might achieve a crispier crust by going to at least 60 or 62% absorption (9 to 9.3-pounds).

Depending upon what temperature you're baking at and what you're baking the pizzas on, the sugar could also be a contributing factor.

General Pizza Making / Re: Trying to get crust crispy++

You're right about the "old dough" in this case still having a lot of life in it, for all practical purposes it is really more of a frozen fresh or young dough than an "old/long in tooth" dough. For this reason I would simply down size my new dough to 70% of the original size, add the frozen, fermented dough and you should be good to go.

Tip:

How to down size a dough to 70%.

- 1) You must have your dough formula in weight measures and bakers percent.
- 2) Add up the weight of all ingredients to get the original dough weight.
- 3) Now, add up all of the bakers percentages and divide by 100. You should get

something around 1.7?

- 4) Calculate 70% of the dough weight. dough weight X 70 (press the "%" key) and read the 70% dough weight in the display. Still with me?
- 5) Divide the new dough weight (70% of the regular dough weight) by the number you got in #3 above. This will give you the flour weight needed to make a 70% size version of your regular dough.
- 7) Use bakers percent to calculate your new ingredient weights for the new dough size.
- 8) Add the fermented/frozen dough to the bowl along with the ingredients for the new dough size and you should be good to go.

Note: But what if the fermented/frozen dough doesn't contain all of the ingredients in my dough? That being the case for those specific ingredients just use the amount correct for a full size dough. If you find that the frozen/fermented dough contains more of an ingredient (IDY) than your regular full size dough calls for do not add any more IDY (I have yet to devise a way to remove yeast from a dough).

If you want you can compare the ingredient contribution of each ingredient ingredient in the frozen/fermented dough and compare it to the amount of that ingredient needed in a full size dough then if you need to adjust the amount you can make that adjustment when adding the ingredient at the dough stage.

Dough Clinic / Re: Question on preferment

Oh boy! sooo many questions to ask.

What kind of pizza are you thinking of making? Dine-in or DELCO (delivery & carry out)? What kind of utilities do you have (gas or electric), how much space do you have? Make sure you have overhead room for a hood over the oven, probably with a fire suppression system. Pizza prep area/make line.

If you are looking at a deck oven make sure you have at least 1.5 times the depth of the oven for free space in front of the oven for the oven tender to work in. Marsal <www.marsalsons.com> also makes some very good ovens with excellent recovery times. They are known for their thick baking decks. I wrote an article in PMQ on choosing the right oven a short time back that you might want to research and take a look at.

Shop Talk / Re: Opening a new store, recommendations ref ovens

Oh yes, those fond memories of mixing in the "sponge" mixing room, you will NEVER forget that smell of fermentation.

The only difference between a sponge and adding old dough is that, as you know, the time and temperature that the sponge is fermented at is closely controlled so it's consistent ALL THE TIME, plus the amount of sponge added to a specific dough is always consistent too. Adding old dough is somewhat more inconsistent unless it is well controlled from the time that it is captured to the time it is used and this means using the same amount of it all the time too. It's all in consistency, sponges are made to be consistent, old dough is just that, unused dough. In the production of commercially made pizza crusts using the sheet and die cut forming method there is what is referred to as a web scrap (when you cut circles out of a continuous ribbon of dough you are left with a web between the cut circles which has to be removed (it can be anywhere from 22 to as much as 45% of the total dough weight, meaning that if you sheet and cut 100-pounds of dough into circles of a given size from a ribbon of dough of a specific width you will generate 22 to 45-pounds of scrap dough. This scrap dough is captured (removed from the line) immediately and automatically and conveyed back to the dough mixing station where it is incorporated back into fresh dough. Note that the dough is always captured from the same place on the line and it is immediately conveyed back to

the mixer(s) for incorporation into the new/fresh dough for consistency. Like we always say: GIGO (garbage in, garbage out).

From the perspective of a home pizza baker or bread baker for that matter the addition of old dough to your new/fresh dough might improve the flavor as well as the handling properties of the dough (it can help be making the dough a little softer and more relaxed/reduced dough memory) and for any inconsistency, every one of our pizzas is a "one off" so why even worry about any slight inconsistency the "old dough" might bring to the party (pizza party).

Dough Clinic / Re: Question on preferment

If your cooler is operating within the recommended safe food temperature range of 34 to 40F (more typically 36 to 38F) your problem with refrigerated dough might have been due to any of the following:

- 1) Dough temperature too high when coming off of the mixer (75 to 80F is a good temperature range).
- 2) Failure to cross-stack dough storage boxes. If using bags instead of boxes cross-stacking is not used as there is nothing to cross-stack.
- 3) With heavy weight dough balls you can vastly improve the rate at which they cool by flattening the dough balls into pucks (like large hockey pucks).
- 4) Something is wrong with your dough management procedure which impedes the effective cooling of the dough.

There is also a process referred to as "super cooling" the dough, by this process the dough pucks or dough balls are placed into the freezer for a specific length of time (maybe 90-minutes) to super cool the dough, it is then transferred to the cooler for normal storage. The advantage here is that you don't need to go through the slacking out/thawing period that you have to go through with frozen dough.

With the above taken into account the room temperature will have little or no impact upon the cooling of the dough.

Dough Clinic / Re: Is my NY Style dough formula ok ?

I have always found that 400F is a good starting point for par-baking shells of any thickness but due to variations in different ovens you may find that a different temperature works better for your specific dough formulation, thickness and oven. Regarding bake times, unless you have a conveyor oven where you have near total control over the baking time I wouldn't worry about baking time, I would just bake the shell until you just begin to see some development of color. If you find that you are getting the color development but signs indicate that the shell is still not completely baked your oven is too hot.

I should have mentioned earlier that there is also one other way to make par-baked pizza shells. That is to apply a light application of sauce to the skin prior to baking, about 1/2 of the normal sauce amount is a good amount to use. The sauce on the skin reduces bubbling and allows you to bake the shell a few seconds longer to ensure a complete bake. We do this at AJ's New York Pizzeria here in Manhattan, Kansas and it works just great.

Newbie Topics / Re: Par baked/frozen skins

As baking is critical when making par-baked crusts there is always a tendency to under bake. When this happens you will notice two things:

- 1) With significant under baking you will see the crust collapse into a flat poker chip upon cooling.
- 2) With only very slight under baking you will see what appears to be oil spots on the surface of the crust after cooling. These are NOT oil spots, instead, they are areas where the dough has collapsed due to under baking. This has blind sided

even some of the commercial par-baked crust manufacturers as well as the frozen pizza manufacturers.

Additionally, if the crusts are over baked, developing too much color during the par-baking process they will color up too fast during the finishing bake giving a pizza with a properly colored crust but with under baked toppings or lack of top color or a perfectly colored top to the pizza but a crust with too much color. For the commercial producers it is absolutely critical that they control the color of the par-baked crusts, so much so that some are now installing automated color monitoring equipment on their production lines much like that which is used on commercial hamburger bun lines. This equipment is designed to monitor color and "predict" changes in color before it is perceived by the human eye and make oven adjustments as needed to maintain the color at the target specifications.

Newbie Topics / Re: Par baked/frozen skins

Carl;

In Mexico we used to call it Madre de la masa"/Mother dough, in the U.S. as in other parts of the world when done commercially it is referred to as the sponge-dough method of making dough. You might think of biga, sourdough starter, dough starter, and a brew as variants of this method. There are two variants to the method, one involves adding an undetermined amount of old dough to the new dough (great way to use up old dough or left over dough) and the other involves the addition of a measured, predetermined amount of fermented dough.

Commercial bakeries call this the sponge-dough method where up to 80% of the flour is allowed to ferment as a sponge consisting of flour, water, yeast and a small amount of salt, for periods of 2 to 6-hours before addition to the dough side with the other ingredients. The brew is just a liquid form of a sponge but it contains only 20 to 50% of the total flour, yeast and a small amount of salt with a much greater amount of water to develop a liquid, pumpable fermented mass which is added to the dough side after 2 to 6-hours of fermentation time under highly controlled conditions.

The "old or fermented dough" provides some dough conditioning to make the dough easier to handle, shape/form while also imparting a desired fermentation flavor to the finished product be it bread, rolls, pizza crust, pita, etc.

When the amount or age of the fermented dough is not controlled there can be significant differences in the way the dough handles as well as differences in the finished crust flavor profile and possibly even the crust color characteristics due to the acidity in the fermented dough.

The book Baking Science and Technology by E.J. Pyler has a very thorough description of all the different dough making processes in commercial use.

General Pizza Making / Re: Old dough in new?

In reviewing your pre-ferment aka sponge in this case, your water is fine at 56% but the IDY is rather high at 1% which is about twice of what it should be for a 4-hour sponge based on a typical sponge temperature of 75F and fermented at room temperature. The salt is also high at 2% as it would be better at 1% (0.25-ounce). Perhaps you are adding the extra salt to control the rate of fermentation from the high yeast level?

As for the sugar level, your finished crust has a decidedly sweet taste. If you are familiar with Papa Murphy's (take and bake pizza chain) their crust is also decidedly sweet as it contains an estimated 5% sugar, just like yours, but their pizza is designed to be baked in a home oven at 425F for nearly 20-minutes. In your oven, baking at 525F your baking time must be pretty short, at around

3-minutes I would guess which is robbing the pizza of potential crispiness, additionally, the residual sugar is concentrated in the crust where it draws moisture from the surrounding air as it cools thus changing the crust to a more soft, limp crust as opposed to a crispy one (if that is what you are looking for), and as Peter noted, 5% oil is high for a New York style pizza. I'd suggest cutting the oil amount in half.

One question that just begs to be asked is why are you freezing the dough balls (if that is indeed what you are doing) when you are using them on the very next day. It would make a lot more sense to manage the dough for an over night cold ferment in the cooler. You will get better finished crust flavor, the dough will open easier too, just curious?

Dough Clinic / Re: Is my NY Style dough formula ok ?

You say "freezer" but do you mean refrigerator/cooler/retarder?

Dough Clinic / Re: Is my NY Style dough formula ok ?

Par-baked pizza shells can be frozen for up to about 90-days if you eliminate any/all head space from the packaging to eliminate any freezer burn/desiccation of the shell(s). While there is some loss of flavor when you freeze any baked product it really isn't as much of a problem with pizza as it is with other par-baked products due to the other flavors present during the final baking/recon which permeate the shell giving it a boost in flavor.

Textural differences between frozen and fresh are the greatest difference. Because the shell goes through the critical temperature range for staling (+20 to +50F) twice ,once during freezing and once during thawing the impact can be significant BUT the good news is that the textural difference is one of increased firmness (like stale bread) BUT (lots of buts here) the reheating process temporarily reverses this characteristic so if the pizza is consumed while still hot I seriously doubt that anyone would recognize that the pizza was made using a frozen par-baked shell, however after cooling the crust will be perceived as being firm (crispier?) but dry also. One of the big chains tried doing this a number of years ago but soon discovered that college students eat a lot of cold pizza for breakfast and that cold pizza with a firm, dry crust wasn't all that popular. Oops! They ended up going with refrigerated dough balls like everyone else. Remember this experience, I developed a formula change requiring the addition of Ticaloid Lite, a gum blend from Tic Gum Company, Belcamp, MD to give the par-baked shells a higher moisture content but when baked for the second time as a dressed pizza the moisture content of the crust approximated that of a crust that was baked from fresh dough...pretty slick! It worked very well, so well that one of the big box chains had me go to their product development facility to demonstrate it. How did it fare? Their in-house sensory panel rated it above their regular, made from fresh dough crust. Why isn't it being used today? Because no one wants it to be said that they use a par-baked crust/shell that was made two or more months ago. Fresh is the name of the game that the big boys play. But back on point, par-baked and frozen shells should work just fine if the pizzas will be consumed hot, reasonably hot or reheated. I personally think that par-baked deep-dish crusts are hard to beat. By the way, rather than pressing those bubbles down after the par-bakes come out of the oven just invert the shells onto a screen or cooling rack for a minute or so, then place onto a pizza screen and place in the freezer for freezing, it will take about 2-hours for a thick crust or about an hour for a thin/thinner crust. You should make an attempt to freeze the crusts on the screen until the internal temperature of the crust reaches +15F, they can then be individually wrapped for frozen storage.

Newbie Topics / Re: Par baked/frozen skins

Peter nailed it with all the right questions :)

It might also help to know how you slack-out/thaw the dough and how you manage it after slacking it out.

Dough Clinic / Re: Is my NY Style dough formula ok ?

Carl;

Thank you.

I feel blessed to have had the opportunity to begin working with pizza in the early 1960's when pizzas were primarily sold by independent pizzerias and the box chains were either on the cusp of growing or were not even incorporated yet. Frozen pizza was a rare thing but Chef Boyardee? Pizza in a box, as bad as it was still made a big hit with families across the country. I had the golden opportunity to consult with all of the big box chains and a whole lot of the frozen pizza guys but my greatest joy came from my work to unravel the technology behind the making of pizza dough and sauce, then came several years of research on the freezing of pizza (the frozen pizza industry was growing at an astronomical pace and they had questions and problems in need of solutions). Once the chaos began to subside I focused my research efforts to the growing pains being experienced by the independent operators and looked for solutions to their issues such as bubbles, gum line, dough mixing, effective dough management, how different dough forming methods affect the crust characteristics, the list goes on and on. Once I had found the solutions to these and many other questions and problems I needed a soap box to stand on from which I could disseminate that information to those needing it. Along came Pizza Expo, Pizza Today Magazine, PMQ Magazine, PMQ Pizza Shows, PMQ Pizza Cruises :), as well as the AIB Technical Bulletin Series on pizza related topics and the AIB Annual Pizza Seminar which has become the longest continuously offered seminar ever offered by the AIB. I initially wrote the course context and was the primary instructor (more than 35-years ago) and then enlisted Jeff Zeak an energetic lab assistant to work with me in all things related to pizza, together we continued to research all the nooks and crannies of pizza at all scales of operation. Two years ago there was a mass exodus of senior talent from the AIB, A couple of us retired, others took positions in other segments of the food industry and Jeff went on to claim his new found fame with the Reiser Corporation where he is now the Manager of National Development, Bakery Division. I mention this because Jeff, like me still continues to work with pizza but in his case he brings his years of pizza talent to using the Reiser Veemag Screw type divider to large wholesale pizza manufacturers and commissaries where they need to divide thousands of pounds of dough per hour into very precise weight pieces (+/- 1.5-grams per piece). And yes, the AIB does continue to offer the pizza seminar <www.aibonline.org> but don't ask me anything about it as I no longer contribute or participate in it.

That, combined with years of domestic and international consulting is where one gets sufficiently educated in pizza and the like to know that just around every corner there is yet another unsolved problem or unanswered question just waiting for a little research time to find that elusive answer.

This is why I have so much respect for everyone here at Pizza Making.Com who takes the time to gain a true understanding of what it takes to produce pizzas in a home environment. It doesn't come fast, and it sure doesn't come easy but the personal satisfaction of knowing that you have done the work and have a new found knowledge is worth every minute of the time spent.....BUT it doesn't add up to a "hill of beans" if that knowledge is not shared (not a problem here at PMC). I used to tell my students that "knowledge gained but not shared is not knowledge

at all, it's just a bunch of memorized words".

And then there was the time that I liquified 750-pounds of pizza dough, a lesson in starch damaged flour.....I'll share that one another time.

New York Style / Re: All Trumps gluten development at home can't be done?

Carl;

Have you ever wondered why high gluten/high protein flour is synonymous with "pizza" flour? Was it used to make pizzas in Italy 200-years ago so that's why we use it today? No. Flour was pretty weak back then and pretty much of unknown strength but one thing was is sure, the wheat breeders back then were not developing varieties of wheat high in protein content just for making pizza. Wheat breeders? What wheat breeders? The use of high protein flour came about when pizzerias began to open up in North America. The pretty well accepted method of making pizzas back then was to mix the dough (temperature control? what temperature control?) and allow it to bulk ferment for several hours until the pizzeria was ready to open (typically 6 to 7:00 p.m.), a piece of dough was pinched off from the bulk dough piece and formed, using a dough sheeter (for the most part the operators didn't know how to open dough by hand) into the pizza skins which were made, dressed and baked to the order. As the fermentation progressed through the evening hours the dough became more and more fermented, to the point where it became over fermented and started getting sticky...time to close. Pizzerias were seldom open after mid-night for this reason. As operators complained of their problem to their flour suppliers (who were very well informed on flour back in those days) suggested a type of flour which had better fermentation tolerance....high protein flour. It worked much better than the flours they were previously using and it didn't take long before the flour suppliers were recommending it to other pizzerias....pizza flour was born! Then came the big box chains with their own concept of dough management allowing the dough to be much more consistent over a much longer period of time. This concept allowed for the management of fermentation to avoid over fermentation of the dough. The procedure was quite similar to the one which I put together a number of years ago. Call it "modern" dough management if you want. I just call it effective dough management. This method of dough management didn't need the high protein flour to provide a quality pizza, it only required flour with a protein in the 12% range which is where we still are today when the dough is managed in such a way so as to control fermentation. Today we don't have just cake flour, pastry flour, cookie flour, biscuit flour, bread flour, hard roll flour, and pizza flour by name, instead there is a huge amount of cross over between the different flour types, for example, you can make pizza from any flour shown above with the exception of a chlorinated/high-ratio cake flour, so would the "real" pizza flour please step forward?

Just a bit of trivia.

New York Style / Re: All Trumps gluten development at home can't be done?

Butter flavored Crisco.

Thick Style / Re: Papa Murphy's-esque butter flavored oil for bottom of pan pizza?

With that little amount of use I'd probably clean it once a year just to control the build-up. There are any number of good chimney cleaning brushes available on the internet (Google: chimney cleaning brushes) While I don't have a wood fired pizza oven we do have a wood fired furnace that we use for several months every year during the winter and I clean it before each heating season with a brush kit that I

bought a number of years ago for about \$50.00. There are some more expensive and some a lot cheaper to choose from. It's a little messy but easy to do.

Hearth Ovens / Re: Chimney Sweep? How often?

QJ;

Actually, when you're hand kneading the dough it doesn't make nearly as much difference as mixing in a mechanical mixer does. All of the things mentioned can/will impact the way the pizza retains its crisp after baking, additionally what the pizza is placed on can have a significant impact. If it is placed on a flat surface it allows for the steam/moisture to be forced back into the crust rather than escape. The best surface to place the pizza on is some type of elevated rack that holds the pizza up off of any surface and allows for air ventilation on the underside (bottom) of the pizza. Even the amount of sugar used in the dough formula will impact the way the pizza retains its crisp. In this regard, the crispiest pizzas will be made without any added sugar and baked for the longest possible time without excessively drying the toppings. While on the topic of baking if your oven is an electric oven we have found that we cannot achieve the same level of crispiness in an electric oven as a gas fired oven.

Dough Clinic / Re: Pizza too soft after baking, hand stretch issue.

Alvin;

With the growing popularity of the Chipolte system concept a lot of people are now getting into pressing their dough and there have been a multitude of questions of how to do it and how to address the dough snap-back/memory problems experienced with the use of a hot press. While it was still fresh in my mind I thought it to be a good time to write an article on it. If you pick it up you might keep it as a reference.

I've also written some other articles on pressing pizza dough, if you can dig them out from the PMQ and Pizza Today archives they might provide interesting reading.

Dough Clinic / Re: Thin crust pizza dough for dough press

Peter;

In the closing years of the great pizza wars (1987 to 1990) the frozen pizzas were so bad that nobody even thought of them as "pizzas" instead, they were considered to be a cheap and easy source of ready made crusts just begging for the addition of toppings. Tracking of consumer buying patterns showed that when frozen pizzas were purchased fresh vegetable produce was also purchased....gee, I can only speculate as to why? I helped develop the first really gourmet type pizza sold from the frozen food case for a fellow in Topeka, KS. Going off of my "Dough Doctor" he developed a television commercial with doctors wheeling a gurney into the operating room (filmed at St. Mont Veil Hospital in Topeka) and upon entering one of the doctors pulls the sheet back and announces "Why this is a Fellini's Pizza! It doesn't need to be doctored!" Corny, but it got the message out and for quite some time it was a top selling pizza throughout a good piece of the mid-west, then all of the big boys introduced their own versions, the cheap pizza wars were over and premium topped, premium priced pizzas were the order of the day. If anyone doesn't remember how bad those frozen pizzas were, they could not be legally shown to contain cheese, only "cheese product", no tomato either, only "tomato product". I'm not sure there was anything REAL in those pizzas, but they were pretty good once suitably "DOCTORED".

Pizza News / Re: 5 Chefs on How They'd Doctor Up Frozen Pizza

Alvin;

Base on your question I just finished writing and submitting an article on dough presses for Pizza Today Magazine. It will probably appear in the issue following the one coming up.

Dough Clinic / Re: Thin crust pizza dough for dough press

Alvin;

Break out your calculator.

Enter the amount of flour you want to use in the dough.

Enter the ingredient percentage you want to find the weight for.

Press the "%" key.

Read the ingredient weight in the display window. Remember that the ingredient weight will be given in the same weight units that the flour weight was shown in (pounds, ounces, grams, kilograms, etc.)

Example:

You want to use 40# of flour . 40-pounds = 100% (flour weight ALWAYS equals 100% regardless of the amount)

Salt: 1.75% (enter 40 X 1.75 (press the "%" key) and read the salt weight in the display window. 0.7-pounds or 0.7 X 16 = 11.2-ounces.

Repeat this for each ingredient percentage and you will have your formula correctly sized for your flour weight.

Dough Clinic / Re: Thin crust pizza dough for dough press

Mobo2;

During those four hours that the dough was out of the fridge it most likely began to ferment to some extent, when you put it back into the fridge I'm betting that it did not cool back down sufficiently to arrest/slow fermentation to a manageable rate for at least a full day, so it appears that the dough might have been still actively fermenting when you removed it to make a pizza. You said the dough was "saggy" or excessively soft which would be one of the characteristics of an over fermented dough which due to the action of enzymes contained within the yeast, and the degrading effect of fermentation acids on the flour/wheat proteins becomes excessively soft, sticky and generally just difficult to handle or form into pizza skins. A lot would also depend upon the temperature of the dough when you placed it in the fridge. Under most conditions a good temperature would be 70 to 75F or 21 to 24C with 80F/26C being the maximum recommended dough temperature.

Newbie Topics / Re: Pizza dough fermentation

A numbe of years ago there were a lot of postings on pizza trailers through Paul Nyland/Pizza Paul and Ottis Gunn/Pizza Wheel. Their trailers both incorporated the smaller (30" +/-) air impingement ovens with good success.

Shop Talk / Re: Mobile Business Growing

Alvin;

Sure, put water in mixing bowl followed by salt and sugar (if used) then add flour and remainder of dry ingredients on top of the flour. Mix for approximately 2-minutes at low speed of JUST until you don't see any dry flour in the bowl then while still mixing at low speed pour in the oil and mix for 1-minute, then mix at medium speed for about 6-minutes or just until the dough takes on a smooth, satiny appearance, immediately take to the bench for scaling and balling. Don't forget to cross-stack and down-stack. With the reducing agent in the dough you will have a mess the following morning if you don't.

P.S. I forgot the dough absorption in my dough formula: It should be 63% (variable).

[**Dough Clinic / Re: Thin crust pizza dough for dough press**](#)

Alvin;

Here is a dough formula with over 25-years of success in making thin crust pizzas using a hot press like the Dough-Pro or Summerset press.

Flour: 10.8 to 11.2% protein content (General Mills King Wheat is a good example)

Salt: 1.75%

Sugar: 2% (optional) For the crispiest crust omit the sugar.

Yeast: 0.4% IDY

Reducing agent: PZ-44 (1 to 2%) or dead yeast (RS-190) 2% (adjust as necessary to provide an extensible dough ball with good pressing properties.

Olive oil: 2.5%

Use the delayed oil addition method for mixing the dough.

Target finished dough temperature: 80 to 85F

Dough management: 24 to 48-hours cold fermentation.

Remove dough from cooler 2-hours prior to pressing (be sure to keep box covered at all times)

Set head temperature at 250F and use a 7-second dwell time.

Use your preferred scaling weight or 9 to 10-ounces for a 12-inch crust.

Be sure to oil the platen for the first press, after that the oil on the dough balls should suffice.

Dock the dough skin, dress and bake.

Once you begin using the dough balls they will remain good to use for about 2-hours. Any unused dough balls that are not opened for pizzas within this period of time should be opened, placed on screens and stored in a wire tree rack in the cooler. Leave rack uncovered for 30-minutes then cover to prevent drying. To use, remove from cooler, allow to warm at room temperature for 20 to 30-minutes, dock, dress and bake.

If you need a dough management procedure I have a good one posted here.

[**Dough Clinic / Re: Thin crust pizza dough for dough press**](#)

A good way to clean the bowl at the end of the day is to put a gallon of VERY HOT water into the bowl and cover with a sheet of plastic then let it steam for a while, then scrub using a plastic bristly pot brush. If your bowl has a drain plug (something that I've been an advocate for for years now) pull the plug to drain and rinse with hot water then finish with a sanitizer. If the bowl doesn't have a drain plug you will need to sponge out the hot (now much cooler) water and dough debris, then rinse using as little water as possible, sponge out and follow by the sanitizer rinse. For cutting the dough out of the bowl be sure to pour a small amount of oil down the inside of the bowl during the last 15-seconds of mixing, if you're not already doing this you'll see what I mean when I say that it makes it much easier.

[**Prep Equipment / Re: Spiral Mixer - Mecnosud 44kg 240v single phase review**](#)

I wrote an article on the different types of dough mixers a short time back and you are absolutely right, they're second to none for mixing dough, plus the fact that they will effectively mix doughs that are as small as 25% of the rated bowl capacity to as large as 110% of bowl capacity. The only cautionary note regarding single speed mixers is that there are some out there where that single speed is 'HIGH'. The speed is so high that it flings ingredients out of the bowl until the dough becomes sufficiently adhesive to remain in the bowl. Add to that the fact that when using a

spiral mixer you may never get the chance to meet your mixer repair man :(. Good choice, I'm sure you will continue to be happy with it.

Prep Equipment / Re: Spiral Mixer - Mecnosud 44kg 240v single phase review

Sure looks like it. Now all you need to do is to season the steel to seal it and you're good to go. While you don't really need to season it if you are going to bake only pan style pizzas on it, it will need to be seasoned if you will bake pizzas directly on it. The seasoning process will effectively seal the baking steel thus preventing any further rust development as long as you keep it out of the water (NEVER WASH A SEASONED PAN OR BAKING STEEL IF AT ALL POSSIBLE, and the seasoning will greatly help with the release of the pizza from the steel).

Stones/tiles/steel, Pans & Accessories / Re: Is this steel usable?

What I see in the close-up photographs appears to be tearing which is most likely due to insufficient dough absorption. I would recommend increasing the dough absorption by at least 5% of the flour weight. This will provide a softer dough that is easier to open and one which will not tear as easily during opening. If you see an improvement with a 5% increase in dough absorption fine tune the absorption to get the best handling properties for your dough.

Please keep me posted on your progress.

Newbie Topics / Re: my dough ball skin is dry , please help.

Yup, see above response where I gave an example of General Mills All Trumps flour. This is the flour that is popular in N.Y. but any other high protein flour will work as well.

Dough Clinic / Re: Brick oven vs NY style pizza Doughs

I've got a great pizza clock hanging here on my office wall. If you Google "PIZZA CLOCK" you can get one for yourself.

We also have several Christmas tree ornaments shaped like pizzas too, pretty neat.

Chitchat / Re: Pizza themed bric-a-brac and knickknacks

Remember, you are using the rolling pin to open the dough to ONLY 2/3 to 3/4 of the full diameter. Doing this does not "squish" the dough at all, what it does is allow you to fully open the dough without that annoying thin center that is a common problem with novices. I've been teaching this method for a number of years now and all I can say about it is that I can have a total novice opening quality skins (without a thin center) within 15-minutes, I've done so many times when training college students to work in a pizzeria. I've got a video of this being done in a pizzeria. If you would like to see the video just send me an e-mail at <thedoughdoctor@hotmail.com> and I'll be glad to send it to you.

Neapolitan Style / Re: Dough Handling

You bet, here's a pretty good one to start with.

Flour: high protein 13 to 14.2%. (All Trumps) 100%

Salt: 2%

Olive oil: 1% (while not traditional I still like to use it to help control moisture migration from the sauce into the crust)

IDY: 0.3%

Water: 68%

Dough Clinic / Re: Brick oven vs NY style pizza Doughs

Your dough has the same problem when using a sourdough starter or biga and 1% compressed yeast even when fermented for 24-hours at 18C/64F. Correct me if that is wrong.

For a dough with 1% compressed yeast that is a lot of fermentation so I am wondering if the problem isn't just one of over fermentation. As a first course of action I would suggest reducing the compressed yeast to only 0.25% (one fourth of what you are presently adding). By any chance are you re-ball the dough after the 24-hour fermentation period? If you are how long do you allow the dough ball(s) to rest before attempting to open them into skins? I would think that anything less than about 2-hours would contribute to this type of problem too.

Dough Clinic / Re: Autolysis through fridge and Ph

Any oxygen exposure in that case would only be on the outer surface where as the far greater part of the dough is contained within that outer skin, additionally a huge amount of air is incorporated into the dough during the mixing process, work that was done many years ago shows that what we see as bubbles aka cell structure is actually formed by a nuclei of air cells entrapped within the dough during mixing. Each cell is lined with yeast cells which during the feeding process (fermentation) produce carbon dioxide, alcohol and acids which are then contained within each of those nuclei, as more fermentation takes place the pressure within each nuclei increases to form a larger size hole/bubble/ nuclei/crumb structure, then when the dough goes into the oven the dough is heated, causing the gas within the cells to expand (Boyles Law) forming even larger holes/crumb structure, as this expansion is taking place the dough actually grows in size which is what we call oven spring.

I'm guessing that the underlying truth as to why the dough boxes are left open is to allow for ventilation (remember the dough is continuing to heat up) and also to reduce the humidity build up within the dough boxes which can result in wet or tacky feeling dough when you go to open it into skins. Try making some dough and tightly cover/seal the dough box(es) and I bet you will see dough that is wet or sticky and if allowed to go the full distance it might even blow or at least grow to the point where it is difficult to remove from the box or even handle.

If you want to read more about yeast fermentation I would encourage you to read Baking Science and Technology by E.J. Pyler, it might be available at your local library or you can buy it on-line. This book is considered the "bible" for college students taking a baking science class.

Shop Talk / Re: Temperature and humidity

All I can say regarding humidity is that when I was in Dhahran, Saudi Arabia (humidity in the single digits) we really didn't have a problem with any of our dough drying out. The dough absorption was indeed increased by roughly 2% but not because of moisture evaporation from the dough but instead from the lower moisture content flour that we were receiving (it averaged just over 11% as opposed to 13 to 14% here in the states where we get fresh flour from the mill, all of our flour there came from the states too but it came to us in those large land/sea cargo boxes...wanna guess how hot it got once in country with an average day time temperature of 117F?) We did store the flour inside under air conditioning but it still sat in those containers outside with a sun shade only for several days until we rotated it into our at hand inventory. Why didn't the dough dry out under those conditions? because we kept it covered with a large sheet of plastic at all times. Additionally, in Quito, Ecuador (elevation over 10,000-feet) we did the same thing without any problems at all. Baking at high altitude brings with it a whole different

set of challenges of which low humidity is the easiest to address.

I realize that there are a lot of pizzerias not controlling their dough management and as long as their customers are OK with the pizzas they get, and they are successful as a pizzeria one can't say that they that they are doing anything wrong for where they are at. I remember in Chicago when the first wood fired oven pizzeria opened. They got off to a really bad start as the customers were all sending the pizzas back because they were "burnt" in their view. It took a little education to correct the problem and now all is good. It's just the customer expectations that you have to meet to be successful, if that's consistency or inconsistency or type of bake is a matter to be decided by the customers.

Shop Talk / Re: Temperature and humidity

Actually, most people don't particularly like a "yeast" flavor which is probably best described as that of old, wet newspapers :(

The flavors that most people describe as yeasty are actually those flavors derived from fermentation of the dough which intensify as the dough is allowed to ferment for longer periods of time. However, everyone may not like the flavor of fermentation so that would explain your personal preference for a dough with little or less fermentation. It's the same story with sourdough, some love it, some hate it, just a personal preference. The best thing about making pizzas for yourself is that you can make it the way YOU like it.

Newbie Topics / Re: My 48 hour emergency dough is flavorless, WTH?

Are you saying that the dough is too elastic and difficult to stretch?

Dough Clinic / Re: Autolysis through fridge and Ph

JH:

Nope, can't think of any way. There is a product called Through Dough used to practice tossing/spinning the dough but that's totally different from opening the dough balls into skins.

The method that I like to teach for opening the dough by hand goes like this. Use a rolling pin or pie pin to open the dough ball to about 2/3 of the finished diameter.

With the partially opened dough on a lightly floured surface hand stretch the dough (keep your hands/fingers about 1/4-inch away from the edge if you want a raised edge) to full diameter.

I have a video showing this procedure at the PMQ web site <www.pmq.com> or you can also view it at my web site <www.doughdoctor.com> look for the link How To Make Pizza Dough (Part 3). In this video we are using a dough sheeter to pre-open the dough ball but you can accomplish the exact same thing using a rolling or pie pin.

With time as you get better at handling the dough you will probably find that you can do the entire procedure without the sheeter/rolling pi/pie pin.

Neapolitan Style / Re: Dough Handling

Harry:

Humidity has little to no impact at the commercial level, neither does temperature as long an effective dough management procedure is in place which means that the temperature of the water added to the dough will be adjusted to provide the target finished dough temperature on a consistent basis. Granted, if the dough management procedure is one which calls for the dough to set out at room temperature for a couple of hours before scaling and balling one can expect to experience significant impacts to both dough and finished crust quality

characteristics as a result of wide swings in room temperature BUT again, with effective dough management procedures in place it doesn't have to happen that way. How would effective dough management change the outcome? If one were to develop a quick reference chart showing the correct water temperature to use (it may include ice) based on the room temperature to give a finished dough temperature at the target temperature around which your dough management procedure was developed the impact would be minimal. But doesn't a large dough heat up when allowed to remain at room temperature? Very little. The surface of the dough will warm but the dough is such a good insulator that anything much below 1/2-inch beneath the surface will only be controlled by the actual dough temperature as it came off of the mixer and by the heat of fermentation created as the yeast metabolizes nutrient (this warms the dough at a rate of approximately 1F per hour). Even the largest bread bakeries have discovered this since they no longer use fermentation rooms (temperature and humidity controlled rooms) to ferment their doughs in, instead they just leave the doughs/sponges in the dough troughs and loosely cover to eliminate drafts which might dry the dough creating a crust, the doughs/sponges ferment at a very predictable rate because of the great efforts made to achieve a consistent finished dough temperature at the mixer which is within the target temperature range. Again, it's that nasty word "temperature", that's 50% of the key to achieving effective dough management, the other half is time. This simply means that if you want to get consistent dough with predictable handling properties and a consistent quality finished product time also has to be managed, this means if we leave dough balls at room temperature while they are being opened into skins there has to be a limit on the time (typically 2 to 3-hours with good dough management), if you are making deep-dish pizzas you have to control the length of time that the dough is allowed to proof/rise in the pan or you will end up with variations in crust characteristics and thickness. You don't need to look any further than the big box chains to see effective dough management procedures in action, Domino's and Papa Johns are possibly the most visible chains that practice effective dough management to provide a consistent quality dough from their many commissaries to their stores nation wide while all the time providing dough that performs very predictably so every store can follow a single operations manual and produce a consistent quality pizza to their customers. Once you enter into the commercial side of the business consistency is the "name of the game". But we make the best pizza ever! Not if you can't make it consistently so each one of your customers can enjoy the same experience. The big box chains do not make the best pizza, but they do provide their customers with the confidence that every time they go into one of their stores they will know what they will get....like it or not. We like to refer to this as the "McDonalds philosophy" they don't make the best hamburger (they will admit to that) but regardless of where you are (in the world) you know what to expect even before walking through the doors. Consistency, consistency, consistency....they spend millions of dollars every year working to improve it.

I relinquish my soap box.

Shop Talk / Re: Temperature and humidity

The pictured skin looks pretty good and it appears to have a nice dry surface without excessive adhesion of dusting flour. When you say the skin was dry do you mean the dough ball was dry and crusty or did the skin dry out and develop a crust?

Newbie Topics / Re: my dough ball skin is dry , please help.

Brad;

You might be on to something there, even when looking at the photograph with the pizza wheel next to the pizza, the wheel looks to have a 2.5 or 2.75" wheel and the pizza appears to be about 3-wheels wide, making the diameter closer to 7" than 11". If the pizza is indeed a 7" pizza 100-grams of dough would be a better dough weight to use than 200-grams.

Dough Clinic / Re: Dense pizza dough- need help! How to make lighter and more airy pizza?

Norma;

We got them from a local manufacturer, when my client contacted them he simply said that we needed an oil proof paper sleeve like McDonalds used to use on their fried pies. You could also just wrap them in a small square shaped piece of low cost parchment paper, like you can buy on a roll at the supermarket. I've not tried baking them from frozen but it would be interesting to try it. If you had a covered metal container (deep-dish pan w/lid?) you might try freezing a par-baked one too and then placing it in the closed metal container with the lid on to bake for the first 7 to 10-minutes? This would allow the filling to heat up, then remove the lid to finish baking (Humm, aluminum sheet pan with a heavy duty foil cover might work very well). Place into sleeves and hold in a heated cabinet or under heat lamps as we did. The don't need to be crispy to be good.

General Pizza Making / Re: Breakfast Calzone

I would say let's stay with those changes for now and wait until you can bake on a stone or piece of steel. The pictures that you attached shows a very under baked pizza which the stone should help correct.

Brad also brought up a good point in observing that 220-grams is a bit light for the size pizza you are making (11-inch), you might want to use 250-grams of dough weight when making your next pizza.

Be sure to send us pictures again, they really help.

Dough Clinic / Re: Dense pizza dough- need help! How to make lighter and more airy pizza?

P.M.

This is an idea that I have been promoting for a number of years now to pizzerias. Several years ago I worked with a fellow in a pizzeria in Newark, N.J., his store was right across from a train station and there was a lot of early morning foot traffic but he wasn't open until 11:00 a.m. or so. We introduced a breakfast calzone much like you are making only we baked it, put it in paper sleeves and held them under the heat lamps for sale. We bundled it with a cup of coffee, turned the lights on at 7:00 a.m. and sold the heck out of them. We used retort package eggs (these are the scrambled eggs you see at the Holiday Inn Express breakfast buffet), we cooked (actually reheated Jimmy Dean breakfast links) which we chopped into pieces, then added bacon bits, mushrooms, onion, hash browns, fresh tomato and a little cheddar cheese. In other countries variants of this are known as Empanadas or Patty Pies. When I was in Caracas, VZ I used to get one with a cup of coffee every morning for breakfast from a street vendor just outside of my hotel. If hamburger places can do a breakfast there is no reason why a pizzeria or enterprising entrepreneur couldn't do it too.

I agree with you, THEY ARE VERY GOOD! :)

General Pizza Making / Re: Breakfast Calzone

Craig:

Good point about the "rounding" issue, I completely forgot about that. Another thing to keep in mind regarding flour is that we are in a state of flux regarding flour as consumers are demanding more "natural", "organic" and "GMO free" foods we are beginning to see more of the flours taking this path too (mostly as an option) and this is where have to be very careful and begin reading labels to make sure we are getting the type of flour that we really want to have.

Dough Ingredients / Re: Ideal Flour Protein Content and Favorite Flours

In the U.S. total protein has always been the standard for comparing different flours due to the fact that essentially all of the hard wheat varieties released for planting have very good gluten forming properties. In Europe where that is not always the case wet or dry gluten (dry being the more accurate) is a preferred method. By this method the Glutomatic instrument (Perten Instruments) is used to develop the gluten in a specified amount of flour and purify the gluten by washing out the starch (this is the "wet" gluten weight), the resulting gluten ball can then be dried to achieve the "dry" gluten weight, where as in the U.S. we report "total" protein, not just the gluten forming proteins (glutenin and gliadin). Because we report total protein content the process of determining the total protein content of the flour can be done in a matter of seconds as opposed to roughly 90-minutes.

The high Falling Number value indicates that the flour is not malted.

The protein content (11.5%) indicates that this is most likely a winter wheat flour (it could have a small amount of spring wheat blended into the grist to attain the desired protein level reported) and it is representative of a very common, typical bread type flour.

I hope this has answered your questions.

Dough Clinic / Re: Wet and dry Gluten

The reason why pizzerias get bit in the butt by temperature changes is because they don't practice effective dough management. When the shop heats up or cools down the dough temperature changes (I'm betting they don't monitor the finished dough temperature of each and every dough) the temperature of the dough changes, sometimes with disastrous results (blown dough), at the very least the dough changes or the finished crust changes but because they are not monitoring the dough temperature they never see the impact of the warmer/cooler shop on the dough temperature which upsets their entire dough management process, the way they see it "We did nothing different". Many of those daily changes in the dough can be traced directly back to changes in the finished dough temperature which they are not controlling. I've written a number of articles on effective dough management in both PMQ and Pizza Today Magazine and I've got a procedure posted here providing an outline for effective dough management.

Shop Talk / Re: Temperature and humidity

When making pizza I just go by protein content of the flour. My "go to" protein content is between 12 and 12.8% protein, the one exception that I make is when making a New York style crust, then I look for flour in the 13.8 to 14.2% protein range. In home baking I personally don't see much difference in U.S. flour performance based on the brand so I just go by protein content. The one thing that you do need to be aware of is if the flour is malted or not. If you're like most of us and don't have access to an oven capable of temperatures in the 800 to 900F range you will probably need to add a small amount of sugar to a dough made with non-malted flour, ditto if you will be managing the dough for more than 24-hours. Yep, just divide the grams protein by the indicated serving size and multiply by 100 to calculate the protein content. If it is not indicated on the bag (it should be) you

can always go to the manufacturer's web site to find both the protein content and the treatment the flour might have received such as (bleached, bromated, malted, ADA, ascorbic acid, enriched).

Dough Ingredients / Re: Ideal Flour Protein Content and Favorite Flours

They only need to reach a "kill" temperature of 160/165F which is actually lower than a simmer, and the "cooking" time is pretty short as compared to using a non vacuum process.

Sauce Ingredients / Re: Why not cook sauce? Isn't it already cooked before being canned?

Actually, when the tomato processors concentrate their products they use a process called vacuum distillation, is short, they put the tomato in a vat, pull a vacuum on it and apply heat. Since water boils at a much lower temperature at low pressure (vacuum) not nearly as much heat is required to distill off the water necessary to bring the product up to a predetermined solids content. The higher the solids content the thicker the product is. Normal sauce is around 12% solids while paste, if I remember correctly, is around 24% solids.

Sauce Ingredients / Re: Why not cook sauce? Isn't it already cooked before being canned?

Oops, Got Rocks reminded me of another method for cutting pizzas, not dough but the baked pizzas into slices...water jet. The same type of equipment that is used to cut out dashboards in the auto industry. Using high pressure water they can cut a pizza into as many slices as you might want with nary a crumb and absolutely no disruption to the toppings. I've seen ultrasonic cutters used too with good success for the same purpose.

Shop Talk / Re: I need some help from you all Pizza lovers

When the cheese seems to have a mind of its own and wants to part company with the rest of the pizza the problem is due to too much sauce.

Chicago Style / Re: Deep Dish

Why did you remove the dough from the refrigerator and then put it back in again?
How long was the dough out of the refrigerator before you put it back in?

Newbie Topics / Re: Pizza dough fermentation

If you are adding the olive oil for its flavor add it immediately after baking so the heat of the pizza releases those wonderful aromas.

Pizza Toppings / Re: Oil application

N.S.P.:

Not a problem, glad to help.

Newbie Topics / Re: How do you experts recommend seasoning an aluminum sicilian pan?

Your procedure looks good to me (no need to add sugar to the yeast suspension or cover it either if you add it to the dough within about 10-minutes of suspending it in the water. You mentioned something about the yeast making a paste, possibly you don't have enough water in the yeast suspension, it should pour almost like heavy cream, or even thinner than that, but not paste like). With everything that you have shared it is beginning to sound like the problem might be with the oven (not hot enough). Can you send any pictures of your baked pizza? If so please be

sure to cut a slice from the pizza and turn it upside down so we can see the bottom bake too.....a picture can be worth a thousand words.

Dough Clinic / Re: Dense pizza dough- need help! How to make lighter and more airy pizza?

1) I should have said that you only really need to season the inside of the pan only once and this is to ensure a satisfactory release from the pan, after that it will continue to season itself due to the oil used in the pan.

2) In home use you can use 500F as quoted but in commercial practice we never recommend going more than 430F as the flash point of most oils is between 435 and 440F. and when you are right in the middle of seasoning a bunch of pans in a pizzeria nothing adds to the excitement of the day like your oven catching on fire. Home seasoning where you are doing only a couple of pans at a time don't pose this issue.

3) You can use 20-minutes between seasoning applications but the last one should be left in the oven at least until the pan stops smoking or 20-minutes, which ever is longer. This is sometimes called the "curing" of the seasoning.

4) Season pan, remove from oven, cool for a minute or two, apply oil, place back into the oven, repeat at least several times.

5) Pan is ready to be put into use after a minimum of three oil applications.

6) When would one want to clean a seasoned pan in the normal manner? I can't figure out why a person might be moved to doing something like that but wanted to make sure you were on board with the advice. Now you can't say that you were not warned. Trust me, I've seen it done many times.

7) You can use olive oil if you insist but just plain old salad oil is cheaper and it polymerizes better for a faster seasoning build up.

8) As for putting dough into a seasoned pan for storage, if the pan is well oiled there is no real problem but if you don't use oil in the pan the moisture and acids in the dough can damage the seasoning over time. It is perfectly OK to open the dough and fit it into the oiled/greased pan, give it some proof and refrigerate it for use later in the day (again, remember, we have oil/grease in the pan).

Be very careful when removing the pizza from a seasoned pan as the use of a knife, or metal spatula will damage the seasoning. I personally use a decorating spatula with a soft, flexible blade with a rounded end as opposed to a square end which will dig into the seasoning thus scratching it. By the way, a deep-dish pan gripper is a blessing when depanning deep-dish pizzas.

Newbie Topics / Re: How do you experts recommend seasoning an aluminum sicilian pan?

M.R.;

I'm with you brother! :)

Sauce Ingredients / Re: My Pizza Sauce

Remember that "luke warm" might be too hot. Your finger is already at 98.6F so you are looking for a water temperature that is only 1.4F warmer than your finger. The yeast should begin to froth or bubble by the time you add it, if it isn't, the yeast might be suspect. A dark colored baking tray is good because it absorbs heat during baking as opposed to reflecting it as a bright colored pan/tray would. Your dough formulation looks OK but there is a discrepancy between the "recipe" and the formula shown in bakers percent as the sugar is not shown in the formula. Just need to confirm that it has indeed been added.

At some point you might want to look into getting a dial/stem type thermometer for measuring the water and finished dough temperature (important aspects of

effective dough management as well as a small oven thermometer to confirm your oven temperature. I've always said that thermostats are about as good as a sun dial on a cloudy day.

So, it looks like we now need to look at how you are managing the dough, this is everything you do with the dough from the time it is mixed until when you finally open the dough ball(s) into skins. One last thing, I see you are using a 200-gram dough ball weight, what size pizza are you making from this? How do you open the dough into a pizza skin (by hand or do you use a rolling/pie pin)?

Dough Clinic / Re: Dense pizza dough- need help! How to make lighter and more airy pizza?

Wipe a thin layer of oil on the OUTSIDE of the pan, place in the oven for at least 20-minutes, repeat several times until you begin to see the development of a nice golden color on the pan then leave it in the oven until there is no more smoke. As you continue to use the pan it will continue to darken to an almost black color which is a thing to be cherished. NEVER, NEVER, EVER wash a seasoned pan in the normal manner, instead, just wipe it out with a clean towel and put it away. If you find that you absolutely must wash it here is how you do it:

- 1) Grasp pan in hand.
- 2) Dip into hot soapy water.
- 3) Clean pan using a soft, plastic bristly brush by LIGHTLY scrubbing.
- 4) Rinse in clear, hot water.
- 5) If you are a commercial establishment dip in a sanitizing solution, if not go directly to #6.
- 6) Wipe the pan dry using a clean dry towel.
- 7) Invert the pan and place it in a hot oven to dry thoroughly (10-minutes).
- 8) Remove from oven and allow to cool at room temperature until the pan can be safely handled before putting it away.

NOTE: At NO time should you ever release the pan from your grasp until you reach step #7.

Failure to follow this procedure can result in the seasoning coming off like a bad sunburn, then you will need to strip all of the old finish off of the pan(s) and start all over again, and oh, by the way, if you have to do that be advised that your pizzas will bake differently until you once again achieve the desired dark coloring to the pan.

This applies only to bright colored pans which are seasoned. Black colored anodized pans do not need any further seasoning (the black anodizing replicates the seasoning) because of this they can be washed in a more typical manner, they can even be soaked in soapy water BUT I do not recommend this practice as it can, under the right conditions, allow for alkali damage to the base aluminum, or if it is a steel pan it can result in the development of rust. It is still an excellent idea to force dry the dark colored anodized pans by placing them in a hot oven until they are too hot to touch, then remove, cool and put away for the next use.

I hope this helps,

Newbie Topics / Re: How do you experts recommend seasoning an aluminum sicilian pan?

Flour (strong bread flour) 100%

Salt: 2%

Sugar: 1.5% (depending upon what type of pizza you are making sugar amount will be variable, for a thin crispy or cracker type crust delete the sugar)

IDY:0.3% or ADY: 0.4% or CY: 0.75% (Regardless of yeast type used suspend in 95 to 100F water for 10-minutes before addition to the dough)

Water: 55% 80F (Variable with the type of pizza you are making, 50 to 55% for thin cracker or crispy, 60 to 65% for most other types)

Oil: 2% (variable) Delete for most N.Y. style crusts, otherwise 2% won't get you into too much trouble with other styles of crusts)

Procedure:

Put water in bowl/tub first, then add the yeast suspension, salt, sugar (if used) and the flour. Knead until a dough begins to form then add the oil slowly as you knead the dough. Knead the dough until it begins to get elastic then oil the tub and place the dough back into the tub, lightly oil the top of the dough ball, cover with a sheet of plastic and allow to ferment for 3 to 4-hours, punch down as necessary, turn the dough out of the tub and knead again until smooth, allow to ferment again for 90-minutes, turn out of the tub, scale and round into dough balls, lightly oil each dough ball and place into individual plastic bags, store in the refrigerator overnight, the dough balls will be ready to use on the following day. OR if you want to use on the same day allow the bagged dough balls to ferment for 1.5 to 2-hours before opening into skins. The only down side to the last method is that all of the dough balls must be used within a fairly short period of time while the refrigerated dough balls will keep longer out of the fridge without over proofing. A lot will depend upon how you plan to handle/manage the dough at the event.

New Forum Members / Re: bus tub dough?

F.P.:

I fail to see the problem with your pizza :), that's a very decent looking pizza. If the bubbles are a problem prior to baking it might stem from an over fermented dough condition, you can test this by shaping the dough ball after only two hours after balling rather than three, if you see improvement fine tune the time, but if the problem is worse in the oven (it doesn't sound like it is) it might be from placing the top of the pizza too close to the heat source.

Dough Clinic / Re: Weak Gluten Development?

What kind of yeast are you using? Do you pre-activate the yeast before adding it to the dough? If you pre-activate it what temperature water do you use?

What are you baking your pizzas on (pan, disk, screen)? What color is it (bright or dark colored)?

What baking time have you been using?

The answers to these questions can help us in solving your problem.

Dough Clinic / Re: Dense pizza dough- need help! How to make lighter and more airy pizza?

In addition to what the others have said, here's my two cents worth too; Call me overly technical if you want but here is how I looked at it as a Baking Technologist during my early years with AIB.

There is total "flour" absorption. This is not the absorption reported by the flour miller as that absorption value is based on only the amount of water needed to bring the dough to a fixed consistency (500 Brabender Unit line aka Farinograph Unit line). Peter did a very good job of explaining this) This absorption value allows one to compare two different flours with regard to how much water they might absorb to achieve a known dough consistency. Total flour absorption, on the other hand, is a reflection of the amount of water that a flour can carry before the addition of any more water will result in the dough becoming slacker/softer. The autolyse method is probably the best method for determining this as there are some things which impact the rate at which the flour will absorb water such as particle size and intrinsic characteristics of the wheat protein itself (this is the

only method that can be used with whole-wheat flour due to the much slower hydration rate of the bran particles). I like to think of total flour absorption as an absolute absorption for any particular flour.

Total "dough" absorption is different, this is the amount of water that must be added to a dough made with a specific flour to achieve certain desired dough rheology characteristics and/or finished crust characteristics. We see this all the time when comparing cracker or thin crispy type doughs as compared to a New York style of dough. Both can be made from the same dough formula but one has a lot more water in it to provide a different handling characteristic to the dough as well as a different finished crust characteristic. All large scale operations (bakeries and pizza commissaries) develop what is known as a Farinograph factor for their doughs which allows them to make total dough absorption adjustments based on the Farinograph data supplied with the flour. Here is how they do it: (EXAMPLE) The dough handles best and provides the desired finished crust characteristics with a total dough absorption of 57%, the flour used in making that dough had a reported Farinograph absorption value of 60.2%. Divide 57 by 60.2 to get the farinograph factor for that flour, using that formulation and dough management procedure = 0.9468. When the next flour shipment of flour is delivered they simply multiply 0.9468 X the Farinograph absorption value to find the dough absorption with that lot of flour. Due to variations in the wheat used in the grist (wheat blend used to make the flour) further adjustments (though usually small) may need to be made. After these adjustments are made a new Farinograph factor is calculated and the process is repeated with each new flour shipment. If the dough formulation, or dough management procedure is changed a new Farinograph factor will need to be calculated.

Newbie Topics / Re: Hydration Basics

Let's see, we already have the "rocker knife" and it variations, then we have "pizza wheels" aka pizza cutters in different sizes, there are cutting rings in just about any size one might ever find a reasonable use for, and then there is the slice cutter of which there are several variants, and then there is the old fall-back, the French knife aka chef's knife, and don't forget cutter pans.....What are we missing here that we can't live without?

Just curious????

Shop Talk / Re: I need some help from you all Pizza lovers

Clouddgn;

I'm glad you mentioned having a convection oven. With the airflow in a convection oven this might explain your comments about the toppings drying out excessively. I would suggest that you give thought to baking the pizza as directed but after the first ten minutes cover the pizza with a piece of aluminum foil to keep the convection air flow away from the top of the pizza, then uncover it for baking the top of the pizza for baking just long enough to achieve a decent top crust color. I would guess that the total baking time would be somewhat less than the 30-minutes I guessed at since we are baking in a convection oven. I'm guessing 22 to 25-minutes???

Let us know how it comes out.

Chicago Style / Re: Deep Dish

I don't think the weaker flour will do much except possibly make the crust more tender (cracks easily on folding) if he cannot use oil a shorter bake, all things equal, is the only other alternative that I know of.

Neapolitan Style / Re: How do I get a soft crust?

Clouddgn;

Your oven should work just fine as Chicago style deep-dish pizzas bake well at 450F.

Make it easy on yourself, make your own sauce, it's really easy to do and you might like it more than a prepared sauce. Start with very ripe tomatoes, six large tomatoes will get you started. Dip the tomatoes in boiling water for 15-seconds then immediately transfer to cold water and begin peeling the tomatoes. If you have a blender or food processor puree the tomatoes, if you don't just use your hands and break the tomatoes up into small pieces (don't worry about the chunks of tomato, they add a wonderful flavor). In a small plastic bowl put three cloves of minced garlic and about a tablespoon of minced onion and 1/2 cup of water. Using a microwave oven heat to a full boil (if you don't have a microwave just use your stove top burner BUT USE A METAL POT INSTEAD OF THE PLASTIC BOWL, as soon as it boils remove from heat to cool for 10-minutes. Add the boiled mixture to the pureed tomatoes flavor with dried or fresh oregano and/or basil, then add 1-tablespoon of olive oil, 2-tablespoons of sugar and stir well. You can use the sauce right away or store it in the fridge for use over the next 3-days (just be sure to stir it well before each use. You will want to use about 6-ounces of the sauce on a 12-inch diameter pizza.

The Oaxaca cheese should work OK, I've used it before but if you want a better flavor blend it with another cheese that has a stronger flavor. I can't say how much to use but if you start out with 12-ounces of the Oaxaca cheese and 4-ounces of the "other" cheese you should be able to bench mark the flavor and adjust the blend as necessary to suit your taste, this will make enough of the cheese blend for two pizzas. One other thing, you will need to experiment with which rack position to bake your pizzas on. I normally use a lower rack position for the first 10-minutes then move it to a higher rack position for the second 10-minutes, turning the pizza 180-degrees when doing so, after the second 10-minute period look at the pizza to determine if it needs more top or bottom heat (color) if the top is too light place the pizza back in the oven in an upper rack position, if the bottom of the crust needs more bake place it in a lower rack position for the last 10-minutes. Be sure to use a dark colored pan or a well seasoned pan. The total baking time should be around 30-minutes. If you find that the vegetable toppings are scorching at any time just place a piece of aluminum foil over the top of the pizza, do not crimp it on, just lay it over the top.

Chicago Style / Re: Deep Dish

Lloyd Pans <www.lloydpans.com> makes a pan designed specifically to do just what you are asking. Give Paul Tiffany a call at 509-486-8691 Ext. 117 or e-mail him at ptiffany@lloydpans.com.

Off-Topic Foods / Re: Reheating precooked chicken cutlets and wings

I was in Pittsburgh, PA a number of years ago and we were making a crust similar to what you are describing, it was so soft that the customers would roll it up (like a jelly roll) and eat it with a knife and fork. My thoughts were that it was about as firm as a wet dish towel. To your standard dough formulation add 4% olive oil, keeping the water up at 60 to 62%. Immediately after baking place the pizza onto bright silver coupe pan for about 1-minute prior to serving. Watch the baking time as you don't want to get the pizza anything more than a light tan/brown color.

Neapolitan Style / Re: How do I get a soft crust?

Carl:

Yes, extremely over fermented dough will go through a stage where it becomes very tight and elastic, almost impossible to do anything with, then as fermentation progresses it will begin to slacken as the gluten is further relaxed due to enzymatic (protease) activity as well as the degrading effect of the acids formed during fermentation on the protein/gluten. This will continue until the dough is completely broken down.

When a dough is first mixed it is tough and difficult to manipulate in any way except to form it into balls and we all know how "easy" that is. Then as fermentation progresses the dough slowly becomes softer and more extensible BUT if worked to any extent it quickly becomes objectionably elastic (we see this as snap-back/dough memory after opening into skins), as fermentation progresses the dough becomes more relaxed (easier to open) and exhibits less snap-back/memory once opened into skins (this is the fermentation "sweet spot" that many operators are looking for as it provides a sufficiently robust dough structure for supporting the weight of the ingredients as well as holding up to awaiting its turn to be opened up into skins (in a pizzeria this might be anything from minutes to as long as two or three hours). When the fermentation progresses beyond this point the dough begins to develop excessive elasticity (at least for a while) this is why when you re-ball the dough the dough balls get so tight that you have to wait quite some time before you can open them into skins. As fermentation progressed beyond this point the acids and enzymes begin to take their toll on the protein/gluten structure and the dough now becomes softer, more sticky, weaker and even re-balling won't do any good, the dough is now on its way to becoming something that looks more like a thick syrup than the "dough" that we're all familiar with.

Dough Clinic / Re: Hard to close dough ball after bulk CF?

Carl;

I'm betting that if you take a small piece of dough from each test dough and stretch it out in your fingers to ascertain gluten development, aka "window test", you will find both doughs with essentially the same gluten development after 24-hours due to biochemical gluten development. In one of my articles on dough mixing I commented that you should only mix a pizza dough just until it takes on a smooth, satiny appearance, if you regularly mix your dough longer than this you will probably get to know your mixer repair man on a first name basis.

General Pizza Making / Re: To mechanical mix or not??

Norma;

I cut mine in half using a metal cutting band saw but you could probably do it as well using a hand held grinder and a cut-off wheel. Depending upon how good the person doing the cutting is you might lose a row of cups as we did.

For something larger in diameter you might look at the Whopper pans but the cups will not be as deep as the 3-D pans that you have. You can also find round cake pans down to just about any diameter you want. I used to have them in 5", 6", 7" and 8" diameters, they'll be about 1" deep.

Other Types / Re: Re: Bo Pizza

Norma;

I'm wondering if those plastic forms are just a form into which the dough balls are placed to allow the dough to be rolled to a uniform thickness, the form would then be removed and the flattened dough pieces placed into the pan cups? You can achieve the same thing by running the dough balls through a sheeter twice with a 90 degree turn between each pass, or make a couple of gauge strips out of wood or

aluminum, lay on either side of several dough balls and using a rolling pin, roll the dough out to the desired thickness (which is determined by the thickness of the gauge strips).

Peter;

The only problem with using soy flour in the manner described is that it must be a full fat soy flour so along with any dough strengthening you will also get that wonderful raw soybean flavor imparted into the dough and finished crust (we used to refer to it as a "silage" flavor in the finished product). There was available for a time a product that was referred to as a lipase modified soy flour that was sold as an additive ingredient for its dough strengthening properties (I think it was marketed by the Bredco corporation), but it was never as effective as bromate at the time. When we see soy flour being widely used in bakery products this is a defatted soy flour (about 51% protein content) that was used as a replacement for dry milk which was not popular as an ingredient due to its high price as well as volatility in price. The defatted soy flour doesn't have a flavor problem like the full fat soy flour does.

If you look at the ingredient panel on the DiGiorno bake to rise pizzas you should see both SSL and DATEM shown, remember that once the ingredient falls to 2% or less it doesn't need to be shown in order of dominance. The reason for showing both ingredients is strictly an economic one, since both ingredients provide essentially the same end result (improved/greater oven spring) they can be used interchangeably so when one is more expensive than the other they can just switch to the other one, thus staying with the least expensive of the two. To keep things on the up and up they use both ingredients in their dough but more of the cheaper one and a lot less of the expensive one (remember, they can change that around at any time because of the 2% rule).

Other Types / Re: Re: Bo Pizza

Minn;

I would be reluctant to recommend brushing syrup on the rim of the pizza as it will most likely induce burning/charring. The pizza that you made with 70% absorption had the open crumb structure due to the ease at which the dough expended during the oven spring phase of baking but it was not crispy only because you did not bake it long enough. This may be hard to believe, but you will get a crispier crust by ADDING more water to the dough (just don't add so much so as to result in the dough collapsing) and you will get a tougher, more chewy crust by adding less water. The exception to this is when the dough absorption is reduced to something in the 40's to make a cracker type crust but in this case the dough must be sheeted/rolled very thin and the internal crumb structure is best described as looking something like the cross section of a saltine cracker.

General Pizza Making / Re: why my pie looks more a bread than a pizza?

Because of the weight of the pan (HEAVY) your approach to baking at 350F or something close to that is probably an excellent idea. Maybe that's why they were originally baked at that temperature. If you bake too hot the tops will be done before the bottoms, you might need to experiment a bit to find the correct heat balance in your oven.

Other Types / Re: Re: Bo Pizza

I can add a little to this too, it was indeed the U.S. service men who were stationed in Italy and upon returning home were looking for a job but work was mighty scarce post WWII so many of them turned to doing something that they learned while in the service, my dad and 3 uncles opened a garage (that's a story in itself)

while others did indeed remember that great Italian food "pizza" but rather than going looking for it they got busy and made it as a living. this is why a lot of the early pizzerias (since 1945) were run by vets. The problem was that no one knew where to put pizza on the daily menu, was it for lunch, or dinner? Neither, it was considered as a snack food for a good number of years with the majority of pizzas being sold after 7:00 p.m. and until the dough ran out or midnight, which ever came first. In the 60's the big pizza chains started to come into their own and pizza began to settle in as dinner fare. Then the wholesale pizza manufacturers jumped into the pool and the marketing of frozen pizzas was a big thing. The time during the late 70's and early 80's was known as the time of the "pizza wars" with all of the large wholesale manufacturers trying to out compete the competition, it got so bad that pizzas had to be labeled as being made with tomato product (sauce) and cheese product (cheese). They couldn't be called tomato or cheese because both were heavily extended with fiber materials to reduce the cost. Toppings were absolutely scarce too, people used to buy a pizza along with onion, peppers and sausage or pepperoni to build their own pizza on the store bought frozen pizza. This was referred to as "doctoring the pizza". I helped develop the first heavily topped frozen pizza that broke the mold and made way for the quality pendulum to swing the other way and open the door to high end pizzas much as we know today. The pizza industry is unlike other segments of the food industry in that the independents are the true leaders of innovation, and then the chains jump on the idea and lastly the wholesale manufacturers jump on it too making that type or style of pizza available to the masses.

How popular is pizza? Pizza became more popular in the U.S. than our sacred hamburger by the early 90's, it is so popular that it is jokingly referred to as the great American food and this might not be too far off the mark in that the most popular types of pizza sold in the U.S. today are the "loaded" pizzas, much unlike pizzas sold any other place. As pizza has continued to evolve and tastes continue to change there has been a steady move fresh, natural, organic and combined with the demand for thinner crusts thanks to the low carb craze of a few years ago we got a lot of thin crust pizzas with a lot of toppings, but now the new direction seems to be leading us to seek out something different in pizzas, we are seeing a growing trend towards basic or natural eating styles, people want to see their food made before them, they want it to be made in a rustic/old fashion way so pizza is now beginning to come full circle and returning to its roots where it is made in a coal or wood fired oven, fresh ingredients are used, flavor and aroma are becoming important quality attributes, and less topping ingredients are becoming the rule instead of the exception. This is just a very rough thumb nail sketch of how pizzas have evolved as a mainstream food in the United States.

New York Style / Re: Evolution of the NY Style Pizza (Split Topic)

Norma;

Wow! You got the best pan you could hope for, cleaned, straightened and re-glazed. Fantastic!!!

No, you don't need to season the pan at all, just give it a VERY LIGHT wipe with oil before using it and you should be good to go.

I think you'll like those 3-D pans as they are plenty deep.

Other Types / Re: Re: Bo Pizza

Minn:

Sugar and fat are both what we refer to as "tenderizers" they help to reduce toughness, chewiness in the finished baked product. Think of the difference between white pan bread and a hamburger bun (very tender), the white pan bread

contains about 5% added sugar where as the hamburger bun contains upwards of 13% added sugar, aside from that their formulas and dough management procedures are essentially identical. The amount of bake-out that the crust receives during baking also has a great influence on toughness, a crust that is dense (small holes in the crumb structure) will not bake out as well as a crust with large holes (open porous crumb structure) so all things being equal it might be said that the more open and porous the crumb structure the better the bake out, the less chewy the finished crust will be and the more crispy it will be too.

General Pizza Making / Re: why my pie looks more a bread than a pizza?

Norma;

I think 75-grams would be a good starting point from what I've seen. You are much more familiar with the finished pizzas than I am so you should be able to make educated changes in the scaling weight to achieve the finished pizza you're looking for.

One thing that comes to mind, when you get your pan, be sure to season it a couple of times and then when you begin scaling the dough for the dough balls make each row a different weight (be sure to keep track of what scaling weight was used in each row of cups) this will allow you to quickly get on track with finding the ideal scaling weight for your pan, you will also be able to make side by side comparisons of the different scaling weights which should make selecting the best scaling weight a lot easier.

NOTE: When I was reading back through some of the posts I noticed that Peter made a reference to mineral yeast food. This would also make a lot of sense since prior to 1980 most of the mineral yeast food (MYF) was of the bromated type with the main constituent ingredients in the MYF being calcium sulfate, ammonium sulfate (the "yeast food" part) and potassium bromate. The calcium sulfate would provide dough strengthening and more importantly reduce any stickiness in the dough, the ammonium sulfate was never thought to have much of an impact upon yeast performance (in later years it was eliminated along with the potassium bromate and the MYF was replaced with just plain old calcium sulfate) the potassium bromate part of the MYF would be of some benefit in a frozen dough system since the typical bromate contribution was 15-ppm (based on a use level of 0.25%) from the MYF, that combined with the bromate in the flour at that time 12 to 15-ppm) gave a total bromate level of 30-ppm or a little less. This is easily sufficient bromate to have something of a beneficial effect upon an ordinary frozen dough, interestingly.....it's a free flowing white powder too.

Other Types / Re: Re: Bo Pizza

Compressed yeast (CY) is not intended to be frozen. Freezing is extremely deleterious to the yeast in this form. You can put ADY or IDY in the freezer for storage but not CY. The ice crystals that form within the yeast severely damage the yeast cells resulting in loss of plasma fluid containing glutathione from the cells which have a softening effect upon the dough (making you think you might have added too much water or short scaled the flour) while also contributing to a sticky dough feel.

CY is considered to have a maximum refrigerated (not frozen) shelf life of 30-days for home baking if consistent results are to be expected. In a commercial setting that is reduced to only 15-days since failure is not an option in a commercial setting.

Why not change over to IDY?

Dough Clinic / Re: Troubleshooting Help

Min;

I totally agree with all of the above. You have to realize that Domino's uses an air impingement oven to bake their pizzas in and those ovens are specially profiled to provide the best and fastest bake to THEIR pizzas, so it's not even a close call to baking in a home type oven of any kind so we find that some formula modifications as well as baking modifications are necessary to produce the same type of pizza in a home oven.

In addition to the recommendations already made you might want to experiment with baking your pizzas on a stone or steel in a higher rack position to achieve more top heat for more top crust color. Another thing you might try is to brush the edge of the crust with olive oil just before you place the pizza in the oven, the oil on the crust will help to intensify the crust color to some extent. If you find that you are getting too much bottom bake on a stone but getting the top bake you desire you can experiment with placing the pizza on a screen to create an air gap between the dough and the hot stone, this will reduce the bottom crust color/bake. A common "trick" is to then remove the pizza from the screen and place it directly on the stone for about a minute (sometimes less) to impart additional crispness into the bottom crust.

General Pizza Making / Re: why my pie looks more a bread than a pizza?

Norma:

They're good people (R.T. Bundy & Associates). Over the years I have had nothing but good experiences with them. They also have a leading museum in the U.S. dedicated to the baking industry. If anyone is ever in the south central Ohio area it is a highly recommended place to stop for a visit, for those of you who like to do research on dough systems they have all sorts of early dough rheology measuring equipment on display that can be easily replicated for your testing purposes, I've done it myself a number of times.

Other Types / Re: Re: Bo Pizza

Minn;

Your dough weight for the 30.5cm (12") diameter crust looks good (comes out at 9.5-ounces for a 12" crust) and the 28cm assuming the same dough weight is still in the ball park for weight. Let us know how your next bake turns out, if you don't see any improvement you might reduce the amount of sourdough starter from your present 7% to 4% to see if that helps to control some of the volume you're getting which results in the bread like internal crumb structure.

General Pizza Making / Re: why my pie looks more a bread than a pizza?

Peter/Norma;

Any idea of the quantity added, For example: Poured from a cup/bowl into the dough mix, teaspoon/tablespoon.

There are not very many things that can be added to the dough that are a white powder which are not so functional that they need to be scaled or used with some level of caution.

Used to help keep the frozen dough fresh....translation: to help preserve the viability of the frozen dough. The only thing that I can come up with is some kind of dough strengthener that is added to the dough mix, back in those days we didn't have much to work with so the list is pretty short and includes oxidation: potassium bromate, potassium iodate (not very common), calcium peroxide, ascorbic acid. Then there are the strengthening ingredients (compounds): Calcium stearoyl 2 lactylate (CSL), calcium sulfate. That's about the end of the list until a early 1970's when we saw sodium straryl lactylate (SSL), and diacetoyl tartatic acid esters of

monoglyceride (DATEM) and azodicarbonamide (ADA) come onto the scene. Since oxidation was and still is the key to successfully extending the shelf life of frozen dough I'm guessing that the "white powder" might have been a diluted form of ascorbic acid. Ascorbic acid back in those days was only available as a white powder while bromate was only available in a crystalline form, ADA was a yellow powder. The CSL and SSL as well as DATEM were/are in a whitish powder form but they are not known for their function in preserving the viability of frozen dough. They are used in the Digiorno and Digiorno knock-offs to promote oven spring for a thicker finished crust but they do little or nothing for shelf life of the dough.

Any additional information would be welcome, maybe we can figure it out.

Other Types / Re: Re: Bo Pizza

Norma;

Yes, that's correct.

Dough Clinic / Re: Bromated flour and extended fermentation

Norma/Peter;

Hamburger bun pans are available in a number of different sizes, the common sizes that you find most often are 3.5-inches, 4.0-inches, and 5-inches (Whopper). There are also a lot of custom sizes floating around out there too. R.T. Bundy & Assoc. would be my first place to look at buying a used, un-straightened pan (don't worry is it's not been re-glazed, it will work just fine in this application. If the pans are too big to fit into your freezer that are pretty easy to cut down. I had a number of them at AIB that I cut down to fit our oven shelves when we were doing research on different types of hamburger buns. Like I said, you might be able to find some on a internet search too. If the white powder was being applied to the surface of the dough we can safely assume that it isn't a functional ingredient like ascorbic acid which is dosed in parts per million (ppm), So, what could it be? My educated guess is that it was something to eliminate stickiness in the dough and the first thing that comes to mind is calcium sulfate. It really can't be overdosed, it's cheap (farmers put the agricultural grade of it on their fields to break-up clumps/clods of dirt), it a wonder at reducing stickiness in the dough. After that, I would look at rice flour but excessive amounts on the dough can show up on the finished/baked product. Have you ever seen what are referred to as snow capped rolls? They look like a dinner roll but have a white powdery substance on the top crust.....rice flour. We used to make them all the time when I worked in production.

I hope this helps,

Other Types / Re: Re: Bo Pizza

Minn;

Actually, the porosity of the crust looks pretty good so it might just be an issue of too much dough for the size of pizza crust you are making. What is the weight of dough that you are presently using to make a single crust? What diameter crust are you making?

General Pizza Making / Re: why my pie looks more a bread than a pizza?

Danny;

Check with your supplier to see if they have the non-bromated All Trumps flour, otherwise any good, spring wheat flour with a protein content in the 13 to 14% range should work well.

Dough Clinic / Re: Bromated flour and extended fermentation

Juran;

It looks like you're on the road to success. Let us know how the pizzas turn out at the party. :)

Dough Clinic / Re: Dough ball, how to end up with proofed nice, non flattened, dough ball

Norma/Peter;

Those pans that they're using look an awfully lot like hamburger bun pans. Scaling weight about 75-grams for each dough piece. You could do the same thing by placing the dough balls on a floured sheet pan to rest for about 15 to 20-minutes, then using a rolling pin, roll/sheet each piece out to a size just a little larger than the cup diameter, place the formed dough pieces into the oiled cups, cover and allow to rise for maybe 15-minutes, then put the sauce into a decorating bag with a plain tip to deposit the sauce onto each dough skin. It would be interesting to use a McDonalds (3-D) triple decker pan (that's the pan they use for the Big Mac buns), it's deeper than regular pans and might work even better? Used/damaged hamburger bun pans should be readily available from a used bakery equipment supplier, maybe R.T. Bundy and Associates, Urbana, Ohio (tel: 937-652-2151), an internet search might also locate some used bakery pans too (MUCH cheaper than new).

As for the ice crystal comment, Peter, you were "spot-on", the low temperature doesn't prevent the development of the ice crystals, it just allows for the development of smaller size crystals which do not harm the yeast cells or the gluten structure as much as large size ice crystals which are formed at higher freezing temperatures.

Regarding the "white powder" that was mentioned, can you direct me to a photograph or video showing it?

Thanks,

Other Types / Re: Re: Bo Pizza

Additionally, do you allow the frozen skin/disk to slack-out/thaw and come to at least 50F/10C before you dress and bake it or do you dress and bake the skin/disk straight from the freezer? If you are not allowing it to warm to at least 50F/10C I can't see any way you will ever be able to get a decent bake on the pizza in a home oven within 3-minutes, much less in a home oven without a good pizza stone. Home type ovens are notorious for not having sufficient bottom heat to provide a decent bake on a pizza (pizzas are baked from the bottom up) this is why a good pizza stone does wonders for baking your pizzas, it provides that all important bottom heat. Also, it's not just a matter of putting a pizza stone in the oven, it must be allowed to pre-heat (typically for an hour or more), and placement in the oven will be critical to good success in baking your pizzas. If you can provide additional information on your dough formula, something about your oven and more information on how you manage your dough from mixing to baking, there are people here who can provide you with expert guidance to help you make great pizzas.

General Pizza Making / Re: why my pie looks more a bread than a pizza?

There can be a major issue with what is referred to as the "dreaded gum line". This is easily identified if you turn a slice over (top down) and use a razor blade or very sharp serrated knife to cut through the crust, then separate the cut slice and look at the cut side, if you see a well defined gray area immediately under the sauce, congratulations, you have a gum line. To further confirm the gum line take another slice, turn it upside down and beginning at the edge tear the slice apart in the middle as best you can, watch as the crust cleaves apart, if you see a web of dough

being stretched (called feathering) between the two pieces as they are pulled apart this is confirmation of a gum line. There are about seven different issues that can cause the gum line (thoroughly discussed in one of my articles in PMQ Magazine) and until you identify the correct cause the gum line just won't go away, this is why it is called the dreaded gum line. Some causes: Dough stretched too thin; too much sauce; pre-saucing; baking at excessively high temperature; poor or incorrect dough management procedure or parameters; insufficient yeast level (generally correlates to poor dough management).

In any case the presence of a gum line results in a tough, very chewy eating characteristic.

Neapolitan Style / Re: Latest pizzas and... Chewing gum

Craig;

Where bromate comes into play is when the gluten structure has been severely stressed such as through excessive/over fermentation for the dough formulation and flour being used. Bromate is unique in that as an oxidant it doesn't really begin to "kick-in" until you have some fermentation on the dough. Then what you see is a pronounced tightening/strengthening of the dough, at excessive levels of bromate this effect can be so pronounced that it actually reduces oven spring, in bread production a common indicator of excessive bromate is a lack of what we call break and shred (the shredded wheat looking area between the side wall and the top of the loaf, the top pulls completely free from the side wall leaving a ragged break with little or no "shred". At slightly excessive levels the amount of break and shred is significantly pronounced, so much so that in many cases the bread would not fit into the bags. In the report this was observed as a sharp departure and greater area under the base line in the extensograph data (indicative of a significantly tighter, more elastic dough).

Is bromate really needed in pizza production? I think there used to be some benefit to its use 40-years ago or more, especially when doughs would be subjected to days of fermentation but anymore the level used is so small so as to have little beneficial impact upon the overall dough performance which is achieved at bromate levels of 20-ppm and more. When bromate levels dramatically reduced in the early 80's the baking industry really didn't have too much of a problem in coping with its loss. Fact is, most bakers and researchers alike referred to bromate as an un-needed crutch. What bromate did was to allow for the use of a lower protein flour in applications best suited to a higher protein flour, then bromate was added to strengthen the weaker flour. The combined cost of the weaker flour plus the bromate addition was cheaper than the cost of a high protein flour so that's what the baking industry gravitated to.

Here's an interesting tid-bit, by the time the bromate level was being radically reduced the wheat breeders had accidentally stumbled upon wheat varieties with significantly stronger gluten characteristics (this happened while they were trying to develop wheat varieties with a higher protein content. What they ended up with, and we still have those traits in our wheat varieties today, was wheat varieties of essentially the same protein content as before but now with significantly stronger gluten characteristics that we ever had previously. Well, because of the new and stronger flours now available the bromate was no longer needed. I think the same can be said for pizza production, we have flour available to use today that is probably stronger than any flour before so like the bread bakers found out, bromate isn't needed for pizza production either.

I have talked to flour suppliers about the fact that they still offer a limited amount of bromated flour, most of it in bags only, not in bulk unless specified in a purchase contract. The reason for this is because there are still people out there who insist that they need the bromate so where there is a demand there is a product to fill that demand. It's also interesting to note that for the most part bromated flour seems to be a regional thing. I know for a fact that pizzerias have pondered and pondered the move to a non-bromated flour (social stigma to using bromate) and then finally made the switch and never really knew the difference. Add to that the fact that many pizzerias were inherited or bought from operators who used bromated flour because when they had the business almost all strong wheat flour was bromated, then when bromate was being reduced/phased out they thought that they still needed bromate in the flour and wouldn't let go of the idea, we still hear it today....gotta have bromated flour. In reality, we don't need bromated flour for pizza production, we have sufficiently strong flours available to us today to do just about anything we can ask flour to do, add to that most operators are gaining an understanding of effective dough management so we don't see as many issues with dramatically over fermented dough or excessively hot doughs which goes a long ways towards reducing any dependency on bromate, and with biochemical gluten development becoming better understood you're right, there is even less need for bromate in our doughs.

Dough Clinic / Re: Bromated flour and extended fermentation

Peter;

I'm here typing this in my 91F office, spent the night at a local motel and just stopped to check e-mail. For its impact upon Aw it doesn't matter if a granulated sugar or liquid sugar is used, in that respect they all perform equally, the only reason why the commercial manufacturers use HFCS is because of price and convenience (it's easier to convey and meter a liquid sugar than a granulated sugar).

You're right about the "dead yeast" since all yeast ends up being dead as a result of baking the dead yeast can be added to the dough and just lumped under "yeast" on the label. This helps them with the appearance of a cleaner label.....who wants to see something as chemical sounding as L-cysteine/L-cysteine hydrochloride?

As for adding IDY later in the dough mixing procedure for home bakers, it can be done only if they have a mechanical mixer and it is interacting with the dough in the correct manner (I have found that this is seldom the case with home bakers) because of this I have always recommended to home bakers/pizza makers/frozen dough makers, that the IDY be added right on top of the flour, it just circumvents so many of the variables that can exist with the home mixers. To put it another way, I've never seen a machine mixed dough fail because the yeast was added on top of the flour, but I've seen any number of cases where the dough showed less than spectacular performance because the yeast was added late in the mixing stage, reasons being, it was added too late, it was not thoroughly incorporated into the dough due to poor mixing action, oops...forgot to add the yeast. I recently saw a case where the dough was mixed with a "J" hook and the IDY was added late in the mixing stage. The incorporation of the IDY was so poor that I think I could have picked out all of the particles of IDY from the dough if I had time to do so. So why not just add the yeast sooner? The truth of the matter is if the IDY was added any sooner it would be more convenient to just add it to the dry flour and we have found that when poor mixing action is the cause for poor yeast incorporation longer mixing times are not the answer.

As for ascorbic acid, there might be some benefit but the ROI wouldn't be worth it, not with a dough that will be used within 15-days of preparation. Some of our readers might remember Pizza Magia (Cincinnati, OH) pizza chain, I developed their frozen dough formulation and dough management procedure that was used by their commissary to provide frozen dough balls to all of their stores, we used static freezing but we also included ascorbic acid to provide a supplemental level of insurance against dough failure should a store fail to use the dough within the 15-day prescribed window of use time. In such a setting where we made A LOT of dough balls, and used them under different conditions (every store interpreted the ops manual differently) and there were about 100 stores, I can't ever recall having a massive dough failure, a few complaints from some of the stores yes, but never a failure of the dough itself where many dough balls were affected. Most of the complaints we received were due to poor management of the dough at the store, such as slacking out too many dough balls and putting the unused ones back into the freezer or putting the slacked out and warmed (50F) unused dough balls back into the cooler for use on the following day.....don't know why, but all of a sudden the dough balls are blowing! Right! Refer to ops manual, page 13, that should resolve the problem. I call it a self inflicted problem.

BTW: We also have an older, less energy efficient chest freezer that doesn't have an automatic defrost cycle and I agree with Norma that it's the best thing since sliced pizza when it comes to holding my frozen pizza dough. For home use I can often get three, sometimes four weeks of decent performance from my dough when held in this freezer but do not try this if you are in a commercial setting of any kind, failure is simply not an option, when dough fails due to a freezer temperature/defrost (we like to call it temperature abuse) problems everything in the freezer goes south all at once, and don't forget that temperature abuse in a commercial setting doesn't end at the freezer, it still happens throughout the entire distribution chain (that's why we used ascorbic acid in the P.M. frozen dough) but you won't know it until the store begins to report back to you that all of the dough is failing.....not a pretty picture.

Shop Talk / Re: Tom Lehmann's Dough Management Procedure

Hey Peter; How do you like your new name "Steve"? Sorry about that, our air conditioning went out this afternoon, it's down to 90F as I write this at 10:44 p.m. I'm sweating, thinking about trying to sleep tonight and tomorrow it will be at the century mark with an abundance of humidity, oh, by the way, a new circuit board won't be available until Thursday or Friday!!!!

Shop Talk / Re: Tom Lehmann's Dough Management Procedure

Steve;

The addition of IDY to the dough rather than as a dough ingredient is the preferred method to add IDY but I don't recommend this manner for home bakers since you must use a mixer and that mixed must exhibit decent mixing action upon the dough (lately we've seen some cases where a very suitable mixer was used but the dough size was either too small for decent mixing action or the gap between the agitator was too great and mixing action suffered. For this reason I have always recommended for any home baking where a mixer will be used to add the IDY as an ingredient right on top of the flour and where the dough will be mixed by any method without a mixer it should be pre hydrated before addition to the dough water (once hydrated it can safely go into cold water without a problem). When the IDY is added to the dough it should be added at or after the point where the flour

has pretty well hydrated, in the case of a pizza dough this normally means about 2-minutes after the oil addition when using the delayed oil addition method of mixing. If the dough is being machine mixed by any other method you just want to be sure that the dough can mix for a minimum of 4-minutes after the IDY is sprinkled onto the dough surface.

In reading your report on the development of the frozen dough the only other thing that I can add is that it is well known that doughs with lower water activity Aw tend to exhibit better yeast survival than like doughs with a higher water activity Aw. In both bread and pizza formulations there are only two ingredients which can be added to reduce water activity in the dough, these are salt and sugar. You can't reduce the dough absorption sufficiently to impact the Aw in the finished crust. Based on this I would speculate that the addition of the honey that you added probably helped with the yeast survival to some extent, that's the good news, the bad news is that if you use either of these ingredients at levels sufficient to impact Aw the flavor of the finished crust will also be impacted. For this reason, whether it be in large scale or small scale freezing of dough I always take the stand that the salt and sugar levels should be maximized without adversely impacting the flavor of the finished crust. Several years before my retirement from AIB I noticed that crusts made from frozen dough that had been over fermented and re-rounded then allowed to rest again until the dough balls could be easily opened into skins always exhibited super flavor characteristics. This lead me to doing a little research for an alternative method for working with frozen dough when making pizza crusts. The method that I came up with (You've probably seen this before) is to fully slack out the dough in the cooler/fridge until the internal temperature of the dough balls is at the same temperature as the cooler, then remove the dough balls from the cooler and place at room temperature (70F) for 1-hour, then place back into the cooler/fridge for a 24-hour cold fermentation period. What this accomplishes is to bring the dough balls to a constant temperature from which to bench mark the time from (the temperature of the cooler) the 1-hour at room temperature allows the dough to begin warming and the yeast to begin to activate a little, then the 24-hour cold fermentation period serves to develop the flavor and textural properties that we have come to expect in a pizza crust. Think about that for a minute, we just took a frozen dough ball and turned it into something that looks a lot like how we manage and cold fermented dough. Keep in mind that this was done using a commercial frozen dough ball, if you are using a commercial frozen dough puck (yep, they make them that way now) or if you're using your own home made frozen dough pucks you will need to work on the 1-hour out of the cooler aspect. This should be pretty easy to do as all you will need to do is to monitor the internal temperature of the dough puck and once it reaches something in the 60 to 75F range (you'll need to see what works best in your own fridge) put it back in the fridge for 24-hours. For a home made dough handled in this manner you MIGHT be able to hold the dough longer than 24-hours in the cooler (cold fermentation) but when using a commercially made frozen dough I've not had the best success holding it more than 24-hours as it tends to become overly soft, probably due to the use of L-cysteine or glutathione (dead yeast) in the formula to help with the long mixing times associated with frozen doughs.

I saw that you were having a problem getting the dough temperature low enough, that is not uncommon outside of a commercial bakery because they use horizontal mixers with 1,500 to nearly 2,000 pound dough capacity, as I said earlier, these mixers are specifically designed for mixing the super tough/stiff and cold frozen doughs. They have direct expansion jacketed mixing bowls which are used for cooling the dough, in fact if the mixer is stopped while the refrigerated jacket is still turned on or if it is turned off within 2-minutes of stopping the mixer there is a

good chance of freezing the dough to the inside of the mixing bowl. Here's a trick that a good friend of mine and I worked on some time ago, use dry ice to help keep the dough cool during mixing. VERY CAREFULLY (repeat that 100 times), USE FULL EYE AND SKIN PROTECTION (repeat that 200 times) place the piece of dry ice in a folded heavy weight towel and using a hammer break up into small granular pieces and begin adding it to the dough while it is still mixing (BE CAREFUL), you can get a rough idea of how much dry ice you have added by back weighing the original piece, once you know how much you needed to achieve the targeted finished dough temperature you can add that to your dough management procedure for frozen dough. We do this commercially but not with dry ice, we use compressed carbon dioxide, make a horn (like that used on a CO₂ fire extinguisher, to blow the CO₂ snow into the dough while its mixing. It is interesting to note that for whatever reason we were never able to reduce the dough temperature using CO₂ but we were able to very effectively maintain the dough at any cold temperature (within reason) we needed for making frozen dough. This method is in limited commercial use today to help control finished dough temperatures in very hot bakeries where chilled water and a refrigerated bowl are just not sufficient to achieve the targeted finished dough temperature during only very brief periods of time (CO₂ is expensive as a processing tool).

Shop Talk / Re: Tom Lehmann's Dough Management Procedure

You're right Craig, the times when I've had the best success with shrimp on a pizza has been when I've been using a wood fired oven and baking at high temps. When using a deck oven it's touchy, when using an air impingement oven less than desirable results are all too common so I don't even go there anymore.

Newbie Topics / Re: Meat or seafood toppings question

Peter;

Since the sodium complexes with the wheat proteins, thus strengthening them (omit the salt from a dough formula and you will see the effect of the salt) by adding the salt late in the mixing/dough development stage you allow for faster gluten development which allows the dough to be stretched faster over the roller bars/agitator bars of the horizontal bread mixers used in wholesale frozen dough production. It is this stretching (much like kneading but much more forceful) that exposes more of the dough to air within a given period of time which can oxidize the beta carotenoid pigments as well as strengthen the gluten structure in the exact same manner as the addition of a fast acting oxidant (ascorbic acid) would. This was actually commercialized by the old Continental Baking Company back in the 1970's in their fatigue dough method for making bread. By this procedure the dough was mixed using the delayed salt method but instead of adding the salt short of full gluten development it was instead added somewhat after full gluten development. This was done as the proteins can carry more water if they are opened/uncoiled through over mixing (the same can be accomplished by using an autolyze but a wholesale production has neither the space, equipment or time to allow their doughs to set and hydrate for even a few minutes much less 30 to 60-minutes). In this regard the over mixing of the dough accomplishes the same thing but in a matter of just a few minutes, doesn't require any investment in equipment or space. They found that the doughs made in this manner were overly soft, extensible and sticky but they discovered if they opened the mixer bowl to allow air to enter and displace some of the carbon dioxide and tumbled (mixed at low speed) the dough for a couple of minutes before discharging it from the mixer it would tighten back up again due to the further oxidation of the proteins making up the gluten and all was good. They now had a dough with additional absorption (more

than could otherwise be achieved) that also handled quite well through the make-up equipment (divider, rounder, sheeter and panner). Now, how does all of this relate to the article cited, I have a theory. The first thing to keep in mind is that both pan bread and commercial frozen pizza doughs are mixed to full gluten development while all pizza doughs are mixed to a point of development significantly short of full gluten development as this helps to promote the desired open, porous crumb structure characteristics, the same can be said for French bread doughs too. By putting the salt into the dough right up front the dough is much tighter and tends to get kneaded as the agitator drives through the dough but not stretched over the mixing arms or dough hook as the dough is too tight to do so, whatever the case may be, this results in less of the dough surface being exposed to air (oxygen) so there is less oxidation of the dough and a greater tendency to under mix the dough with regard to gluten development. That same "natural" oxidation condition created by mixing a soft dough would also tend to oxidize the beta carotenoid pigments from the flour (they use oxidation, bleaching as it is referred to as) to remove the beta carotenoid pigments at the flour mill so the end effect is similar.

Shop Talk / Re: Tom Lehmann's Dough Management Procedure

While I'm a real seafood pizza lover I try to avoid shrimp on my pizzas because it's too easy to get them over cooked and it spoils the entire pizza. Instead I opt to use clams, crab meat, lobster and firm flesh fish. All of these can go on raw, just thin slice the fish and it'll be fine. I also like to use variations of a white sauce with my seafood pizzas as I think it compliments the seafood better than a red sauce. A little while back there was some discussion with great ideas for seafood pizzas.

Newbie Topics / Re: Meat or seafood toppings question

When you say that you left them uncovered for 3-hours at first, was this in the fridge? Did you cover the dough balls afterward? Since the cold air in the fridge can't hold as much moisture as warm air outside of the fridge if the dough was at room temperature uncovered this would explain the dry crust on the dough ball. If you allow the dough to proof at room temperature it should always be covered in some manner to protect it from drying out. A very simple method of doing this is to place the dough balls on the counter top and then invert a bowl over each dough ball. To eliminate that stickiness you are finding immediately after the dough is fully mixes, put the mixer in low speed for 30-seconds and pour a small amount of oil down the inside of the bowl while continuing to mix at low speed for 10 to 15-seconds. The dough should come from the bowl much easier and without any perceived stickiness.

Your dough is beginning to look pretty good.

New York Style / Re: Heikjo's first attempt at NY style Lehmann (12" on stone)

In your previous doughs did you use as much as 70% 00 type flour? Remember that 00 type flour is not malted so unless you are either adding a source of diastatic malt or sugar there is a good probability that the yeast ran out of nutrient and then began to cannibalize itself which results in a slack dough condition due to the release of glutathione from the dead yeast and little or no fermentation power in the dough.

Dough Clinic / Re: Surprise fail

Peter;

No, salt isn't an antioxidant. Due of the complexing of the sodium with the wheat

proteins the gluten is strengthened so when a dough is mixed without salt it will reach any specific level of gluten development faster, then when the salt is finally added the dough will tighten back up again. The idea is to mix the dough past peak development and then when the salt is added it brings the gluten back to whatever level of development you've developed the mixing time and salt addition to achieve. The beta carotenoids are what gives unbleached flour its yellow or creamy color and they can only be removed through oxidation. Back when we were using potassium bromate at 65-ppm and above all bread came out with a bright, white crumb color due to the oxidizing effect upon the beta carotenoids (of course everyone was looking for the brightest, whitest crumb color at the time so all was good). What makes the dough change in appearance (note I didn't say color) is the smoother skin that is being formed over the surface of the dough due to gluten development, this smooth skin reflects light better than the rough, porous surface texture of the undeveloped dough (light absorption into all of those crevices). As for flour strength in a frozen dough system you are correct in that the flour provides all of the strength needed, so why oxidation added to the frozen dough? The answer is because of the glutathione that is slowly released from the yeast during the long shelf life of the frozen dough, without the ascorbic acid, azodicarbonamide, or potassium bromate the glutathione would progressively weaken the dough to the point where it potentially could not be successfully used to make some yeast leavened items (pizza, in all probability would not be one of those items since we don't call for a lot of residual strength in the dough like we do when making bread where the structure is several inches high and is also subjected to mechanical shock from handling the pans of fully proofed dough. If the dough is intended just for pizza production you're right, no additional strengtheners in the form of oxidation would probably be needed, but as it is, the dough that is used to make pizza crust today might be used to make French bread, Vienna bread or rolls tomorrow. Add to that the fact that there is potentially so much dough in the pipe line and oxidation is something of a crutch, you will see oxidation continue to be used in frozen doughs if for no other reason than as an insurance policy to protect the dough performance just in case something goes wrong in storage or distribution.

Shop Talk / Re: Tom Lehmann's Dough Management Procedure

A large, heavy duty rolling pin works well.

Dough Clinic / Re: Affordable Manual Dough Sheeter?

Peter;

In a commercial operation CY is preferred over IDY only because of the cost factor with the one condition being that it must be available to the bakery fresh and at least twice a week. If either of these conditions cannot be met the cost of the yeast will become a secondary factor to the performance of the yeast, this is where IDY is looked at more favorably. Due to the difficulty of developing the gluten in such a cold dough it is customary to mix these doughs using what is referred to as the "delayed salt" mixing method. Since the sodium complexes with the wheat proteins/gluten mixing the dough without the salt allows for faster dough development (it shortens the total dough mixing time by about 2-minutes), the salt is then added at a point approximately 4-minutes prior to the end of the mixing time. In some of the smaller frozen dough operations where IDY is in use the most common method for adding the IDY is along with the salt, the additional 4-minutes of mixing after the addition of the IDY is sufficient to disperse the IDY and allow for complete hydration (it's one of the recommended ways to add IDY). As you have already discovered, yeast leavened dough is pretty tolerant to static freezing

conditions if you limit your expectations to not more than 15-days. I know people will argue with me saying that they have successfully frozen dough in their home freezer for much longer periods of time but two things are sure, one is that they cannot do it repeatably with consistent results, two I've yet to meet the person who would do it with as much as 22-weeks of production on the line (at anything from 50,000 to 100,000 thousand pounds of dough made on each of those days), the last thing you want to hear in a commercial frozen dough bakery is that the dough is failing...Ouch!

Shop Talk / Re: Tom Lehmann's Dough Management Procedure

I'm with Essen1, Provolone will just increase the fat content of your cheese with essentially no impact upon the flavor, by definition Mozzarella cheese is bland in flavor, but with the addition of a small amount of Parmesan or Romano you can make the cheese flavor intensify and really "pop". Experiment with the addition of some other types of cheese to find what you really like, you won't be disappointed.

Pizza Cheese / Re: Anyone do a whole milk mozz/provolone blend?

Peter;

For many years frozen dough manufacturers used nothing but either FRESH compressed yeast or cream yeast (liquid yeast/available only in truck load quantities). The compressed yeast was/is delivered to the bakery normally twice a week to ensure freshness. This compressed yeast is the same yeast that we can buy from a distributor but most likely a lot fresher. The frozen dough manufacturers go to great lengths to make sure the dough/yeast isn't activated prior to freezing. Once the yeast begins feeding/fermenting the individual cells plump up and are more easily and to a greater extent damaged in the freezing process. These steps are necessary to ensure satisfactory performance over the shelf life of the dough (18 to 22-weeks). When shelf life is not the prime concern and we can live with a predictable 15-day shelf life you can get away freezing a fermented dough in a non blast type freezer (blast freezer = -30 to -35F with 600 to 800 linear feet per minute airflow over the product) Static freezing, which is what many small operators do is defined as freezing at 0 to +10F with little or no airflow over the product. This type of freezing allows for the development of a very large and angular shaped ice crystal which is especially deleterious to the life of the yeast. The type of freezer that the dough is stored in can also have a dramatic impact upon the shelf life of the dough too. Residential freezers may defrost 12 to 24 times in a 24-hour period which results in moisture migration within the dough and continued development of those large ice crystals (this is why your ice cream looks grainy in your home freezer, just look at the top of the carton at all the moisture/frost that collects there, that's all from the ice cream, the dough does the same thing, we have a name for it, "freezer burn"). Commercial freezers don't have this problem by design, that's another way they get their long shelf life. Lately, there has been some development of freeze tolerant yeast but due to the higher cost not many commercial frozen dough manufacturers are using it. A number of years ago I did a quick calculation on the impact of yeast cost on the profit margins of a commercial dough manufacturer, a \$0.01 (1-cent) per pound cost difference in the yeast impacted profits by roughly \$91,000.00 a year assuming a production of 100,000-pounds of dough per day. That's why everyone isn't jumping on the freeze tolerant yeast band wagon, most dough manufacturers just don't see the R.O.I. There is one type of commercially frozen dough that is fermented prior to freezing, this is pre-proofed frozen dough, pre-proofed dough is frozen cryogenically at between -45 and -65F using liquid carbon dioxide or nitrogen which allows for the development of a very small ice crystal which does very little damage to the yeast

so the product retains a reasonably long shelf life, you can see this type of dough in the Freshetta Pizza that is sold in the frozen food case at your local supermarket. If frozen dough has a common denominator it is temperature, everything revolves around temperature when making and storing frozen dough.

One last thing about commercial frozen dough formulations, many of them include some form of oxidation in the form of ADA (azodicarbonamide) or AA (ascorbic acid), these oxidants help to reverse the dough weakening effects of the glutathione which leaches out of the yeast cells damaged during freezing making for a stronger dough after it is slacked out/thawed.

I'm feeling like I'm back in teaching again! :)

Shop Talk / Re: Tom Lehmann's Dough Management Procedure

Rick;

No, salt isn't evil, and when consumed in moderation it isn't bad for one's health either, with that said the salt needs to be balanced between the toppings and the crust for the best overall flavor in the finished pizza, types of pizza that will be made with a lot of toppings (toppings typically contain salt) will normally be best with a dough formulation with 1.5 to probably not more than 2% salt (I normally use 1.75% salt), while pizzas that are more sparsely topped typically do better with a dough formulation containing a higher salt level (2.5 to 3% salt is pretty common in this case). If you're just making pizzas and letting the amount of toppings fall where they may, 1.75% salt is a good level to work with. If you are trying to reduce sodium in your diet try Salt For Life with a 70% sodium reduction and no metallic taste like you got from the old Morton's Lite Salt. You can buy Salt for Life at Walmart.

Dough Clinic / Re: Dough ball, how to end up with proofed nice, non flattened, dough ball

Josh;

Believe it or not, there is a correct way to level a volumetrically portioned cup of flour. Pour, sift (the most accurate/repeatable) or scoop the flour into the cup, using a flat blade decorator's spatula held on edge, place the spatula across the center of the cup and move the spatula to the edge, repeat going in the other direction to level off the other side of the cup. Always begin in the center of the cup. This helps to promote the greatest repeatability.

Dough Clinic / Re: Quick dough question from a complete newbie

In my opinion you will be hard pressed to beat the Marsal deck ovens. Their newer brick lined decks are really great for N.Y. style pizzas. If you opt for Marsal just make sure to follow their installation advise and unless otherwise stated by Marsal, do not install an external gas pressure regulator, the Marsal ovens come with a regulator already installed in the oven, if you add a second one the oven will take forever and a day to come up to temperature and the baking times will be around 15-minutes. This is the single most common problem that I've encountered with the Marsal ovens, just read the directions and you will have a great oven from the get go.

Commercial Ovens / Re: Pizza ovens

The dough mixing can be done at either low or medium speed, Peter is correct in that it just depends upon how long you want to wait for the dough to be mixed. Typically we see mixing times of 18 to 20-minutes at low speed and 8 to 11-minutes at medium speed. I also recognize that for a number of reasons some mixers will not handle mixing some pizza doughs at anything but the lowest/slowest speed so

that eliminates any options for mixing speed right off of the bat. The main thing about mixing almost all pizza doughs is that you don't want to mix to the point of developing a lot of gluten, mix the dough just to the point where the dough takes on a smooth, satiny appearance, biochemical gluten development will take care of the rest of the gluten development for you during the fermentation period. The one exception to this advice on gluten development is when we are making COMMERCIAL frozen pizza dough. In this case there will be essentially no fermentation so there will be no biochemical gluten development taking place, but we still need the gluten development to provide strength to the dough after slacking it out (thawing) so the only way to get the desired gluten development in this case is through mechanical gluten development. Since frozen dough is made cold (60 to 65F) the doughs are extremely tough, add to that the fact that the gluten is somewhat more difficult to develop at those lower temperatures it is common to include a reducing agent such as L-cysteine/PZ-44, glutathione, or deodorized vegetable powder to the dough to help develop the gluten and shorten/reduce the overall mixing time (hence their reference as a "reducing agent"). To achieve the needed gluten development these doughs must be mixed at high speed in mixers that are specially designed to withstand the mixing forces applied to the dough, they are also designed with direct expansion jacketed mixing bowls to help keep the dough cool during mixing allowing the targeted finished dough temperature (60 to 65F) to be CONSISTENTLY achieved.

This is probably more than what you wanted to know about dough mixing but I know that some of our posters either use or have used commercially prepared frozen dough from the supermarket or food distributor so I thought it might be good for them to have an understanding of how the commercial frozen dough is made.

Shop Talk / Re: Tom Lehmann's Dough Management Procedure

Josh;

It is very common for a pizza dough to not contain any sugar. It all depends upon the type of pizza you are making.

Dough Clinic / Re: Quick dough question from a complete newbie

The champ of all the 5-quart size Hobart mixers is the Hobart Model N-50. This is a real workhorse, 3-speeds, all metal gears, only complaint is that there isn't a spiral dough arm made for it. The mixer was originally designed for use in making small test batches of concrete and ultimately found its way into the food industry. As far as I know, all N-50s were painted only Hobart gray. Great mixer if you can find one, pretty scarce though. Another excellent option is to buy a used A-120/A-120-T (12-quart) or A, A/S, or AS-T-200 (20-quart capacity) Both operate on standard home voltage (110-V/15 AMP) both can be had with all the attachments including a reverse spiral dough arm. These mixers are actually pretty easy to come by as you will find them in most restaurants. The last restaurant sale that I was at had two A-120s that went for under \$1,000.00 each. Not a bad price when you consider that it will most likely be the only mixer you will ever need to buy for dough mixing and if you should ever decide to sell it you can always get your money back out of it.

These mixers stand about 30" tall so they are hard to put on an average counter top but a friend of mine who has one has his mounted on a bench out in his garage. BTW: The "A" designation is the basic model, A/T has a timer integrated into the switch and the T/S has a timer in addition to a position on the switch which allows you to jog the agitator in a "stir" mode.

Prep Equipment / Re: Need help choosing KA mixer...

Greg;

The parchment paper will provide insurance should the dough want to stick. Even if it sticks to the parchment paper you can still peel it off but if the skins stick to each other as, they might without parchment paper, you're not going to be able to separate them. Just a loose covering with Saran/stretch wrap will do, you don't want to trap any moisture in the stack, allowing it to ventilate is better than not.

General Pizza Making / Re: Pre stretching pizza dough

Norma;

You should try some of your cricket flour dough in those problematic pans, I've heard that when you use cricket flour in dough for deep-dish pizza the finished pizza.....are you ready for this? Jumps right out of the pan! :) All kidding aside, those cricket flour pizzas actually look pretty good, something like a whole wheat pizza.

General Pizza Making / Re: Cricket Flour Dough for Pizza

Norma;

Let's try one more thing, add more oil to the pan when you put the dough in. If I recall correctly, an old standard used to be 1-ounce of oil into a 12" diameter pan (113-sq. in.). If that doesn't work my suggestion would be to completely strip all the finish off of the inside of a pan and begin the seasoning process over again on that pan. Since pan seasoning is a first cousin to varnish you can use any good paint stripper to remove the seasoning, if you need to scrape anything use a coarse steel wool, do not use sandpaper, sandpaper will scratch the pan while the steel wool will burnish it.

Stones/tiles/steel, Pans & Accessories / Re: Pizza Pans

P505;

By doubling the dough size you will get a couple more degrees temperature gain due to the friction of the dough rubbing against the bowl but not enough to give you the result that you have observes, hence the only other reason why your dough has become noticeably warmer by just doubling the batch size is because the water temperature had to be significantly warmer. Remember, if you want to make great pizza, and if you want to do it consistently you've got to take the temperature of the water that you are putting into the mixing bowl (about 70F) and also the temperature of the dough at the end of the mixing period. You will most likely be served best with a finished dough temperature of around 75 to 80F but this might vary to some extent depending upon your exact dough management parameters. Remember that as the finished dough temperature gets into the 90F range the wheat proteins (gluten) begin to disassociate (come apart) resulting in a stringy, sticky dough that is all but impossible to work with.

New York Style / Re: help please

Greg;

How far in advance are we talking about pre-opening the skins? If the time will be fairly short, less than 30-minutes, you can probably get away with it but remember that the dough will be warm when you open it and it will also be actively fermenting so even the semolina flour will most likely be engulfed into the expanding dough potentially causing the waxed paper to stick to the dough. In this regard parchment paper might work better, and better yet would be to very lightly oil each skin to further ensure release from the separating papers. To protect the stack just lightly cover with a piece of cling wrap. I would not recommend trying to

put the stack of pre-opened skins in the fridge as this will serve no useful purpose and may in fact, contribute to problems caused by condensation forming (warm dough cold environment) such as a sticky or tacky dough. I've also found it to be beneficial to minimize dough absorption as this will retain better handling properties of the pre-opened skins as you remove them from the stack.

General Pizza Making / Re: Pre stretching pizza dough

Norma;

As you continue to bake in a seasoned pan the seasoning slowly cures to a harder surface (pan seasoning is just like a varnish in that regard), as you continue to bake in a seasoned pan the oxidation process continues (heat accelerates oxidation) until the seasoning becomes hard (like cured varnish)and it continues to darken until nearly black in color. That's when you begin to see the improved release properties of a seasoned pan, also why grandma got so upset if anyone suggested cleaning that old black colored frying pan. It takes time to develop that desired patina and hard finish but it can be easily destroyed by improperly washing the pans.

Stones/tiles/steel, Pans & Accessories / Re: Pizza Pans

Jurjan;

I hope you're drinking stout and not beer from that fridge. Too warm for beer but just right for stout. Too warm for pizza dough too by the way.

How long will it take you to get your dough balls into the commercial cooler? This is a very important thing to know in this case as it will help me to determine what you finished dough temperature should be.

Dough Clinic / Re: Dough ball, how to end up with proofed nice, non flattened, dough ball

Ryan;

2 to 2.5% is what I would call typical, some may go as high as 3% but that's way beyond my own taste preferences.

Dough Clinic / Re: 10 minute mix in a KA, dough ready for balling?

I either wipe all of my dough balls with a little oil or I use a plastic storage box about 6-inches deep that I bought at Walmart that I keep the dough balls in while they're awaiting their turn on the bench. If you're only looking to hold the dough balls for 15 to 20-minutes the oil works fine but if it will be longer than that you will need to cover them, doesn't need to be air tight, in fact you can put them into a roasting pan and drape with a damp towel too, works just fine.

General Pizza Making / Re: Dough gets dry crusty layer on outside

In most doughs 1.75% salt is all that you really need unless you're addicted to salt, then the sky's the limit, but be aware that salt has a suppressing effect upon the yeast so it can slow down fermentation quite significantly when you start getting up at 3% and higher levels. In pizza production you really don't need more than 1.75% salt as this level provides all the advantages that the salt provides while not going overboard with the sodium level as there will be an additional salt/sodium contribution from the sauce and especially the cheese and any processed meat toppings. It's all in developing a balance.

Dough Clinic / Re: 10 minute mix in a KA, dough ready for balling?

Kolo;

This is just my humble opinion, but I think the only way to add basil to a pizza baked in a wood fired oven, especially a Margherita is to place the leaves on the

top of the pizza after it has been completely baked (leaving the pizza on the peel while placing the leaves, then place the pizza back into the oven (still on the peel) and lift it into the dome of the oven to wilt the basil, remove immediately and let the latent heat in the pizza do the rest for you. I know of a lot of other operators who just add the leaves when they peel the pizza out of the oven letting the latent heat in the pizza wilt the leaves. Either way the presentation is great and the aroma released from the basil leaves is absolutely great.

When I'm making a regular type of pizza and just using fresh basil to replace that "dried stuff" I like to roll a number of leaves and cut on the diagonal, then place the cut strips over the sauce before adding the cheese. This still allows the basil to wilt and release its aromatics and the cheese helps to trap those aromas in the pizza without any fear of scorching the delicate basil strips. The only problem here is that you cannot see the basil (what a shame) and the flavor is lost/intermingled with the other flavors of the pizza, but in any case it sure beats the flavor of dried basil, which is why we were adding it in this specific case anyhow.

I might add that my own personal preference is to add what I call an Italian Wedding Bouquet (that's the 4-leaf cluster at the top of each leaf stalk) to the very center of each pizza for great looks, aroma and taste.

Neapolitan Style / Re: Adding basil before mozzarella

Jurjan:

I agree totally, we have all had to make some changes to our dough formulations or management procedures to accommodate what we have on hand to work with. If you don't already have one, see if you can find a good food type thermometer, they're rather inexpensive and the accuracy is close enough for our needs. Use the thermometer to measure the temperature in your home fridge as well as the finished dough temperature. Your home fridge should be operating at around 40F/4.4C. If the temperature of the fridge is much warmer you will need to reduce the finished dough temperature by a few degrees to prevent the dough from over fermenting. It also helps a lot to take the dough directly from the mixer to the counter top for scaling and balling without any pre-fermentation. Once the dough begins to ferment it becomes less dense making it even more difficult or sometimes even impossible to properly chill in a home fridge.

Dough Clinic / Re: Dough ball, how to end up with proofed nice, non flattened, dough ball

Pizzamaster;

In the oven industry a distinction is made between convection baking and air impingement baking to which you are referring. Convection baking utilizes air flow/movement throughout the oven while air impingement baking utilizes very high velocity airflow that is focused directly at the product being baked, part of the reason for doing this is to break through (sweep aside, There ovens were once referred to as "air sweep ovens") the cool area surrounding all products as they are baked. This cool area is the result of steam being released from the product during baking and it greatly slows the rate of heat transfer to the product. By "impinging" the high velocity air onto the product the cooler "corona" is displaced, allowingp for more efficient heat transfer to the product which translates to faster baking.

You can see this by baking a pizza in a convection oven and then baking the same pizza in an air impingement oven at the same temperature. The air impingement oven will always give a stronger bake and higher internal temperature faster than other types of ovens. The one scenario where this is a moot issue is when baking a very thin crust pizza with a limited number/amount of toppings in a stone hearth oven at temperatures of 750F and more, in this case the air impingement oven is at

a bit of a disadvantage as there is a limit to how fast you can bake using air impingement technology.

Since pizzas are correctly baked from the bottom up convection ovens do not generally do a very good job of baking pizzas but as has been mentioned by others if you add a pizza stone into the mix you have now created a platform for achieving bottom bake while the air movement does a pretty good job on the rest of the pizza, this is especially so if you have a lot of vegetable toppings on the pizza where in this case, the airflow, just like with an air impingement oven, does a respectable job of removing some of the moisture released from the vegetables resulting in a drier finished pizza.

New York Style / Re: Convection baking - good or bad?

Norma;

If I'm seeing it correctly (light isn't playing tricks with the photographs) it appears that the seasoning is pretty well worn through on the pan that you tested. The other two pans appear to be a better option. It is indeed worn seasoning you will need to continue seasoning the pan that was sticking until you see more color beginning to develop in the seasoning.

Stones/tiles/steel, Pans & Accessories / Re: Pizza Pans

Jurjan;

I think the problem with your bags is that they are too big. Try a smaller size bag, that should work better. As for spacing them apart in the cooler the dough balls should not be tightly packed as they need room for airflow around them to achieve effective cooling of the dough ball. Even in the plastic dough boxes the dough balls have to be spaced about 2-inches/50mm apart for the same reason, plus the dough boxes also have to be cross-stacked for approximately 3-hours (depending upon the weight of the dough ball and efficiency/type of cooler you are using, after the cross-stack period the boxes are then down-stacked (a new stack is built taking the top box from the stack and placing it in the bottom position of the new stack, the boxes are covered at this time for the duration of the cold fermentation period.

Dough Clinic / Re: Dough ball, how to end up with proofed nice, non flattened, dough ball

BJ;

No, I do not find that plastic bags work well for room temperature fermentation, in that case plastic containers will work better for you.

Dough Clinic / Re: Dough ball, how to end up with proofed nice, non flattened, dough ball

Jurjan;

I forgot to add that if you cannot find the food bags in your area, you might check with a local bakery to see if they use plastic bags for any of their items, then see if you can buy a few from them, buy reusing them (no need to wash between uses) twenty bags should last you a long time. Or, if your commercial bread is sold in plastic bags, put out the word to friends that you need some of those plastic bread bags, you do realize that you will probably need to thank them for saving those bags for you by inviting them to one of your pizza parties. :)

Dough Clinic / Re: Dough ball, how to end up with proofed nice, non flattened, dough ball

Jurjan;

Additionally it would be beneficial to know what the finished/mixed dough

temperature is. Since temperature drives the rate of fermentation dough that is too warm will ferment faster than a cooler dough AND the cooler dough will cool down faster when you place it in the fridge for better fermentation control. For most pizza doughs that will be cold fermented for 24-hours a finished dough temperature of 75 to 80F is a good place to start.

BTW: Zip-Lock bags are not the best bag option for bagging your dough balls, instead, pick up a roll of food bags from your local supermarket, just a couple of dollars for a box of them, oil the dough ball, drop the dough ball into the bag, pull bag snug around the dough ball and twist the open end to close and tuck it under the dough ball as you place it in the fridge, this is important as it allows for some expansion of the dough ball without fear of the dough bursting the bag, and it also allows the bag to burp itself as carbon dioxide is formed in the bag. To remove the dough ball just invert the bag over a floured surface allowing the ball to strip the bag inside out as it falls from the bag. Place the used bags into a clean bag and store in the fridge until the next time you make dough, they can be reused many times over.

Dough Clinic / Re: Dough ball, how to end up with proofed nice, non flattened, dough ball

Carl;

Next time try some Raw Sugar/Castor Sugar on top of the rolls before baking. I like to brush with melted butter and then sprinkle on the sugar just before going into the oven. Really Gooooood! :)

Or how about making a small amount of streussel topping and sprinkling on over the melted butter? Ditto as for above!

Dough Clinic / Re: 10 minute mix in a KA, dough ready for balling?

Heikjo;

If you keep making pizzas like that you're going to find out that you have a whole bunch of new friends. :)

I would continue to experiment with the convection fan on/off and with increased absorption with an increase in mixing time which will probably be necessary with the increased dough absorption. With the increase in dough size be sure to try using only the spiral mixing agitator for the entire mixing process, I'm just trying to make it easier for you to make your pizza dough.

New York Style / Re: Heikjo's first attempt at NY style Lehmann (12" on stone)

Norma;

What you probably read is that once the pans are properly seasoned the seasoning process will continue as the pans are used, this is seen as a continued darkening of the seasoning until almost black in color.

Stones/tiles/steel, Pans & Accessories / Re: Pizza Pans

Not necessarily a "bad" result but a different result, if that result was good or bad you would have to decide based on your personal preferences and expectations. The one thing that I am sure could be predicted is that the fresh tomato flavor would be lost.

Sauce Ingredients / Re: Why not cook sauce? Isn't it already cooked before being canned?

And as the tomato is cooked on the pizza it is also concentrated. They all end up being cooked in one way or another, most feel that you get a truer tomato flavor

with minimal or at least a single cooking. Pasta sauce is a whole different story since the sauce doesn't really get cooked on the pasta, so slow simmering is the way to go for a pasta sauce. If you really want to see what too much heat on tomato sauce looks and tastes like just take a look at Hunts tomato paste. The cooking has turned it to a Burgundy red and the taste, well you can decide that for yourself.

Sauce Ingredients / Re: Why not cook sauce? Isn't it already cooked before being canned?

Norma;

If you could provide a picture of the pan that would be great. I have a suspicion that the pan may not be sufficiently seasoned.

Stones/tiles/steel, Pans & Accessories / Re: Pizza Pans

Norma;

Are you putting oil in the pans when you bake the pizzas too?

Stones/tiles/steel, Pans & Accessories / Re: Pizza Pans

Actually, the best tomato products are made by what is called a "cold pack" process where the sauce is not cooked in the traditional method. The canned product is heated as a sterilizing step but that's all the heat they get. The biggest reason for not cooking the sauce is flavor. You know how great the sauce smells while it's being cooked? Too bad you're the only one who will experience those wonderful aromas, those aromas are volatile (that's why you were able to enjoy them) and they can never be enjoyed as part of the experience of eating the pizza. When we use a "cold" uncooked sauce those wonderful aromas are released during baking so many of those aromas can be enjoyed by those eating the pizza. From a pizzeria standpoint, once you cook the sauce you must cook it to at least 165F/73.8C and then hold it at 140F/60C for use (which further deteriorated the flavor of the sauce) so we cool it down for storage (food safety regs stipulate that you must cool it down to 40F/4.4C or less but here's the sticker, it's called the 4-hour rule which states that the food can remain at a temperature which can support microbial growth (140F/60C to 40F/4.4C) for an accumulated time of not more than 4-hours. Add in the time it takes to get the sauce temperature up to 165F/73.8C and then back down to 40F/4.4C and you don't have much, if any time remaining on the clock, much less use it on the prep table.

If you want to experience a wonderful "sauce" just take a fully ripe tomato and slice it 3/16th. inch (about 4mm) thick, drain on an absorbent towel and use the slices just as they are to replace your regular sauce. I like to add sliced fresh garlic and torn fresh basil leaves under the tomato slices, then dress the pizza with cheese and desired toppings and bake as usual.

Sauce Ingredients / Re: Why not cook sauce? Isn't it already cooked before being canned?

You will probably need to drop the temperature down to 500 to 550F and put a screen under the pan to control the development of bottom crust color.

General Pizza Making / Re: Detroit Style in Wood Fired Oven

Heijko;

Save yourself the extra step of blending together the flour, salt, IDY, and sugar in a separate bowl, instead just add all of the flour right on top of the water in the bowl, then add the salt, sugar and IDY right on top of the flour (no need to blend in.....trust me), as you start the mixer the agitator will do all of the blending that's needed. Keep in mind also that as you increase the dough absorption you will need

to mix the dough a little longer to reach the development point where the dough pulls off of the bottom of the mixing bowl by itself.

I'm looking forward to seeing your next videos with higher dough absorption.

New York Style / Re: Heikjo's first attempt at NY style Lehmann (12" on stone)

No question about it, the new spiral agitator is giving you much better dough development. I might suggest that you add the water to the bowl first (before adding any other ingredients) as this will result in much more thorough and consistent flour hydration (your comments about using both agitators confirms this). Also, the videos of the new agitator mixing the dough shows that your dough size is too small for the bowl capacity. You will note when watching this video that the dough makes little contact with the sides of the bowl, only the bottom so mixing action still isn't what it should be. To address this I would make two more doughs, one with 50% more flour and one with 100% more flour to see how the dough interacts with the side of the bowl. You should be able to see the dough pulling off of the bottom of the bowl by the time the dough is fully mixed. Once the dough is pulling off of the bottom of the bowl you can pour just a small amount of oil down the inside of the bowl and mix for 10 to 15-seconds, the dough should just about pop out of the mixer by itself. You had also asked about the water temperature, 30C/86F, is too warm for the water temperature when a mechanical mixer is used. Instead, the water temperature (before placing it in the mixing bowl) should be about 21C/70F which should give you a finished (mixed) dough temperature between 80 to 85F / 26 to 29C.

The finished pizza is really looking quite good with a pretty decent open, porous crumb structure. If you want to achieve an even more open crumb structure begin experimenting with increased dough absorption. Begin increasing the dough absorption in 2% increments until the dough becomes too soft to handle, then back down by 2 or 3% and that'll be the maximum absorption your dough will carry for your method of dough management.

With improved mixing action with the larger dough size and the lower finished dough temperature you should be able to get away with an additional 5% in dough absorption before handling becomes an issue for you.

Keep us posted, and keep those great videos coming!!! :)

New York Style / Re: Heikjo's first attempt at NY style Lehmann (12" on stone)

Kolo 101;

I don't know if they market in the U.K. or not but Galaxy Nutritional Foods is a good source for vegan and vegetable based cheese products. Just Google (Galaxy Nutritional Foods) to see their offerings which includes a vegetable based Mozzarella type product.

Neapolitan Style / Re: Mozzarella browning in WFO

I agree with Nick 57, if you feel that you must par-bake the crusts a much preferred method is to sauce the dough skin prior to par-baking, then remove from the oven as soon as the dough structure is fully set and the edges are starting to turn brown, dress as desired and return to the oven to complete baking. This is not as good as baking the pizza in the normal manner on a raw dough skin but it is pretty good if you thin slice the vegetable toppings and don't get too carried away with the amount that you use, also be sure to use only fully cooked meat toppings too. This is necessary due to the reduced time that the fully dressed pizza will be in the oven. One other thing, research that we conducted a number of years ago at

the American Institute of Baking showed that dough which had less than 2.5-hours of total fermentation time prior to baking exhibited a pronounced tendency to blister and bubble during the baking process.

Hang in there, we'll have you making better pizzas in short order. :)

Newbie Topics / Re: crust rising too much in the oven problems

P505;

All Right!! Now you're getting some bottom crust color. The crumb porosity looks good too. Your next series of experiments should center around using a pizza stone. Due to the more efficient heat transfer when baking directly on the stone the crumb porosity might also improve by getting a larger cell structure due to the improved oven spring when baking on a stone, you might even find another pizza that you like as much as the one you are making right now.

I'm glad to hear that you really like the pizza you're making now, we're all here to help.

New York Style / Re: help please

Most operators just make their breadsticks using their regular pizza dough. It's a good way to use any left over pizza dough. You can par-bake the bread sticks and store them in a plastic bag or dough box at room temperature, then to fill an order just give a quick pass through the oven to thoroughly reheat, brush with a little garlic flavored butter oil and serve. If you want to make a dough just for your breadsticks again use your regular pizza dough formula and just increase the fat (oil or shortening) level to 5% and that'll make a softer breadstick.

Dough Clinic / Re: Bread sticks

Three tools that you will find coming in handy are a low cost thermometer for measuring water and dough temperature (automotive stores carry good dial type thermometers used for measuring the air conditioning temperature for about \$7.00, Walmart carries them once in a while too) An electronic scale for measuring ingredient and dough weights is invaluable (cost about \$35.00 off of the internet) and a pizza stone sized to fit into your oven along with a pizza peel (I've found both recently at our local Ace Hardware store).

New Forum Members / Re: hi, I am a mother of a 9 year old.

P505;

If you are baking the pizza just on a screen that might be the problem right there. Home ovens have two main problems when it comes to baking pizza, 1) They don't really have any bottom heat so vertical positioning of the pizza in the oven rack is critical. 2) Heat recovery is poor, to say the least. If you bake your pizzas on a pizza stone the stone holds latent heat which is released into the bottom of the pizza when you place the pizza on it and the mass of the stone (latent heat) helps to overcome the heat loss when you open the oven door. Baking your pizza directly on the stone should give a significant improvement in crust color development,

New York Style / Re: help please

P505;

The pizza looks pretty good but still has a light crust color. What does the bottom of the pizza look like? I'm really beginning to think that you might have an oven issue which is responsible for the lack of crust color development.

New York Style / Re: help please

We have had two major additions added onto our home in addition to decks located

at the front and rear of the house. We required that all work be done only by licensed contractors from the immediate area. In all cases we had a contract developed in which it was stated that all construction shall be in full compliance with all city (Manhattan, KS) and county (Riley) building codes even though we live outside of the city. The payment money was held and payable through a local escrow company with agreement that 25% of the total charges would be held until the work was inspected and passed by a city/county inspector (we had to pay a small fee for the inspection). This keeps everything above board between me and the contractor, and I have piece of mind that the work is being done as right as possible, it also ensures that there will be no post construction surprises in the form of mechanic leans due to unpaid materials that were delivered to the work site.

What happens when you don't require this?

These are all things that are close to me and I can point them out.

1) Home was built within the roadway easement. Problem: If the county decides to run underground utilities or widen the highway the house will need to be moved (not likely as it's a berm home). Their title carries this stipulation so the owners have been unable to sell the home...can't imagine why??

2) Garage was built right over the underground utilities contained within the roadway easement....you guessed it, when those utilities need to be replaced there will be a problem. Oops!

3) Another home, essentially right across the street from #2 above, same thing. Our county code stipulates minimum set-back from all easements, it pays to know where they are and what the required minimum set back is before breaking ground.

Chitchat / Re: Catch a contractor

A 60-quart Hobart or a spiral mixer should work well. You will only be making about 50# of dough a day to start so your dough size will be based on about 30-pounds of flour. A 50-pound (flour basis) spiral or a 60-quart planetary mixer will handle up to 50-pounds of flour so either mixer will be big enough to provide you with enough dough capacity for future growth. The mixing of the dough is not the critical part, it's all in how you manage the dough, without effective dough management you cannot have a consistently performing dough or a consistent quality finished crust.

Prep Equipment / Re: Mixer for Neo-Neapolitan?

You might also want to post your question on the Think Tank at the PMQ (Pizza Marketing Quarterly) web site <www.pmq.com> which is visited mostly by pizzeria operators.

Resources / Re: GFS Store vs Restaurant Depot vs Clubs vs Sysco/US Foods

Out of curiosity I did a quick Google search (flat cast iron disks) and found a 17-inch disk. It has handles which could easily be ground off as well as provisions for legs which could be ground off too and you would have one that is 17-inches in diameter. That was just one item I found there, you might take a look to see if there is something there that might work for you.

Stones/tiles/steel, Pans & Accessories / Re: Making a Bigger Pizza

Do you clean your pizza stone?

Stones/tiles/steel, Pans & Accessories / Re: Making a Bigger Pizza

If it was very easy to open and very slack I would still say that it was over

fermented but not yet to the stage where the dough becomes "bucky" extremely elastic and difficult to open.

Dough Clinic / Re: Hard to close dough ball after bulk CF?

How about an 18" stone for your oven?

Stones/tiles/steel, Pans & Accessories / Re: Making a Bigger Pizza

Clarkth;

That picture is showing me a very over fermented dough, so much so that it is bucky and very elastic resisting opening into a skin.

Try this for dough that you can use all week long:

After mixing the dough divide into desired weight pieces, form into balls, oil each dough ball, place into individual plastic food bags (NOT ZIP-LOCK) twist the open end to form a pony tail and tuck it under the dough ball as you place it into the fridge, leave the dough balls in the fridge in this manner overnight then leaving the dough balls in their bags place into your existing plastic containers but DO NOT tightly lid, you can now stack them so they don't take up so much space. Managed in this fashion you should be able to make pizzas (at least better than you are right now) all week long.

To make a pizza just remove a container and allow it to rest on the counter top for 1-hour then turn the dough ball out of the bag by inverting the bag (the dough will strip the bag inside out as it falls from the bag), let the dough fall onto a floured surface and begin opening the dough into a skin. Let me know how this works for you.

Dough Clinic / Re: Hard to close dough ball after bulk CF?

Are you trying to make a pizza using a par-baked crust?

New Forum Members / Re: New Member wants to fix chewy dough

Tijolo;

According to that information your flour has a protein content of only 10% which is very low for making a pizza dough which will receive more than an overnight cold fermentation period. See if you can find a flour with six (6) grams or more of protein for a 50-gram portion. This will give you a flour with 12% or moire protein content. If you can't find a flour wit more protein see if you can find some vital wheat gluten aka (glutina de trigo en polvo). With the dry gluten you should add 3-grams per 100-grams of your present flour, this will give you an equivalent protein level of 13% which should work fine for you.

Dough Clinic / Re: Dough stretches too much (can't pick it up)

Enchant;

It's actually pretty easy to cut a taper on a piece of wood, stand each board on edge and use a tapered cutting jig on your table saw. Rather than going into the details of how to make one here, just Google: Cutting tapers using a jig on a table saw.

Stones/tiles/steel, Pans & Accessories / Re: Wooden peels commonly used for neapolitan pizza

Tijolo;

And don't forget to pick up a thermometer too while you're at it. You will want to record the temperature of the tap water that you are using as well as the temperature of the dough after you are through mixing/kneading it. Does your flour bag provide and nutritional information on the flour? If it does there should be something about the amount of protein provided per serving, this would be useful

information for us too. After the cold fermentation period remove the dough from the fridge and allow it to warm AT room temperature until the internal dough temperature reaches 50F/10C before you begin opening the dough ball into a pizza skin.

Dough Clinic / Re: Dough stretches too much (can't pick it up)

If you can get a malted flour try to get one with a protein content in the 12 to 14% range, personally, my favorite is in the 12.2 to 12.8% protein content range.

If you can find malt locally look for a diastatic activity of about 20-litner. if it is in powder form the use level will be about 0.5% of the total flour weight. If it is in a liquid/syrup form the use level will be about 2% of the total flour weight.

Since you are still having a problem with top crust color (even with 3% added sugar) I'm guessing that the issue is with the oven, either not hot enough or the pizza is being baked at a position too low in the oven (raise the pizza to a higher position in the oven for baking).

New York Style / Re: help please

Yep, that's the one we're looking for.

New York Style / Re: Heikjo's first attempt at NY style Lehmann (12" on stone)

I stand corrected, you are using a dough hook, it sure doesn't look like a dough hook in the photo though. However, it appears that you are using what is referred to as a "J" hook, an old design that has been replaced some time ago (actually back in the 70's) with the reverse spiral dough hook which is commonly referred to as a "dough mixing arm" to differentiate it from the "J" hook. The problem with the "J" hook as you are well aware is the problem of the dough climbing up on the hook and getting a free ride with little or no mixing action. The problem is worse with strong/stiff doughs like some pizza doughs are so the addition of some additional water to the dough may help things a bit as will mixing the dough in a higher speed as the increased centrifugal force generated at the hook by the higher speed tends to throw the dough off of the hook better for improved mixing action. You might want to look into the availability of a reverse spiral mixing attachment for your mixer, when using one of these the dough cannot climb up on the attachment so it's constantly being worked for improved gluten development, and the best part of all.....you don't need to stop the mixer periodically to pull the dough down off of the hook.

One other thing, by putting the water into the mixing bowl first, then the flour with the salt, sugar and IDY (your level is a bit high) and mixing for about 2-minutes at low speed, then adding the oil and mixing for another minutes at low speed followed by 8 to 10-minutes at medium speed will result in improved mixing action regardless of the agitator design.

New York Style / Re: Heikjo's first attempt at NY style Lehmann (12" on stone)

The function of the added sugar is to provide nutrient for the yeast to feed upon and to provide residual sugar to help with crust color development which is especially important when using an un-malted flour and baking in a home oven or other oven that cannot bake at a temperature of 700F or more to develop crust color. Some flours have malted barley flour added to them as a source of diastatic (enzyme active) malt which creates sugar through the enzymatic conversion of damaged starch in the flour by enzymes present in malt. The malt can be added by the flour mill as "malted flour" or it can be added independently by the baker. In

either case the sugars created by the malt play an important role in dough performance since it provides the necessary nutrient for the yeast to feed upon as well as providing sugar to aid in crust color development during baking.

Oil, depending upon the type of oil used can contribute flavor (olive oil, canola oil, sesame oil are but a few examples). Oil also entraps flavors/aromas which are generated during the baking process and in that manner oil adds to the flavor of the finished pizza. Oil in the dough helps to create a water/moisture barrier to prevent migration of moisture from the top of the pizza into the dough/crust which can ultimately lead to a wet, limp crust or at least lack of crispiness. Oil also acts to seal the cells in the dough so they are better able to retain gas, air pressure and moisture expansion resulting in a more open, porous crumb structure which greatly impacts crust eating properties, bake out, and crispiness. Along these same lines the oil lubricates the dough structure which further enhances the ability of the dough to expand during the critical oven spring stage of baking. And lastly, oil contributes to both the tenderness of the finished crust as well as overall eating/mastication properties of the crust. At higher levels (above 3%) it may also contribute to the crust color characteristics by providing a more vibrant (as opposed to dead/chalky) crust color. This is due to the oil on the surface reflecting light better than a dough made without the addition of oil.

Dough Clinic / Re: Neapolitan Dough with oil and some sugar

A couple of things that I'd like to weigh in on, the mixing agitator that you are using is actually designed for mixing rich (high fat and high sugar) pastry dough, it is not well suited for mixing bread or pizza dough. The reason for this is because the dough gets all wrapped up in the agitator and doesn't receive very efficient mixing action or gluten development. I can see the indications of this in the photographs of the dough where it doesn't appear to be smooth, but instead, it has a rough appearance to it due to the under mixing. What you need to use is a "dough hook" aka dough arm designed specifically for mixing bread and pizza dough. With the correct mixing attachment the mixing time will probably be about 8 to 10-minutes (use a clock to time how long the dough is being mixed, also if at all possible mix the dough at a higher speed. If you are presently mixing at 1st. speed go to 2nd. speed with the dough hook. The way the dough is interacting with the existing agitator I doubt that increasing the mixing speed would help any. I also notice that the crumb structure is really quite dense, more like some breads than pizza crust. To address this I would suggest increasing the dough absorption by at least 3%, possibly 5%. When combined with the improved mixing action afforded by a dough hook the dough should handle fine and you will see improved oven spring which will result in greater crumb porosity which in turn will reward you with both improved crust color as well as a improvement in crispiness.

New York Style / Re: Heikjo's first attempt at NY style Lehmann (12" on stone)

Did you oil the dough balls? This is a good way to prevent that annoying dry crusty skin from forming on top of the dough balls, if after oiling the dough balls you still experience the formation of a crust on the dough balls try placing a sheet of plastic over the oiled dough balls, that usually does the trick.

Newbie Topics / Re: Beginner recipe for hand kneaded, home oven pizza?

P505;

What is your oven temperature? That crust looks awfully light in color. Be sure to follow Peter's suggestion to add about 3% sugar to your dough formula. Also, is that the screen you're baking the pizza on that I see sticking out from under the

pan? If it is, it doesn't appear to have been seasoned. You should season any baking pans or screens unless they already have a dark colored finish. To season the the pan/screen wipe it down both inside and out with corn oil then place it into a 425F oven for 20 to 30-minutes, remove from the oven and allow to cool and repeat the process. You will see an amber color beginning to develop, this is the seasoning, it will continue to darken with use (that's what you are looking for). Remember to NEVER soak any seasoned pan in water, instead just wipe it down and place into the oven to force dry for a few minutes before putting away for the next use.

New York Style / Re: help please

P505;

If your dough is fermenting too fast, especially on the first day this is a good indication that your dough might be too warm. To correct this try using colder water, I know that your tap water isn't very cold so I'd suggest storing the water that you will use for the dough in the fridge at least overnight and then using that as your only source of water in the dough, this should effectively lower the dough temperature to allow for better control of the rate of fermentation, of course you can also float a few ice cubes in the water too to get your cold water for the dough. Don't worry about the humidity it isn't going to have any impact upon the dough at this point.

New York Style / Re: help please

P505;

You should be making a "fixed" diameter/size pizza so if you want to have a thicker finished crust just increase the dough scaling weight for that particular size pizza. If you can provide me with the diameter of the pizza you're making I can suggest a new scaling weight for a thicker finished crust.

New York Style / Re: help please

P505;

I'd like to suggest a change in the way you are mixing your dough.

Put the measured cold water in the mixing bowl first.

Add flour, salt, sugar, and yeast.

Mix for 2-minutes at low speed.

Add the oil.

Mix 1-minute at low speed.

Then mix for 8-minutes at medium (2nd.) speed.

I advise taking the dough directly to the bench for scaling into desired weight pieces, forming each piece into a ball, oil each dough ball, place into individual plastic bags, twist the open end to form a pony tail and tuck the pony tail under the dough ball as you place it in the cooler. The dough will be ready to use after 18-hours but can be held in the cooler for 48-hours or more.

Please keep us posted on your progress.

New York Style / Re: help please

Are you vending from a pizza cart, truck or trailer? Do you have anything to keep the dough cold? How are you opening the balls into skins? How are you baking the pizzas? Where do you make your dough? Do you have access to refrigeration or any kind of a freezer? Answers to these questions may help in finding a dough management procedure that will work better for you.

Neapolitan Style / Re: Dough timing commercial enviroment

For a same day pizza dough as you are making you are going to need to have more

mechanical mixing than you are presently giving the dough.

I suggest the following:

- 1) Adjust the water temperature to 70F.
- 2) Put water in the mixing bowl first followed by the flour, salt, sugar and IDY.
- 3) Mix the dough at low speed for 3-minutes then add the oil.
- 4) Mix one more minute at low speed.
- 5) Mix the dough at medium speed for 8 to 10-minutes.
- 6) Put mixer in low speed and pour a very small amount of oil down the inside of the bowl, stop mixing after 15-seconds or so.
- 7) Take the dough straight to the counter top for scaling and balling and manage the dough by your normal manner.

I think you will find this dough easier to handle and open into a skin.

Let us know how it works for you.

Newbie Topics / Re: Help figuring out if I undermixed my dough

Andre;

It's not so much the difference in amount of acid produced (that's controlled through the amount of fermentation) but instead the type of acids produced. You can get excessive acidity with either room temperature fermentation or cold fermentation, it'll just take longer for the cold fermented dough to develop the acidity and additionally, there will be a perceived change in flavor (good or bad depending upon your flavor preference) between the two different fermented doughs.

Yeast loves an acid environment. It will do quite well all the way down to about 4.2pH. If you want to see how pH impacts yeast fermentation make two identical doughs, into one dough put about 20-grams of baking SODA into the water for each 500-grams of flour weight. Then add the same amount of cream of tar-tar to the water in the other dough. The dough with the cream of tar-tar will ferment faster due to the acidity (lower pH) of the dough while the other one will exhibit slower fermentation due to the higher pH of the dough.

If you wish to read more about this get a copy of Baking Science and Technology, by E.J. Pyler (author), your local library may have it or you can order it from Amazon. This is an excellent book on all things pertaining to baking.

Newbie Topics / Re: Tips for preventing the pizza to become too sour

John;

Not a problem. Feel free to give me a call at 785-537-1037. Just drop me an e-mail first to let me know about when you plan to call so I can be at my desk to receive your call preventing us from having to play phone tag.

<thedoughdoctor@hotmail.com>

Dough Clinic / Re: Arabic/Lebanese bread as base for pizza?

When most of the major pizza chains were started, late 50's to early 60's, pizza was not as mainstream as it is today and to a great extent it was a carry-out food (actually considered to be a snack back in those days) so for the most part people didn't have a good grasp on what a good or bad pizza really was, it it was pizza, it was good! That 's a good thing because it indoctrinated generations into the love of pizza which has brought us to where we are with pizza today, and with more pizza opportunities/presentations we all tried those new/different pizzas and eventually developed more specific tastes for certain types and kinds of pizza. It's this diversity in pizza that has been responsible for its long lived popularity as America's favorite food.

Chitchat / Re: How Pizza Works

Andre;

Yeast, like all micro-organisms, establishes an environment favorable for its own growth. Since yeast is an acid loving organism (it performs better in an acidic environment) it produces acids as a by product (those are the same acids that ultimately end up giving the finished crust a sour or acidic flavor). In cases where we need to have fermentation proceed as rapidly as possible we will acidify the dough by adding a little dilute acetic acid (vinegar) to slightly acidify the dough. You should also be aware that due to the production of a different balance of acids produced during fermentation there is a difference in finished crust flavor between dough that is fermented at warmer temperatures v/s colder temperatures (cold room). Everybody has a preference in crust flavor and this is why some like to ferment their dough at room temperature while others like to ferment their dough under refrigerated conditions. My own personal preference is the flavor achieved through fermentation at refrigerated temperature.

Newbie Topics / Re: Tips for preventing the pizza to become too sour

That pizza looks awfully good to me!!! :)

Dough Clinic / Re: My dough mixing process

Oops, just realized your location. To answer my own question, probably not. So, what to do? The internet is a good source for just about anything you might need, and if things are really difficult to come by think "cake pans" Cake pans can work well as a pizza pan. You might need to season them to give them the desired dark color and even if the pan is deeper than what you need, you can still make a decent thin crust pizza in a deep side cake pan, plus on the bright side you can use the same pan to make deep-dish pizzas too. Some will even use a frying pan to make their pizzas in, just make sure the handle doesn't go into melt down when you place it in the oven, then too you if thin crust pizza is on the menu you don't even need a pan, just find yourself a piece of steel or aluminum about 7mm or thicker that will fit into your oven, make the pizza on a wood peel with a little peel dust (corn meal, semolina flour, rice flour of bread flour, or any combination of these) under the dough to help it slide from the peel onto the hot baking surface.

Stones/tiles/steel, Pans & Accessories / Re: Pizza Pans

Do you have a restaurant supply store near you?

Stones/tiles/steel, Pans & Accessories / Re: Pizza Pans

A little carbon dioxide in the container to blanket the dough is a good thing but having the container so tightly sealed that it allows the container to build up pressure is not especially good for fermentation, a better approach might be to drill a small hole in the lid to act as a pressure release. Even doing this the humidity in the cooler will not impact the dough, now take the lid off, and we have a whole different story.

Dough Clinic / Re: Humidity in wine cooler used for dough...?

Andre;

There are three things that drive/control yeast fermentation, these are TIME, TEMPERATURE and pH/acidity. The temperature of the dough after mixing is so important because the higher the temperature the faster the rate of fermentation progresses and the lower the temperature is slower it progresses, when we place the dough into the fridge/cold room it DOES NOT chill down to a lower temperature right away, the dough itself is an excellent insulator so it retains the

heat (temperature of the dough after mixing) for a significant length of time after placing the dough in the fridge allowing it to continue to ferment at a rate dependent upon the temperature of the dough. As a secondary effect when the dough temperature is too warm and too much fermentation occurs after the dough is placed in the fridge the density of the dough changes (becomes less) and it becomes an even better insulator so now the dough becomes even more difficult to cool down to a point (40F/4 to 5C) where the fermentation rate is controlled. You can see this for yourself by making a dough, measuring the temperature immediately after mixing, then placing it in the fridge and measuring the temperature of the dough every hour thereafter to see how long it will take for the dough to reach 40F/4 to 5C, which is the temperature that the dough needs to reach to become stable enough for long term refrigerated storage.

Newbie Topics / Re: Tips for preventing the pizza to become too sour

James;

I can't speak to the Grimaldi's near to you as I have only been to one of the original "Patsy's" at the base of the Brooklyn Bridge, it is indeed a great pizza though a little on the tough/chewy side. I would think that any good New York pizza dough and sauce formula found here should at least get you pointed in the right direction and give you something to work on. Remember, unless you have an oven that is capable of reaching at least 700F it might take some "doing" on your part, but in any case you should be enjoying some great pizzas along the way.

New York Style / Re: Grimaldi's Clone Recipe - Can We Figure It Out?

If the containers are tightly sealed....not the best condition for long term storage of the dough, but that's a whole different story, to be specific to your question, no (we're talking about an air tight, water/moisture proof container, so the outside relative humidity will not impact the dough in the container. The temperature will, but not the humidity.

Dough Clinic / Re: Humidity in wine cooler used for dough...?

Peter;

How are you able to dig that stuff out so easily??? You're the man!

Thanks,

Resources / Re: NY Water

If you still need more convincing, I wrote an article on this exact topic in PMQ Magazine (In Lehmann's Terms) a short time back. You should be able to access the archives at <www.pmq.com> to read the article. By the way, the best New York pizza I've ever had outside of NYC (agreed, I've had some bad ones there too) was on the island of St.Thomas, Pizza Amore, located in the mall across from the post office. Where did they get their water from? From the tap of course, and since St.Thomas doesn't have any fresh water their entire potable water supply comes from collected rain water that is processed into potable water. About the closest to New York that water has ever been is in the fact that you can say that it might have, at one time, fallen in NYC, can't prove it though.

The worst water that you can use is distilled/de-ionized water. Regular well water, as long as it doesn't contain sulfur, is just fine. If your water is heavily treated you might want to possibly consider looking at one of the spring waters that still has a full compliment of minerals.

Resources / Re: NY Water

You bet!!!

Shop Talk / Re: Electric Pizza Ovens?

Ditto.

Newbie Topics / Re: Multiple pies - keep warm?

DB;

I am proposing that the rest period is not necessary in this case, so just add 6-minutes in second speed to the 2-minutes that you are already mixing in second speed and you should be good.

Your bagging of the dough is just about right, the only change that I suggest is to try to pull the bag down closer to the dough ball so you don't leave those empty spaces in the bag sticking out as shown in the photographs. Be sure to twist the open end of the bag at least several times before tucking it under the bag as you place it in the cooler/fridge. Otherwise it looks good.

Dough Clinic / Re: My dough mixing process

For your application I would recommend a deck oven from one of the major manufacturers like the Bakers Pride Model EP-1-8-3836 <www.bakerspride.com>. We had one of these ovens when I was at the AIB and it served us well for making pizza for over 20-years. You can anticipate a baking time of around 8-minutes at 500F with an electric oven of this type. The top heating elements are not generally used when making pizza unless there are a lot of toppings on the pizza, in that situation the top heat helps to control moisture on the top of the pizza.

Shop Talk / Re: Electric Pizza Ovens?

Wow!!! Your videos are great! I would like to offer a couple of suggestions based on what I'm seeing.

1) I don't think you need to allow for a hydration time since the flour will hydrate just fine with the type of mixing action that you're getting.

2) Adjust the total mixing time in second speed to a total of 8-minutes.

3) With the mixing bowl empty and installed on the mixer, raise the bowl to its highest position (as if you were going to mix a dough), then check the clearance between the mixing arm and the bottom of the mixing bowl. It should be about 2.5 mm/1/8-inch. It looks like yours might be greater than this. I'd suggest checking it just to be sure as it does affect the way the dough mixes. If it does require adjustment, there is an adjustment nut on the crane assembly that lifts the bowl into position. Be careful when making any adjustments as you don't want the mixing arm to be contacting the bowl, you can always tell when this happens as you will hear a "ping" each time the agitator contacts the bowl.

Other than that the amount of dough in the bowl looks good for the minimum and the dough is looking pretty good too.

Dough Clinic / Re: My dough mixing process

Something to keep in mind when thinking about adding steam to an oven that was not specifically designed for steam injection. When steam is injected into the oven it combines with the acids being volatilized by the oven heat (acids: acetic, lactic and propionic) are produced through yeast fermentation and are volatilized during baking. These acids are VERY corrosive and in time (not necessarily a long time) will corrode the entire inside of the oven as well as any flue pipe/stacks. Ovens that are designed for steam are specially constructed to take this into account as are the flue pipe/stacks. You are much better off in this case by just spraying the dough with water before placing it in the oven or placing a sheet pan with water in it to

help humidify the oven during baking.

Case in point: A number of years ago I was called out to a large commercial bakery producing a product which required steam in the oven during baking to prevent the product from bursting during baking. Their oven was not designed for steam injection but they did it anyways. Two months later the line was shut down by the USDA inspector due to rust on the product (coming from the oven). Not to worry though, they lined the entire inside of the oven with stainless steel panels, problem solved! Well.....not exactly. On my next visit to the plant about a year after my initial visit I was asked to look at their oven to see if I could determine why they could not maintain tension on the oven belt/conveyor. I told them that we would need to look at the oven after it was shut down and cooled to determine what the problem might be. We never made it to that point. A couple hours later the bakery floor shook and the oven was flopping around like a beached fish. The frame in the oven had rusted through causing the oven to collapse in the middle (the weakest point). What a sight to see, a 200-foot long oven squirming around on the floor, at that point the new oven at \$500,000.00 which they opted not to buy (opted instead to add steam to their existing oven) was beginning to look like a pretty good deal.

Off-Topic Foods / Re: Off topic equipment question

American Metal Craft <www.amnow.com> also carries them along with a vast selection of other types of pizza pans, disks, screens, etc.

Newbie Topics / Re: Source for cutter pan

John:

Pizza is one of what we call ancient breads just like bagels, pretzels, French breads and flat breads. All of these breads have one thing in common, they are all made from essentially the same dough formula, in fact, you can make all of these bread types from the same dough formula (flour:100%; salt: 1%; compressed yeast: 1%; water 50%) There are a few differences in the way the dough is manipulated to make some of the different products, for example the dough is first boiled and then baked to make bagels, or it receives an alkali wash just prior to baking to make a pretzel, the other products are all just formed into a thin skin and baked at a higher or lower temperature to produce the different types of breads. In short, if you were to take a flat bread dough and form it into a thin sheet (skin) dress and bake it you would be making a fairly typical thin crust pizza. Yes, it can be easily baked in an air impingement oven but to get the best results the pizza should be baked on one of the Hearth Bake Disks from Lloyd Pans <www.lloydpan.com> with the temperature set at 500F and a baking time of around 4-minutes. A number of years ago Pizza Hut offered a pizza made on a wheat flour tortilla crust. In this case the tortilla was already made, it was just dressed and baked. More recently we have seen some interest in using Greek pitas (non-pocket) for the pizza base. These are fairly successful BUT what you end up with at the end of the day is nothing more than a pizza made on a par-baked crust, just like the pizzas you buy from the frozen food case at your local supermarket.

I hope this answers your question.

Dough Clinic / Re: Arabic/Lebanese bread as base for pizza?

Andre;

You are correct on all of your points.

The purpose of the oil on the dough ball is to help prevent it from sticking to the bag.

If you are looking for 120-hours refrigerated dough life you should reduce the

finished/mixed dough temperature to 70 to 75F/26 to 29C, you are correct.

The normal targeted finished dough temperature for up to 3-days refrigerated storage is indeed recommended at 80 to 85F/ 26 to 29C.

Yes, you determine the temperature of the dough by sticking a thermometer in it.

If you are mixing your dough by hand/manually the same rules still apply but don't expect to get as consistent results due to the great variation that you will experience in mixing/dough development. Mixing the dough by hand is fine for making pizzas at home where inconsistencies provide a level of interest in the pizzas but if you want to make a consistent product the use of a dough mixer will provide greater overall consistency. When mixing the dough by hand there is very little heat generated due to the mixing process for this reason I usually recommend using water temperature at or slightly below the desired dough temperature.

Newbie Topics / Re: Tips for preventing the pizza to become too sour

The thermostat was one of the start up problems I experienced too.

They were very prompt at getting us a replacement after we called them about it.

Pizza Ovens / Re: Il Fornino Ovens

Peter;

I had a marketing friend who used to say that the name was everything, just like you said. He explained that you can have dead chicken baked with cheese sauce or you can have chicken cordon-bleu, both are one and the same, one sells well while the other one not so well, and if the perception meets the customer's expectation to the name or description they will generally respond in a predictable manner, he would go on to say that "window dressing" was effective at selling a product the first time but repeat sales were dependent upon the product meeting those expectations in a positive light in the eyes of the consumer. I've always remembered this and that is why I referred to the pizza in my story as an "Old World Pizza" as opposed to a more specific name like New York, New Haven, etc. which might trigger a response like "This is not a New York pizza!" We were banking on the old world connotation to leave their expectations open ended so they wouldn't be judgmental but instead decide for themselves if they liked the pizza or not. They liked it and as they say, "The rest is history". One more and I'll shut up. I'm in London, I place my breakfast order which is fried eggs, fried potatoes (everything has to be fried)and black pudding. The waitress asks "Do you know what black pudding is sir?" I respond "Yes, it's fried (has to be fried) blood sausage made with blood and oatmeal", don't ask what else is in it. I got my breakfast order as I requested. Do you get the impression that black pudding is just a gussied up name that possibly didn't meet with everyone's expectations, especially those of Americans?

And I might add that the breakfast was very good. One more, how about Kopi Luwak coffee? Sounds pretty good right?? The other name for it is cat poop coffee, hummmmm which sounds more appetizing? Which name sells more coffee? :) Ya just gotta love marketing! You can gift wrap dogie dodo and sell it once but you can make coffee out of cat poop and with the right name make a fortune.

Dough Clinic / Re: reducing carbs

Andre;

The reason for leaving the container uncovered for the 3-hour period is to allow for more efficient cooling of the dough and to prevent excessive moisture from forming

in the container due to condensation.

You can add some yeast to a sourdough but it does influence the flavor and you do not get a true sourdough flavor.

The amount of yeast can remain constant IF you manage your dough properly and effectively, if you do not manage the dough well you will get significant variation from dough to dough regardless of the yeast level. We use the same yeast level if we are cold fermenting the dough for 18-hours or 5-days (120-hours). The only difference is if we are targeting for 120-hours we reduce the targeted finished dough temperature to 70 to 75F/21 to 24C.

Newbie Topics / Re: Tips for preventing the pizza to become too sour

How many pizzas per day do you anticipate making?

How many pizzas do you anticipate making during your busier periods, like from 5 to 9:00 p.m. on a Friday or Saturday? Or whatever your busiest day/time will be.

I'm a little concerned over your selection as it might be to slow for "pizzeria" use if you are going to be doing any kind of volume.

Shop Talk / Re: Electric Pizza Ovens?

G.R.;

Reminds me of the time I opened a pizzeria in Tuscon, AZ. One of the pizzas that we offered was simply called an "Old World Traditional Pizza" It was offered in a 12-inch format at first but later expanded to include a 14-inch by popular demand. We used the standard dough ball for the crust, added a few cloves of sliced garlic, Stanislaus 74/40 Tomato Filets for the sauce, 4-ounces of Grande brine pack fresh Mozzarells cheese (used one 4-ounce ball peeled like an orange) and topped it with a few fresh basil leaves at the very end. It looked GREAT! It sold at a \$2.00 premium but was actually the cheapest (cost wise) pizza they made and it became a best seller. Ain't consumer perception wonderful? :)

Dough Clinic / Re: reducing carbs

Peter;

That's the one.

Your help is appreciated.

Neapolitan Style / Re: Dough timing commercial enviroment

Ryan;

Velveeta is a processed cheese, some will go so far as to say that it is "fake" cheese. Different sources will give different ingredients (whatever the case, I'm sure Kraft Foods isn't going to be publishing the exact formula anytime soon). In my "neck of the woods" Velveeta cheese got its reputation from being the cheese half of macaroni and cheese and possibly a pasty/gummy cheese sandwich once in a while. Hey! We were kids and didn't know any better.

Dough Clinic / Re: Marino's pizza

I think most will agree that the dough is much easier to stretch out into a skin if it is allowed to temper AT room temperature for a period of time (I normally recommend 2-hours or until the center of the dough balls reach 50F). I see that you are using "00" flour. This flour is not malted so you do not have much sugar available to support fermentation (2 to 3-hours at most), and since your dough formula doesn't contain any sugar I'm betting that the yeast is running out of nutrient to support good yeast activity aka fermentation. Unless you have an oven that will reach 700 to 800F or more you probably don't want to be using "00" flour, instead try using a malted bread type flour or to use your existing flour add 2%

sugar to the dough formula.

Dough Clinic / Re: Dough not coming out smooth after kneading

If you will e-mail me at <thedoughdoctor@hotmail.com> and request a copy of my Dough Management Procedure I will gladly send you a copy. This is a procedure that is followed by many retail pizzerias and with just a little modification, most of the big box pizza chains too.

Neapolitan Style / Re: Dough timing commercial enviroment

Andre;

Oops! I forgot to say that after you leave the dough uncovered in a bowl in the fridge for about 3-hours to cover it to prevent drying.

Both methods described work well, one method requires that you keep track of time so you can come back to it after 3-hours to lid the container thus preventing the dough from drying out. The other method where you place the dough into a plastic bag once the dough is placed in the fridge it requires no further attention until you're ready to begin making pizzas.

The yeast amounts shown are typical yeast levels for the three common types of yeast used to make pizza. All of the yeast levels shown produce similar/equivalent fermentation.

The amount of yeast used typically does not change if you want to keep the dough in the fridge for a longer period of time. That's why you put the dough into the fridge, to suppress fermentation.

If you are making a sourdough, yeast is not added. If yeast is added you will not achieve the desired tartness in the crust. In a biga I usually put about 25% of the yeast amount into the biga and then add the rest back when I make the dough.

You are correct in your assumption but wrong in your math. Compressed yeast: 1%; ADY 0.5%; IDY 0.375% as you can see ADY is used at 50% of the compressed yeast level and IDY is used at about 38% of the compressed yeast level.

You make mention of a 3-hour fermentation time, do you really only want to ferment the dough for just 3-hours? That's more like an emergency dough which is a totally different type of dough producing a finished crust without the flavor level of a cold fermented dough that has been fermented in the cooler for at least 18 to 24-hours.

Newbie Topics / Re: Tips for preventing the pizza to become too sour

Norma;

Those pizzas look ABSOLUTELY GREAT!

It does indeed sound like the pans might need a little more seasoning. I'd suggest using corn oil as it seasons pans very well (good for seasoning pans but bad for a pan oil as it will continue to polymerize and eventually the inside of the pan will look a lot like the outside).

Stones/tiles/steel, Pans & Accessories / Re: Pizza Pans

What kind of pizzas are you planning to make and what kind of production capacity are you looking at?

Shop Talk / Re: Electric Pizza Ovens?

Andre;

Management of the dough is everything that you do with the dough from the time it is mixed until you open it into a pizza skin.

Cross -stacking is a term used for retail pizzeria operators, if you are only making a few dough balls instead of cross-stacking you have two options: 1) place the dough

ball into a suitable sized container, leave it open when you place it in the fridge and allow it to remain uncovered for about 3-hours (be consistent with the time). 2) Oil each dough ball and place them into individual bags (like food bags or bread bags), twist the open end to form a pony tail and tuck the pony tail under the dough ball as you place it in the fridge.

Scaling the dough is the act of weighing the dough into individual pieces (1-piece = enough dough for one pizza crust).

Balling the dough is the act of forming each scaled dough piece into a round ball.

Scaling and balling are important steps as they allow for more consistent dough performance when forming the dough into a pizza skin.

The correct amount of yeast to use is dependent upon a number of factors: Type of pizza being made, dough management parameters, and type of yeast being used are the main factors. With regard to the type of yeast used here are the basic yeast levels for the different types of yeast: compressed yeast: 1%; active dry yeast: 0.5%; instant dry yeast 0.375% (all percentages are in bakers percent based on the total weight of flour used in the dough).

Newbie Topics / Re: Tips for preventing the pizza to become too sour

If the pan shown in the picture is the pan you're baking in....bad news. The bright pans simply reflect too much heat away from the pizza to be effective especially in a home oven. I also highly recommend the use of a good pizza stone for baking but if you must use a pan it should be well seasoned before using it. To season a pan wipe it down, inside and out with salad oil then place it in the oven at not more than 425F for about 30-minutes, remove from the oven and repeat. Do this two or three times or until you see an amber color beginning to develop. This color will darken with use which is desirable. **DO NOT SOAK A SEASONED PAN TO WASH IT**, instead, just wipe it down and place it in the oven to force dry it for a few minutes. Failure to do so may result in the seasoning peeling off like a bad sunburn and you will need to strip the pan of all seasoning and start all over again :(

Newbie Topics / Re: A few newbie questions (crust problems + taste)

Your mixing time is way to short for what you are trying to make. The dough should be mixed just until it develops a smooth surface and has a satiny appearance to it. The problem is that you are using a flat beater for mixing your dough which is designed and intended for mixing batters, like cake batter and icings. As the dough develops gluten it will just cling to the agitator without getting any further development. To correct the situation you need to make a larger dough size so you can use a dough arm to develop the dough. Your mixer appears to be a Hobart A-200 so the minimum dough size should be based on 2000-grams of flour, with this you can safely mix the dough at #2-speed to achieve the level of gluten development needed. I would also suggest adding 2% oil to the formula using the delayed oil addition method for adding the oil. With this mixing method there is no need for further mixing, just take the dough directly from the mixer to the bench for scaling (I cannot comment on your present scaling weight as I don't know what pan size you are using) and balling, oil each dough ball and place into individual food bags (NOT ZIPPER TYPE BAGS), twist the open end into a pony tail and tuck it under the dough ball as you place it into the fridge, allow to cold ferment for 24 to 48-hours, remove the dough from the fridge and invert the bag allowing the dough to drop out onto a floured surface, then using a rolling pin or pie pin, roll the dough out to a size slightly larger than your pan, place the dough piece into your oiled pan (dark colored pan), cover to prevent drying and allow to rest for 45 to 60-minutes at room temperature, then using your fingers (oil your fingers to prevent the dough from sticking to them) push the dough out so it completely fits the pan,

cover again and allow to proof/rise for 45 to 60-minutes and you're ready to dress the dough and bake the pizza. Note: You may need to experiment a little with the exact rest period before fitting the dough to the pan as well as the proofing/rising time needed prior to dressing the dough and baking the pizza.

You may need to experiment with the dough absorption too as 75% is on the high side, 70% is more typical. Be sure to adjust the water temperature to 70F to give you a finished dough temperature of 80 to 85F. The yeast level does not need to be adjusted seasonably if you monitor and maintain a consistent finished dough temperature in the range suggested.

Dough Clinic / Re: My dough mixing process

Chris;

For a "same day" dough I would not change the yeast level but rather increase the temperature of the dough. In this case I would suggest targeting a finished dough temperature of 90F. Then bag and refrigerate the dough balls until about an hour before you want to open the balls into skins, allow the dough balls to warm to 50F and begin opening the dough into skins for your pizzas. As I don't know what your finished dough or water temperature is I cannot give recommendation as to what water temperature might be required to achieve the 90F target. That's fully half of the fun of learning to make pizza, experimenting with your dough and dough management procedure, the other half is eating the pizza or enjoying it with friends. You will notice that many of the regulars here mention making pizzas for both friends and family, once the word gets out about your pizza making skills your list of friends start getting longer....can't imaging why? :)

Dough Clinic / Re: Dough not coming out smooth after kneading

DCC;

You might look into incorporating different types of fiber materials into the dough formulation. Some of those that have been successfully used include oat fiber, pea fiber, micro-crystalline alpha cellulose, and even wheat fiber aka wheat bran. With a little luck you can incorporate these at levels to replace up to 25% of the flour weight, maybe even a bit more. Remember that all of these will have a rather high, delayed absorption so you will want to follow the rules for finding the absorption for multi-grain doughs. While many of the fiber materials were only available at one time in trailer load quantities I think you will find them more available now that the low carb craze has passed.

Dough Clinic / Re: reducing carbs

Chris;

That's really not very much fermentation at all, and the elasticity with resulting difficulty in opening the dough ball into a pizza skin all indicate a most probable lack of fermentation.

Just to keep things simple, try placing the dough into the fridge to ferment overnight after the bulk fermentation period, then remove the dough after 18 to 24-hours, allow it to temper AT room temperature for about 2-hours or until the dough reaches 50F then begin opening the dough into skins. You should find the dough much more extensible and it should exhibit better oven spring too resulting in better thickness as well as a more thorough bake resulting in a crispier finished crust.

To ferment the dough balls in the fridge the easiest way is to oil the dough ball(s) and place into individual plastic food bags, twist the open end to form a pony tail and tuck the pony tail under the dough ball as you place it into the fridge to ferment. To remove the dough ball from the bag just invert the bag over a floured

surface allowing the dough ball to drop out, then proceed to open into a skin.

Dough Clinic / Re: Dough not coming out smooth after kneading

By cross-stacking I mean to place uncovered boxes of dough in the cooler with each box perpendicular to the box above and below it. This type of stacking allows for air circulation around the dough balls while they are in the the cooler. This is important as it allows the dough balls to cool at a consistent rate and it allows the dough to cool sufficiently to control fermentation.

The yeast percentage/amount is based on the total flour weight as are all of the other ingredients, this is referred to as "bakers percent" To find the bakers percent for any ingredient just divide the ingredient weight by the flour weight (both must be in the same weight units, grams, kilograms, etc.)and multiply by 100.

To find the weight of any ingredient expressed in bakers percent using your calculator, show the weight of the flour in whatever weight units that you want the ingredient weights to be shown in. Then enter the flour weight you wish to use.

Press "X" then enter the ingredient percent that you want the weight for and press the "%" key. The ingredient weight will be shown in the display window. By this method of expressing a formula the flour weight will always equal 100%.

For me, I would use less yeast and allow the dough to ferment longer for better flavor development, BUT without knowing your dough formula or at least the amounts used I cannot say if this will work for you or not. You cannot just reduce the yeast level to control fermentation if you are not managing the dough properly to begin with. For example, if your dough temperature is too hot and you do not cross stack the dough boxes or do something else to cool the dough balls rapidly and at a consistent rate, you can end up reducing the yeast level to such a low level as to not provide sufficient leavening for the dough once it goes into the oven which will usually result in a flat, tough, chewy, soft crust. If you would like to receive a copy of my Dough Management Procedure just e-mail me at <thedoughdoctor@hotmail.com> and request a copy of the Dough Management Procedure.

Newbie Topics / Re: Tips for preventing the pizza to become too sour

Chris;

From what you have described I'd say that you need to mix the dough longer. The lumpiness and tearing of the dough are signs of insufficient gluten development. However, you can also turn to biochemical gluten development to do the work for you. To do this just oil a bowl of appropriate size, oil your hands and form the dough into something that resembles a dough ball, drop it into the oiled bowl, drape a piece of foil or plastic over the bowl (do not tightly lid) and allow the dough to ferment at room temperature for about 4-hours, turn out onto floured surface and knead. Then scale into desired weight pieces and manage the dough by your preferred manner.

Dough Clinic / Re: Dough not coming out smooth after kneading

I remember that movie! It was Steve McQueen's first movie if I remember correctly. The Blob.

Oops! is all that you can say.

It's all part of the learning process.

Chitchat / Re: The art of pizzadough

Really easy to reduce both carbs and calorie count of your pizza by 75%. How you ask? Just eat one slice rather than all four, I know it's hard to do but one slice is better than no pizza at all. :)

[Dough Clinic / Re: reducing carbs](#)

If the pizzas came out of the oven with the crust characteristics that you are looking for the bottom heat is good, in many cases you don't even need to use the top heat when baking pizzas. Most of the time the top element is there only to allow for the baking of other food products aside from pizza. There shouldn't be any need to pre-cook any of the vegetable toppings unless you want the toppings to be soft and limp. Try making a pizza with the vegetable toppings applied just before you bake the pizza. While not always necessary, I like to always use pre-cooked meat toppings from a food safety standpoint. My only deviation from this is when making a Chicago style deep dish pizza where raw sausage is placed on the bottom of the pizza BUT this pizza is also baked for roughly 45-minutes so the sausage ends up getting properly cooked along with the rest of the pizza.

[Pizza Ovens / Re: Deck oven teamperature](#)

Clostridium is an anaerobe so it does not grow in the presence of oxygen. pH is also another way to control it. A number of years ago a young housewife poisoned her entire family (I believe it was in Indiana) when she canned low acid tomatoes using her mother's recipe for canning regular tomatoes, ends up there was not enough acidity to prevent clostridium growth and when she made pasta sauce using those canned tomatoes the results were fatal.

[Off-Topic Foods / Re: The Perfect Garlic Butter recipe](#)

In St. Louis the cheese of the day is called Provel, a blend of Provolone and Velveeta a very rich and creamy cheese but with this blend you can see some yellow due to the Velveeta. It would be my guess that they are making a blend of either Provolone or Mozzarella and white cheddar which exhibits an oiling out property but does not provide a yellow/orange color as Velveeta or yellow cheddar does. If they are buying the cheese in blocks, shredding and blending in-house it would be my guess that it is a blend containing yellow cheddar which is available in blocks as is the Mozzarella and Provolone.

This is all made assuming the orange color isn't due to the oiling out of the pepperoni.

[Dough Clinic / Re: Marino's pizza](#)

Andre;

You are correct in that the yeast, through fermentation is responsible for the tartness you have observed in the finished crust.

As the yeast ferments it produces carbon dioxide, alcohol and acids as by-products so the more a dough is fermented the more of these by-products are produced.

There are several things that can cause this;

- 1) Finished dough temperature is too high (above 85F/29C).
- 2) The yeast level is too high. (Typical yeast level is 1% compressed yeast, 0.5% active dry yeast or 0.375% instant dry yeast)
- 3) Cooler temperature is too high. (Ideal temperature range is 36 to 40F/2 to 4C)
- 4) The dough is not being cooled efficiently due to poor dough management practices. (Failure to cross stack, not cross stacked long enough, dough pieces too large to be cooled efficiently (200 to about 600-grams is normal for most dough balls))
- 5) Failure to take the dough directly from the mixer to the bench for scaling and balling.

Mixing/kneading has no effect upon the "sourness" of the dough.

If you would share your dough formula and dough management procedure with us we can probably be more specific as to what is causing your problem. Every little bit of information helps.

Newbie Topics / Re: Tips for preventing the pizza to become too sour

We had both steel and aluminum pans at AIB that we used in our pizza class, the aluminum pans were dark anodized and the steel pans were well seasoned. We found that both types baked reasonably similar in both deck and air impingement ovens. The biggest issue was the potential for rust with the steel pans.

Stones/tiles/steel, Pans & Accessories / Re: Pizza Pans

I should have added in my last post that the probability isn't as great with basil as it is with garlic but the vacuum packaging adds a whole different dimension.

Off-Topic Foods / Re: The Perfect Garlic Butter recipe

Since you were able to ask the question, the answer is a resounding yes.

I look at it like Russian Roulette, there are winners who will dispute the fact that it is a dangerous game, and then there are losers, but you never hear from them.

Off-Topic Foods / Re: The Perfect Garlic Butter recipe

Steug:

Remember that the dough management procedure that I provided to you under separate cover will more effectively control the amount of fermentation that your dough is receiving so it should be much better suited to what you wish to accomplish than what you have been doing. In view of the potential weakness of your flour (thanks Peter) I would suggest changing the target finished dough temperature to 70 to 75F/21 to 24C. This is accomplished by adjusting the temperature of the water that you add to the dough. I would suggest using water at 65F/18C.

Please keep us posted on your results and progress.

Dough Clinic / Re: Should I adjust yeast content?

I don't want to hazard a guess as the ramifications are just too great so I am suggesting that you contact a local university and ask to speak with someone in their microbiology department. If I was to take a guess I would say "YES" since it can survive the canning process quite well, and it can also survive the internal temperature reached when baking bread (190 to 205F).

Off-Topic Foods / Re: The Perfect Garlic Butter recipe

Stueg:

I'm in agreement with Steve, the yeast level is too high for a 24-hour cold ferment dough. What can you tell us about your flour? Also, on a large scale a 24-hour cold ferment will require a finished dough temperature of around 60 to not more than 65F. You would be much better served by dividing the dough into individual dough balls and then placing them into the cooler for the 24-hour cold fermentation period.

The problem with what you are attempting to do is that with a small dough you can reasonably well control the temperature of the dough in the cooler, but with a large size dough (about 22-pounds in this case) the dough becomes such an excellent insulator due to its increasingly porous crumb structure and the fact that the dough actually continues to gain temperature due to heat of metabolism generated by the yeast as it feeds and ferments so what you ultimately end up with is a dough in the cooler that is warm in the center and cooler on the outside with the warm

inner portion continuing to ferment while continuing to gain temperature which further speeds up the rate of fermentation. By subdividing the dough into smaller pieces (200 to 600-grams) the dough can be much more effectively cooled to control the rate and amount of fermentation.

As for the humidity in the air impacting the dough absorption, the humidity has essentially no impact upon the dough absorption. What you might have been experiencing is the break down of the dough due to excessive fermentation, and by reducing the dough absorption you have addressed the symptoms but not the problem itself (over fermentation) resulting in a tight, difficult to handle dough. I think once you get the yeast level down to around 0.5% or a little less and develop an effective dough management procedure things will fall into place.

If you would like to get a copy of my Dough Management Procedure just e-mail me at <thedoughdoctor@hotmail.com> requesting a copy on my Dough Management Procedure and I will gladly send you a copy.

Dough Clinic / Re: Should I adjust yeast content?

300C/572F is higher than I'm used to baking Detroit style pizzas at (assuming you have a black anodized or well seasoned pan). I typically bake Detroit style pizzas at 500 to 525F/260 to 274C. When you allow your oven to preheat to any specific temperature the entire oven should be at that temperature unless you have an oven damper open that would be used to regulate top heat. If you have both top and bottom heat adjust the bottom heat to 274C and then if the top of the pizza needs more heat add heat to the top of the oven. I don't know how your oven is set-up or how it operates so I can't be more specific. In many cases when baking Detroit style pizzas in a deck oven with a solid deck surface we get too much bottom heat which results in the bottom of the pizza either getting too dark or actually burning before the pizza is fully baked, if this is a problem you are experiencing you will need to place a pizza screen under the pan to create a thermal break (air gap) between the bottom of the pan and the oven deck.

Pizza Ovens / Re: Deck oven teamperature

Norma;

I'm guessing that the "stink" that you were smelling was rancidity which is very common with seasoned pans that are stored for any significant period of time. If you can, set your oven about 50F hotter than you normally bake your pizzas and then put one of the pans into the oven to see if the oil will burn off. This should resolve the smoking issue as well as the stickiness issue too. If that does the trick load the oven up with as many pans as it will hold and do the rest of your pans. The process usually takes around 30-minutes. But if you see smoke at first and then the smoke stops the process is completed.

IF you should decide that you want to really clean the outside only of the pans see if you have someone in your area that can sand blast them for you, BESURE to instruct them to invert the pans so only the outside is cleaned, and be sure to tell them that the pans are made from aluminum as that will influence the type of abrasive they use in blasting the pans.

Stones/tiles/steel, Pans & Accessories / Re: Pizza Pans

Lupin;

Are you making a Detroit style pizza?

If so, what color is your pan?

Pizza Ovens / Re: Deck oven teamperature

Norma:

I wouldn't try to clean them anymore than you already have. The inside of the pans look to be fine, the outside is just coated with caked on/baked on oil that shouldn't pose a problem. If you get too carried away with your cleaning you might end up needing to completely strip all of the pans and start all over again with the seasoning process. What you are looking at on the outside of your pans is normal for well used pans and what you are doing is akin to washing Grandma's cast iron frying pan. :)

[Stones/tiles/steel, Pans & Accessories / Re: Pizza Pans](#)

Most operators use their regular pizza dough for making their bread sticks, in fact it is a good way to use dough that might otherwise be discarded. The way the bread sticks are commonly produced is to open a dough ball into a rectangle (using a rolling pin works well) to about 1/2-inch in thickness by about 6-inches in width and whatever length your dough weight allows for. Then use a pizza cutting wheel to cut into strips about 6-inches long by 3/4 to 1-inch in width. Dampen your hands with a little water and roll each piece into a hot dog shape. Set each rolled piece aside on a sheet pan with a little fine corn meal to prevent sticking and allow to proof/rise for about an hour, make a few diagonal cuts across the top of each piece, and transfer to a screen for baking. Brush with a commercial garlic butter/oil and bake right along with your pizzas. Watch the baking time as it may be shorter than what is required for your pizzas. As soon as the bread sticks come out of the oven brush again with the garlic butter/oil and they're good to go. If you par-bake them (baked just enough to set the structure and get just a little crust color) you can prepare as many as you want. After cooling store in a covered dough box for use over the next three days. These should be stored at room temperature and the second application of the garlic butter/oil should not be applied, instead it is applied after you have finished baking the bread sticks to fill an order. Another popular presentation is to dust them with grated Parmesan cheese after the second bake. Or my favorite, give the bread sticks a light spritzing with water and sprinkle on some shredded Parmesan cheese before baking and then give a light brushing with the garlic butter/oil immediately after baking.

[Dough Clinic / Re: garlic bread doug formula](#)

It might be just a little thin for the raised edge dimension and it might take a little more bake but otherwise it looks like a great pizza with good crust porosity.

[New York Style / Re: Thoughts on Recent Pie?](#)

Norma;

I like to use peanut oil in the pans since it has a very high smoke point (about 450F) also, many of the large chains used to use peanut oil almost exclusively so that might be the oil originally used in your pans.

[Stones/tiles/steel, Pans & Accessories / Re: Pizza Pans](#)

Norma;

No, no, no, they will not bake OK! They will bake GREAT! I can't tell very well from the photographs but they appear to be thicker than your standard pans, probably a L.C. specification with their order. The only thing I would do is to clean them up, remember not to soak them, just scrub out with a soft bristle pot brush, sanitize, wipe dry and run through the oven immediately to force dry them. Once dry I would season them and call them good and ready to go.

[Stones/tiles/steel, Pans & Accessories / Re: Pizza Pans](#)

Norma:

The logo on the pan looks like it might be American Metalcraft, a magnet will quickly tell you if they are steel or aluminum. The seasoning looks to be a standard oil seasoning.

You should have bought more then you could be the internet purveyor of pizza pans for Pizza Making.Com. :)

Stones/tiles/steel, Pans & Accessories / Re: Pizza Pans

What a buy!!!!

Stones/tiles/steel, Pans & Accessories / Re: Pizza Pans

HBOLTE;

Non-seasoned pans (not bright and shiny) are commonly used to make focaccia since the brighter colored pans reflect heat away from the dough allowing for a longer bake without excessive color development. The pans are also responsible to a great extent for the soft bottom texture. I've always allowed the dough to proof in the pan for a short time (about 20-minutes) and then brush the top with olive oil and finger dock. My favorite presentation is black olives, rosemary, sea salt and a light application of shredded Parmesan cheese. We typically baked our focaccia at 550F. If you go to the Rheon web site <www.rheonusa.com> you might be able to see a video of the Rheon automated focaccia equipment/line which produces a continuous ribbon of focaccia which is then sliced and guillotined to size for retail sale.

Focaccia Style / Re: SF Liguria Bakery - Focaccia at 800 degrees?

Aric;

Without question, the actual finished dough temperature has greater influence on the dough than the ambient temperature. Since dough is porous it's an excellent insulator so it takes quite some time for the outside/ambient air temperature to warm or cool the dough. This is why I always say that you cannot have effective dough management without effective finished dough temperature control.

Dough Clinic / Re: Room temp vs dough temp

You got a great deal!

Where I deer hunt in Arkansas there is a lumber mill just across the valley from me where they process nothing but hardwood. Local residents go to the mill regularly to buy the trim scraps (devoid of bark) generated when they trim the boards to length. A pickup load (1-rick, more or less) costs almost nothing. Take a look around you, if there is a lumber mill close by you might want to talk to them...just a thought.

We also have a transfer station here in Manhattan, KS where trash is taken. As part of this they have an area where local residents and contractors can bring trees that they have cut down as well as storm damaged branches/limbs. Since we have a wood burning furnace I make regular trips to the transfer station to sort through their assortment of trees and limbs, with my chain saw in hand I can harvest my winter supply of oak (about 1.5 cords) over the summer for nothing but my time and the cost of gas for the saw.

General Pizza Making / Re: Firewood Jackpot

And don't forget the air we breathe! Just think of all the pollutants in it, live in a big city/major metropolitan area? Now please explain to me why I should be overly concerned about acrylamide? It's been around ever since the first troglodyte found a crispy critter after a fire and decided that it tasted better than raw meat. But what about the acrylamide? My guess is that even in modern times the parasites

and bacteria found in raw meat would kill us MUCH faster than the cancer caused by the acrylamide. I'll take my chances with the acrylamide and continue to stay away from the front bumper of moving cars, trucks and buses as part of my plan to live a long, productive and healthy life. For those who might be wondering, so far my plan has been working quite well for me. You'll have to excuse me now as my wife just made some fried turkey strips (from my successful turkey hunt this past spring) for lunch and I don't want it to get cold. :)

Chitchat / Re: Leoparding, acrylamide, cancer

While they can be the same or similar more typically the dough that is to be formed into skins by one of the pressing methods (hot or cold) will contain some reducing agent to both improve the pressing properties of the dough as well as to address any memory/snap-back issues common to pressed dough. The dough sheeter on the other hand really doesn't handle soft and extensible doughs very well as they are difficult to handle and don't always pull through the sheeting rolls all that well resulting in oblong shaped dough coming from the sheeter after the second pass. When it comes to forming a thin dough skin the sheeter does a much better job of making a very thin dough skin than a hot or cold press.

The finished dough temperature is for controlling your dough management procedure so it is a moot issue, BUT if we are talking about commercial (wholesale) production of pressed and sheeted dough then there is a significant difference in dough temperature. Commercially sheeted doughs are in the 60 to 75F temperature range while hot pressed doughs are in the 80 to 90F range and cold pressed doughs normally run in the 90 to 100F range, of course none of these doughs receive any appreciable fermentation prior to forming so these temperatures have a significant impact upon the way the dough performs during the forming operation. Mind you, when I say "commercial" I'm referring to dough production rates of 4 to 7-thousand pounds of dough per hour.

Prep Equipment / Re: Just purchased a sheeter

Norma;

Now you're ready to begin making cracker type crusts.

Prep Equipment / Re: Just purchased a sheeter

Oh, so YOU'RE the Guinea Pig.....Let's see if Dad can make us a good pizza!

We'll try to help you develop a new reputation as a great pizza maker with your family, and I'm sure you'll have fun doing it too.

Welcome to the site! :)

A few things to keep in mind, there is no such thing as providing TMI on what you are doing or trying to accomplish. Formulas and procedures are an important part of getting the best help from everyone here, and where appropriate pictures, like they say, "are worth a thousand words".

New Forum Members / Re: Sick of the Chains

I'm envious! Our apricot crop as well as all of the peach, and pear crop got zapped by a late frost this spring :(we will be getting a few apples but not by the bushel as we normally get.

We turn most of our apricots into freezer preserves, fast and easy to do.

Off-Topic Foods / Re: Freshly Picked Apricots

Heijko;

I got to thinking about what you said about using the fan for convection baking. That might be part of the problem too. With the fan running the heat will not be

impinging directly upon your stone to give you a stronger bottom bake. You might want to try baking your pizzas without turning the fan on to see if it helps.

New York Style / Re: Heikjo's first attempt at NY style Lehmann (12" on stone)

You might also want to have an electronic digital scale for weighing the ingredients too. You should be able to find one through the Internet at a reasonable price. Here in the U.S. we can get them for around \$30.00 U.S. A 500-gram capacity scale will work but a 1-kg./1,000-gram capacity would be better. Also, the larger the dough size the easier it is to get decent scaling accuracy. Remember, you will most likely be using a cold fermentation dough management procedure so you will be able to have dough in the fridge ready for use over a several day period of time, but if you get tired of eating pizza (I can't believe that would ever happen) you can always open one of the dough balls very thin, brush it with melted butter, sprinkle with a cinnamon-sugar mixture and bake until golden brown, enjoy as is or make a powdered sugar-water icing (cup of powdered sugar, add hot water (a few drops at a time) and stir to make a thick, honey like consistency then drizzle over the skin after it has cooled for 2 or 3-minutes. You can also add pieces of fresh fruit and nuts to "up" the ante.

Newbie Topics / Re: Beginner recipe for hand kneaded, home oven pizza?

You can get just about any size, shape, weight/thickness, perforated or non-perforated, dimension, black anodized or bright anodized pan from American Metalcraft, Inc. at <www.amnow.com>. They also carry a lot of other nifty things for pizza production too.

Stones/tiles/steel, Pans & Accessories / Re: Anodized aluminum pans

Pretty easy if you're going to make 100% whole grain pizza crusts.

You will need a scale and a small bowl.

Weigh out any amount of flour into the bowl (I like to use 100-grams).

Add water to the flour and stir to incorporate. The flour should look something like breakfast oatmeal.

Set everything aside and allow the flour to hydrate for about an hour (not less than 30-minutes).

The flour will look dry and lumpy, add more water and stir in until it looks like oatmeal again.

Allow the flour to hydrate again.

Keep doing this until the flour-water mixture retains the oatmeal appearance after an hour of hydration time.

Weigh the flour-water mixture and subtract the tare weight of the bowl.

Now subtract the weight of flour that you started with. This will tell you how much water you had to add.

Divide the weight of the water by the weight of the flour and multiply by 100. This will give you the total absorption percent of the flour, now subtract 5% from that number and that is the absorption you will need to use when making your dough. Failure to follow this procedure in determining generally results in a finished crust more like cardboard than a pizza crust.

NOTE: The finished (mixed) dough will be slightly tacky, don't worry as this is normal for a whole grain dough (if it isn't tacky your absorption is too low). The dough will continue to hydrate during the cold fermentation period and the dough balls will feel pretty normal after the cold ferment period. Whole grain doughs don't hold up very well due to the cutting action of the bran flakes on the gluten film so it's best to limit the cold fermentation to not more than 24-hours.

I've covered this procedure in one of my articles (In Lehmann's Terms) in PMQ Magazine at <www.pmq.com>

Dough Ingredients / Re: Whole grain flour adjustments

Here goes:

Put (65F) water in mixing bowl, add salt and sugar, add flour and IDY then mix at low speed until the flour is hydrated (about 2-minutes) add the oil mix one more minute at low speed then mix 10-minutes at medium speed or until the dough has a smooth, satiny appearance. You are looking for a finished dough temperature in the 80 to 85F range. Immediately take the dough to the bench, scale (400-g. for a 12-inch pizza), ball, place in dough boxes, wipe the top of each dough ball with oil, cross-stack in the cooler for 2.5-hours, down-stack and allow to cold ferment for 24-hours. To use the dough balls: Remove from the cooler keeping them covered. Allow to warm to 50F then begin opening the balls into skins by your preferred method. Dough balls will remain good to use for about 3-hours after they reach 50F. Any remaining dough balls in the cooler will keep for up to 72-hours. Bake at 525F/274C for about 7-minutes. This should get you started.

Chitchat / Re: Electric deck oven temperatures

And what does your dough formula look like? How are you planning to manage the dough? What kind of mixer do you have? Assuming you're planning to bake directly on the oven deck?

Chitchat / Re: Electric deck oven temperatures

Placing the pizza higher up in the oven will get you more top heat to the pizza but won't help the bottom bake.

New York Style / Re: Heikjo's first attempt at NY style Lehmann (12" on stone)

What kind of deck does the oven have?

Chitchat / Re: Electric deck oven temperatures

Carl;

Thank you for sharing the photographs. The pizza looked great! The next time you make it you might try leaving one dough ball cold ferment for 72-hours (3-days) before using. This will help you to know the limits for cold fermentation of your dough and it should provide some additional flavor to the finished crust. I've taken the dough out to 96-hours (4-days) and still got reasonably good results from it. It will definitely go longer than that but I think I begin to lose consistency, one time It will go for 5-days without a problem but the next time the dough is sticky and difficult to handle, it still makes a good pizza but you know the dough isn't handling as well as it should.

Dough Clinic / Re: 10 minute mix in a KA, dough ready for balling?

I agree that the pizza crust shown in the pictures appears to be under baked and not very well browned. In addition to loss of crust crispiness and rigidity the lack of crust color development also results in a loss of flavor in the finished crust. Are you sure you are leaving the stone in the oven long enough to thoroughly heat up before putting the dressed skin onto it? I typically allow one hour to heat the stone. Move the stone closer to the heat source if you can as this will provide greater bottom heat (pizzas are baked from the bottom up). Try to not open the oven door for at least 5-minutes after you place the dressed skin on the stone. When I make pizza my wife is in charge of the oven door, she opens it, I peel the dressed skin

onto the stone and as soon as possible she is closing the oven door. The reason for us doing it this way is that we feel it helps to minimize heat loss from the oven through the open door. Much of those first few minutes after the door is closed the oven chamber is coming back up to temperature, this is why we don't open the door for at least 5-minutes, and then we just crack the door open for a peek.

New York Style / Re: Heikjo's first attempt at NY style Lehmann (12" on stone)

I think if you go to <www.quantumtechnicalservices.com> you'll be able to see the same type of equipment as seen in the video. There is nothing new about automated equipment to open a dough ball into a pizza skin one at a time (Rheon has a pretty slick one) and sauce applicators are a dime a dozen (do you want a waterfall or target sauce applicator?), loading a pizza into an oven...ya gotta be kidding! Where are the "robotics" here? Automated yes, but robotic? We use robotics in the baking industry to place product in the cases, close and seal the case, place the cases on pallets then send them on their way to a stretch wrapper. In the pizza industry robotics are used to place the dough balls into the plastic dough boxes/trays just prior to going into the cooler...what a sight it is too!

Pizza News / Re: Bloomberg Video: Pizza Making Robots Are Coming for Domino's

We just harvested the first of our container grown potatoes with a yield of nearly a full 5-gallon bucket from the single container that we harvested. Also got the second harvest of basil which gave us another full quart of pesto (we call it pesto but it really isn't, instead it's only basil and olive oil pureed, we found that when we made real pesto the pine nuts or walnuts or pecans would turn rancid in the freezer before we could use it all during the winter, this stuff has kept well in the freezer for up to two years (we found a lost container of it that was two years old and it was still fresh). Best part of growing basil is harvesting it, oh the aroma!!! The tomato plants are giving up the early tomatoes but it will still be about two weeks before the BIG tomato harvest. Pepper plants are loving our hot and dry weather here in Kansas and are rewarding us with a continual supply of peppers. Having fresh produce is one of our great joys of summer, and nothing beats harvesting your own pizza toppings which will be on the dinner table in less than an hour.

Chitchat / Re: Garden 2016.

It could also be that the amount of yeast was mis-scaled. A good trick to test the dough for yeast is to tear off a small portion, form it into a small ball (about the size of a large marble) and drop it into warm water. If it floats or floats in ten minutes yeast is present, if it doesn't float...Oops!

Newbie Topics / Re: Can someone help me please?

Can you share your dough formula/recipe and dough making procedure?

Newbie Topics / Re: Can someone help me please?

It would help to know what your dough formulation/recipe is but for starters, make sure the dough doesn't contain any sugar, milk or eggs. Your stone might also be too close to the heat source (needs to be raised up higher). Why are you putting corn meal on the baking stone? No reason to do so.

Dough Clinic / Re: Why am I burning my pizza bottom?

Anything like the Celeste brand/Pillsbury frozen pizza? They were made using a

fried crust. Also, a few years back there was a flurry of interest in making pizzas using fried Indian bread (common to S.W. USA) as a base.

Neapolitan Style / Re: Anyone tried deep frying a neo?

Peter;

An now we also have 3-D printers for making pizzas too! Any guesses of what a pizzeria might look like in 25-years? From what I've heard the things that are pushing the "mechanization" of not just pizzerias but all box type fast food chains is (1) Increasing operating costs, (assuming this might have something to do with the new minimum wage and health care regs.) (2) Availability of the technology (it's there, and the price is right, why not use it?) (3) The novelty factor (4) Expansion of marketing horizons (The target appears to be non-manned "food kiosks" where the customer selects from a menu, pays, and automatically gets food prepared by the machine) We already have a pizza machine that does this so the "ice has been broken" for more things to come.

Good, bad or indifferent, I think this is the new future for fast food.

Pizza News / Re: Bloomberg Video: Pizza Making Robots Are Coming for Domino's

The common practice is to place the opened skin on a screen and slide it into the wire tree rack and then cover the entire rack with a large plastic bag. No nee to worry about closing the bottom of the bag unless you experience problems with the skins developing a crust on them, in that case you will need to fold the open end of the bag under the rack to hold it closed.

You can normally store skins made with up to 65% absorption on screens but since all doughs are different you will need to experiment with a few to see if it works for you without the dough flowing into the screen openings. If you find that the dough flows into the screen openings place a piece of lightly oiled parchment paper on the screen prior to placement of the skin. You can use sheet pans instead of pizza screens, it is not as efficient but it does work. Here is the procedure for using sheet pans:

- 1) Store the sheet pans in the cooler so they are cold.
- 2) Place the skins on the sheet pan with each skin on its own individual piece of parchment paper, this will allow you to remove the skins one at a time for ease of handling.
- 3) Place each sheet pan into individual plastic bags and close by folding the open end of the bag and tucking it under the sheet pan to hold it closed.

An alternative to using individual plastic bags is to place the sheet pans into a rack or cabinet made for holding the sheet pans then close the door on the cabinet or cover the rack with a large plastic bag or specially made rack cover.

Dough Clinic / Re: Dough ball storage in pizzeria

Peter;

Hard red winter wheat (HRW) typically has a lower protein content and produces a lower protein content flour than hard red spring wheat (HRS) and most commercially made pizzas are made from the stronger flours primarily of HRS origin, this is why I don't see the HRW issue here in KS impacting the pizza flours in a significant way at this time. Additionally, we have to consider the HRW crop quality coming in from the other HRW states like Texas, Oklahoma, Colorado, and Nebraska. If they are all or mostly in line with typical HRW protein expectations the KS crop will be blended with HRW from other states (cheaper than using HRS) to bring the quality up (protein content as well as baking performance). The high protein content specification demanded by many of the chains is due to their desire

to have a consistent quality/performing dough from day 1 through day 7 when properly managed by tight company standards.

Dough Ingredients / Re: Low protein levels a concern for Kansas wheat crop

Thanks Carl, I look forward to reading/seeing your results.

Dough Clinic / Re: 10 minute mix in a KA, dough ready for balling?

Like I said, hundreds of more questions. You will probably get a better answer as indicated at the PMQ Think Tank as there are mostly operators who have gone through this anything from once to multiple times, and depending upon the type of pizzeria that one is planning to open (dine-in, carry-out, delivery, or DELCO) there are people there most qualified to provide direction in selecting a site for the specific type of pizzeria in question. If anyone is not familiar with the PMQ (Pizza Marketing Quarterly) web site at <www.pmq.com> and need help in the pizzeria or commissary arena I would highly encourage you to visit the Think Tank. Like here at Pizza Making it is a friendly site, free of charge, and there is always someone willing to help.

Shop Talk / Re: New Opening - Location question

Peter;

Most, if not all of the major pizza chains use flour in the 12% protein range (typically 12.2 to about 12.8%) so the low average protein of the KS wheat crop this year will not impact anyone directly, but it will impact them indirectly by creating a greater market for HRS wheat (hard red spring) as the demand for HRS will increase due to its need as a blending wheat (high protein wheat is commonly blended with a low/lower protein wheat to improve the quality of the flour milled from the lower protein wheat or to achieve specific flour performance characteristics) this will most likely impact the cost of those using flour in the 12% protein range which is typically made from HRS. It will not impact any of the major chains as they purchase so far ahead but it will most likely have an impact upon the price that the smaller regional chains and pizzeria operators pay for their flour. This is especially true for the immediate time as we are working from last years HRS wheat harvest and the new HRS harvest will not come in until late August or September, if the HRS harvest is good prices will probably remain stable or even come down a bit BUT if it does not meet expectations (based on domestic and export needs) we can probably look for higher flour prices come this fall which will remain with us until this time next year. I might be wrong on this but I think the reason for the low protein content here in KS is due to the very mild and somewhat wet winter that we experienced. Typically, when the protein content of the wheat goes down the yield increases, I don't know if that was the case this year or not as I am no longer doing any crop surveys.

Dough Ingredients / Re: Low protein levels a concern for Kansas wheat crop

Carl;

The dough really looked quite good. The only change I might suggest is to pour a very small amount of oil down the inside of the bowl about 10 or 15-seconds before stopping the mixer. This will make the dough easier to remove from the mixing bowl and it won't hurt the way the dough balls up. It looks like you have enough dough there to make possibly three pizzas? If this is the case you should pull one dough ball after 24-hours (approx.) and then again at 48 and 72-hours to see which cold fermentation time works best for you. For me and the way that I

handle/manage the dough I find that the "sweet spot" is at 48-hours. It performs OK at 24-hours but still shows some signs of being under fermented (other love it at 24-hours, to each his own). I like your mixer by the way. :)

Dough Clinic / Re: 10 minute mix in a KA, dough ready for balling?

What is the breakout of dine in and delivery, carry out? This can have an impact upon the location. Have both sites been approved by the franchising company? Are both sites equally accommodating to the wood fired oven?

Traffic flow: Easy in easy out?

Proximity to potential customers: local shopping, business centers, factory, school, etc.

Hundreds of questions to be asked, these are but a few.

You might also want to consider making a post in the PMQ Think Tank <www.pmq.com> as the Think Tank is visited mostly by pizzeria operators.

Shop Talk / Re: New Opening - Location question

Lupin;

A thermometer is used to measure the temperature of the dough/dough ball. Since thermometers are available in different temperature ranges it is best to use a thermometer where the temperature you will be looking for is about in the middle of the temperature range. In any case a good thermometer will typically have a high end of something between 125 and 250F/52 to 121C. Electronic thermometers are the exception to this rule, if an electronic thermometer is used it will almost always be sufficiently accurate over its entire temperature range for our use.

PETER: I don't have any file photographs of a wire tree rack, or a reach-in and walk-in cooler, can you please help?

Dough Clinic / Re: Dough ball storage in pizzeria

Since you will be transporting the bulk dough back home from 30-miles away you might want to use water at 50F to achieve a finished dough temperature closer to the 60 to 65F range. You certainly don't need the dough to begin fermenting at an accelerated rate during the drive home.

The difference isn't so much in how the dough handles at between 50F and 70F but in how much time you then have to get the rest of the dough balls opened into skins, dressed and into the oven. At 50F the fermentation rate is still a bit sluggish so the window of opportunity to use the dough is greater, like I've been saying, typically in the 2 to 3-hour range but if you don't begin to open the dough until it's 70F the rate of fermentation is much faster thus greatly diminishing that window of opportunity to use the dough balls without getting changes to the finished crust due to the more greatly fermented dough balls. While this is not an issue for home pizza making or even pizza making on a very limited basis such as in making "bar pizzas" where only a couple of pizzas are made at any one time, it gets to be a huge problem in a pizzeria where we have upwards of 30 to 100 dough balls sitting out and not knowing how many we will use or how fast they will be needed/used so we need the greatest time period in which to use the dough without imparting inconsistencies in the finished crust. On a small scale those inconsistencies may be overlooked, but in a pizzeria those inconsistencies can influence customers and their perception of the pizza which can adversely impact the pizzeria and all who work there. In the pizzerias that I work with we find a crust with the characteristics that the customer wants and then we do everything in our power to maintain those characteristics. I have been called in to assist stores when they change from one type of flour to another or from one manufacturer to another just in case something gets lost in the translation I'm there to get them back on track as

quickly as possible. No pressure on me at all.

Dough Clinic / Re: Bagging dough balls

The length of time that the dough balls can be left out between reaching 50F and using them to make your skins will vary with the temperature of your kitchen. Even in China, India, Korea, and Turkey where the kitchen wasn't air conditioned we were able to successfully leave them out for up to two hours. Any dough balls that cannot be held any longer should be opened into skins, placed on wire pizza screens and placed in a wire tree rack in the cooler. This will allow the dough to chill quickly thus allowing you to hold them through the entire day. To use these pre-opened skins, just remove them from the cooler and allow to temper at room temperature for about 20-minutes, then remove from the screen and use the same as any just opened skin.

The key element in tempering the dough balls after removing them from the cooler is allowing them to reach a temperature of 50F/10C. If this is done at room temperature or in a non-heated cabinet really doesn't have much impact upon the dough, however putting the dough balls into any heated cabinet to reduce the time needed for the dough balls to reach 50F/10C should not be encouraged as the dough balls do not warm up uniformly, the outer portion of the ball will be warmer than the core which will result in the balls having a very short time in which they can be used. If you ever find yourself in a position where you have run out of dough for whatever reason, you can safely remove a single box of dough balls, then using your hands flatten each dough ball in the box so it looks something like a hockey puck, be sure the box is covered and the dough pucks are lightly oiled to prevent drying and place the box of flattened dough balls on top of your oven where they will warm rather quickly and be ready for use inside of 30-minutes, just be sure the top of the oven is not so hot so as to damage the dough box. Keep in mind though that this is ONLY an emergency action and those rapidly warmed dough balls will need to be used in one way or another soon after you begin opening them into skins.

Dough Clinic / Re: Dough ball storage in pizzeria

Using a Hobart bench top mixer like an A-120 or larger all the way up to an 80-quart (M-800/M-802) use 60F water to achieve a finished dough temperature in the 70 to 75F range assuming you will be mixing the dough at medium speed for 8 to 10-minutes after the oil addition. Do you have a freezer? If so, place your first batch in the freezer, when the second batch is bagged, take the dough balls fro the freezer and place them in the fridge and put the new dough balls in the freezer. This is what I refer to as "super cooling" the dough balls. I works very well considering the inefficiency of a home fridge. If you do this you can stack them in the fridge just about any way you want. If you do not have a freezer I don't recommend stacking more than two high.

Dough Clinic / Re: Bagging dough balls

If you do your part the dough most definitely will get better with a longer period of cold fermentation. My doughs are always in their "sweet spot" on day 3 after mixing.

Dough Ingredients / Re: Getting aways from Frozen Dough balls and gonna make it fresh?

From what it sounds like, I'd say that it should be just fine after a few feedings. If you have not already done so you might want to give a lot of thought to keeping two starters, ideally in different locations (like backing up data on the Cloud), or if

you can't do that you should have two separate containers in the fridge (you can rotate using one, then the other) so if you should lose one you will still have the other one to use as an inoculant to start a new one.

Dough Clinic / Re: Soap in my starter!!!

The act of "opening" a dough ball into a pizza skin is taking the dough ball and forming it (by any of a number of different ways) into a flat dough piece which will be "dressed" (toppings added) and baked to become the crust portion of the pizza. I can't imagine anyone leaving dough balls out at room temperature all day in a pizzeria. Due to the continuing fermentation of the dough there would be a significant change/variation in pizzas made during the course of the day, not exactly the thing that instills consumer confidence in your pizzas.

Dough Clinic / Re: Dough ball storage in pizzeria

Store them refrigerated until about 2-hours prior to use, then pull and allow to warm to 50F before opening into pizza skins. Once you begin opening the dough balls that have reached 50F they can be left out at room temperature (70 to 75F) for 2.5 to 3-hours. Dough that has not been removed can be stored for up to 3 or possibly 4-days with effective dough management procedures in place.

Dough Clinic / Re: Dough ball storage in pizzeria

"I've never had a pizza I couldn't learn to like"

"The only difference between a really, really really really good cookie and a really, really, really, really bad cookie is that it takes just a little bit longer to eat all of the really, really, really, really bad cookies"

Chitchat / Re: Food Quotes

A very good "go to" flour is Pillsbury's Bread Flour which is available at most supermarkets. This flour was put up for consumer use in bread machines. If I remember correctly it has a protein content of 12% or a little more. If you're working in bakers percent here is a little trick:

- 1) Find the sum of all of the ingredient percentages.
- 2) Divide this number by 100.
- 3) Take the amount of dough that you want to make (express the amount in ounces) and divide it by the number you got in #2 above, this will give you the amount of flour (in ounces) needed to make your desired dough weight.

Pretty nifty!

Dough Ingredients / Re: Getting aways from Frozen Dough balls and gonna make it fresh?

No, when used at the correct substitution levels any of the common yeast types (ADY, IDY or CY) can be used interchangeably with no changes to how the dough is handled or managed.

Some things to remember about yeast:

In addition to the above, when the dough is MACHINE MIXED IDY and CY are best added to the dry flour.

ADY must always be hydrated in a SMALL portion of warm (100F) water for about 10-minutes just prior to use whether hand or machine mixed.

When the dough will be mixed/kneaded by HAND both ADY and IDY must be suspended in 100F water for 10-minutes before addition to the dough.

CY must be suspended in the dough water in the mixing bowl (it does not need to be warm water) The rest of the ingredients can be added right away and mixing started as soon as the CY is suspended (no need to wait as for IDY or ADY).

Dough Clinic / Re: ADY instead of IDY for Lehmann NY Style Pizza?

Here is a good dough formulation that tosses well. How well you ask??? Many years ago Tony G. hung on of the skins made from this dough up in our pizza lab rafters (20-feet high) during our AIB pizza seminar.

Flour: 100% (strong bread type flour/12.2 to 12.8% protein content)

Salt: 1.75%

Sugar: 2%

Oil: 2%

IDY: 0.375%

Water: 58% (65F)

Water is added to the bowl first, then the salt and sugar followed by the flour and IDY.

Mix dough for about 2-minutes until you don't see any dry flour in the bowl then add the oil and mix 1-minute in low speed.

Change to medium speed and mix for 10-minutes.

Target finished dough temperature is 80 to 85F.

Immediately scale and ball.

Place in dough boxes and wipe the top of the dough balls with oil.

Immediately take to the cooler and cross-stack for 3-hours.

Down-stack and allow to cold ferment for a minimum of 24-hours before using.

If you want to do it more like PJ's cold ferment for 3-days.

To use the dough, remove from the cooler and allow to warm to 50F and begin opening the dough balls into skins.

You can also see this dough in use by going to the PMQ web site <www.pmq.com> and viewing their pizza videos.

This should help in getting you started, once you have mastered the technique you can begin making changes to the dough formulation and/or dough management procedure to make different types/styles of pizza.

New York Style / Re: Tossing dough and hydration levles

The dough is much too small for the bowl capacity. With a small size dough it is not uncommon to use a higher speed for mixing the dough.

Dough Clinic / Re: knead dough and stand mixer problem please help

Possibly the birch that you're burning is not burning hot enough, hence the carbon/soot accumulation. Maybe try some oak, which burns very hot, to see how it performs.

Newbie Topics / Re: Wood issues.

Totti;

How much are we talking about? 10-ml into 250-ml. is one thing while 10-ml. into 1-L. is a totally different situation. In any case unless the amount that got contaminated is very small it is entirely possible that you might be able to culture and purify the Ischia to get it back to where it was. Check around to see if you can find a whisk with a solid handle like is required for restaurant use. If you have access to a restaurant supply store check them out, or you might be able to get one off of the internet.

Dough Clinic / Re: Soap in my starter!!!

As you will be using a home "fridge" you will need to make a small but important change. You want to have a targeted finished dough temperature in the 70 to 75F range. Even if it ends up in the high 60's that won't be a problem. IMMEDIATELY after mixing scale and ball the dough, oil the dough balls and drop into individual food bags, be sure to twist the open end into a pony tail and tuck it under the dough ball as you place it in the fridge. Leave the dough balls in the fridge until you're ready to transport them. Once you're at the event remove the number of dough balls that you will need to use during the first hour, allow them to temper until they reach 50F, they are then ready to use. Keep pulling dough balls from the cooler about every 30-minutes so you will have a steady supply of dough balls ready to be opened into skins. The dough will increase in volume by about 50 to 75% during the initial chilling phase.

Oh yes, one more thing to keep in mind, since you're using a home fridge the length of time needed for the dough balls to reach 50F at the event may only be an hour or less.

No need to be overly gentle with the bagged dough balls as they will hold their shape just fine. To remove the dough ball from the bag just invert the bag over a bowl or tray of flour allowing the dough ball to fall into the flour then proceed to open into a pizza skin.

Dough Clinic / Re: Bagging dough balls

I totally agree with Craig, he is "spot-on".

General Pizza Making / Re: \$5 for a dough ball at a local pizza shop?

Norm;

Also be sure to check to see how, if at all, the oven might affect your home insurance rates. We have a wood burning furnace for back up heating and it impacts our insurance rate, there are also some states where the insurance is much more strict when it comes to anything burning wood or coal. A number of years ago I worked with a pizzeria in Iowa, I believe, and we were planning to install a wood fired oven (Woodstone) but quickly found out that since the building was a wood frame structure the cost of insurance was going to be prohibitive. The solution for us at the time was to place the oven outside of the building in its own protective metal (non-combustible) shed, tear out a portion of the wall and replace it with a brick wall with a large opening allowing access to the oven. It actually worked out pretty well, the wall looked like the oven was built into it and it freed up a huge amount of space for us. This was in a commercial application so I don't have any idea of what the impact might have been if it were in a residential application.

You just don't want any after the fact surprises.

Pizza Ovens / Re: Indoor wood fired oven

Actually, to an extent wood and coal fired ovens are banned in New York City. They have grandfathered in the existing ovens but will not permit new ovens to be installed. The state of Colorado requires the use of catalytic converters on wood burning fireplaces and furnaces. I can't speak to the other states but those are two that I'm aware of.

Pizza News / Re: First they came for the...

The amount of protein indicated is for the portion size indicated. All you need to do is to divide the grams of protein indicated for the portion size by the indicated portion size and multiply by 100, this will give you the percent protein content for

that particular flour. Example: serving/potion size:30-grams, grams protein: 4-grams. Divide 4 by 30 and multiply by 100. $4 \div 30 = 0.13333333 \times 100 = 13.3\%$ protein content. If this is different from the format of your label let us know and include a photograph of the nutrition label.

Dough Ingredients / Re: Stupid flour question

Formulas for different type of pizzas will typically employ different methods of dough management.

If you would like to have a very basic home made pizza dough formula/recipe and procedure I've got one posted in the PMQ Recipe Bank at <www.pmq.com> just go into the Recipe Bank and use "home made pizza" for your search. I just finished making two pizzas tonight using that same recipe and procedure. Because I made the pizzas in a thin crust format I baked the pizzas on a pizza stone (preheated for 1-hour) at 550F.

Both pizzas were absolutely great!

Dough Clinic / Re: Instructions for making dough using formulations

Welcome to the site!

Peter mentioned using a good bread type flour which I believe you have available to you in Venezuela, or at least you used to have it readily available. I was a consultant to David Epplebaum and developed all of the dough formulas for his pizzeria chain "Pizza King" which was copied after Pizza Hut, in fact, many of his managers were pirated from Pizza Hut stores in the Miami, FL region.

Please tell us something about how you are presently making your pizzas, we're all here to help, compare notes and learn from one another.

New Forum Members / Re: Greetings from Venezuela

We have gone through all of our scallions and we're now turning to the leeks which are ready for picking, but we just planted our second crop of onions so we don't run out during the summer. We have been picking peppers for a couple of weeks now, radishes are gone as is the spinach (made a few great spinach pizzas with it) we were able to harvest it three time this year. Now we're turning to the beet greens and I'm getting ready to make a pizza with beet greens to replace the spinach...that'll be a first for me. Snow peas are doing great and we have been using them in salads along with the black seed Simpson lettuce. As black seemed to be the "in" color this year we planted several black cherry tomato plants as well as two black bell pepper plants. Let's see, we have black, red, yellow and green, I think we have all of the colors for sweet bell peppers covered this year. Vine plants, cucumbers, butternut squash, acorn squash, and watermelon are all doing extremely well this year. First potatoes (Yukon Gold)will be ready for harvest in about two weeks. We planted some heritage variety tomatoes, vines are taller than me and they're setting fruit like crazy. Also a variety of other large tomato varieties which are doing well too. This has been one of the best springs for our garden in a number of years...it started out wet and cool and before the fungus could set in it dried up and went to dry and warm but not hot, now we're in the dry and hot period which the garden plants just love. You sure get spoiled in a hurry having a fresh produce center in your back yard.

By the way Norma, the basil is going absolutely crazy! We have been harvesting leaves and turning it into basil pesto for the freezer just to keep up with it.

Chitchat / Re: Garden 2016.

I add mine after the pie is baked but I then put the pizza back into the oven just long enough to wilt the basil leaves and release its wonderful aroma.

I use only full basil leaves as I want to have my pizzas with a layered flavor; this means that each bite will be a little different from the last bite. My own personal take is that there is nothing more boring than a pizza where every bite tastes just like the last one.....if that's what I'm looking for I can always go to P.H, Dom's., L.C., PJ's, just to name a few.

Pizza Toppings / Re: Unchopped basil

A good person to post this question to is George Mills at the PMQ Think Tank.

<www.pmq.com>

Keep in mind though, if your city code requires a hood, a hood you shall have.

Hearth Ovens / Re: Type 1 hood?

From the looks of it I would call it a "Domino's" style. The crumb structure is too tight for any of the styles you mentioned.

General Pizza Making / Re: How to make this pizza? | What kind of pizza?

You begin to see it at around 90-parts per million (ppm) of L-cysteine, for the work that I did with PZ-44 back in the 70's we estimated that 2% PZ-44 contributed about 40 to 45-ppm L-cysteine so I would think that something close to 4% would do the trick.

Be aware though that at that level mixing time will be VERY SHORT, the dough will be sticky and keep getting stickier as time progresses. Mix, target finished dough temperature (70 to 75F), scale, ball, oil the ENTIRE dough ball, set aside to rest until the dough ball is soft and pliable (you won't need to wait very long), form onto a solid baking platform (like a coupe pan), give 5-minutes to rest and par-bake.

Dress par-baked crust as desired and finish baking at 450F. A toaster oven is what we used at the time to finish baking.

Dough Clinic / Re: PZ-44

As a reducing agent the sole function of PZ-44 is to mellow/soften the gluten for a finished dough that is easier to stretch and with reduced or no memory/shrinkage. The amount of PZ-44 needed to accomplish this will depend upon a number of factors such as dough temperature, dough management, dough absorption and flour protein content/gluten quality. Because of this it is impossible to give a hard and fast recommendation on how much PZ-44 should be used. My own recommendation is to begin low and work up until you see the effect that you are looking for. It sure beats using too much and ending up with a dough that can't be used. This is why I always say to begin at 1% and work up gradually in 0.25 or 0.5% increments until you see the desired effect. Keep in mind that the effect can be rather dramatic with dough that is bulk fermented for long periods of time. The main application of PZ-44 in pizza dough as I see it is to reduce/eliminate dough memory/snap back especially with dough that will be formed into skins using a dough press. It also works well to make the dough easier to open if the existing dough is too strong/stiff to open easily (normally, I'd rather address problems like that through dough management). Occasionally dough that is opened into skins by use of a dough sheeter exhibits undesirable memory characteristics and PZ-44 works well in this application to relax the dough after sheeting. Be careful about using the PZ-44 dosage for acrobatic dough in a regular pizza dough as acrobatic dough is made with a fairly low absorption, no yeast and a very strong flour so in this unique application the PZ-44 provides the extensibility needed while retaining as much dough strength as possible so the dough doesn't over stretch or tear during use. We used to make the dough for the PMQ Show competitions using

PZ-44. One last thing, it works great in making an emergency dough too. I hope this provides a little insight into PZ-44.

Dough Clinic / Re: PZ-44

Maintaining a consistent finished dough temperature is important only if one desires to replicate the dough/pizza again. For example, if you are managing the dough in a specific manner as most do, and one time the finished dough temperature is 90F you will get one result but if it is 70F another time you will get a different result. The actual dough finished dough temperature being targeted will vary with many factors but the factor having the greatest influence will be the way you are managing the dough, so it isn't so much the temperature itself, but rather the ability to consistently achieve it from one dough to the next. A good example of how important this is would be if one were to bulk ferment the dough for say, 12-hours prior to going into a cold ferment process. A finished dough temperature of 90F would most likely result in a grossly over fermented dough unless the yeast level was adjusted to a very low level to account for the high temperature. The next time the dough was made the finished dough temperature would be 70F with no other formula changes the dough would be fermented to a significantly lesser amount at the end of the bulk fermentation period. This is one of the reasons why we often hear that "I didn't do anything differently from what I've always done but my dough came out very different" This is why you will often see me ask what the finished dough temperature was, and more often than not the answer is either "I don't know, or what should it be?" both answers indicate that maybe temperature is wholly or partially to fault. One other reason for targeting a finished dough temperature below 90F is that when we get into the 90F range we open the door for some potentially unwanted bacterial growth in the dough prior to our yeast becoming the dominant micro-flora, the result can be the unexplained development of off or strange flavors.

Dough Clinic / Re: Help with my dough

I forgot to add that from the cell structure it appears that the pizza skin was formed using a dough sheeter, fitted to the pan, crimp cut using a rolling pin over the top of the pan (cutter pan) and allowed to proof, my guess is about 30-minutes before dressing and baking. As for a dough formula you might try this one:

Flour: (bread type flour) 100%

Salt: 1.75%

Sugar: 2%

Oil: 2%

IDY: 0.4%

Water: (65F) 58%

Procedure:

Put water in bowl, add salt and sugar. Place the IDY in a small container of water at 95F and stir to suspend, allow to hydrate for 10-minutes, pour into the water in the bowl, add the flour and mix using a wooden spoon until the dough looks like wet oatmeal, add the oil and knead on the bench top just enough to work the oil in (about 2-minutes) then form dough into ball, oil the dough ball and place into a plastic bread bag, twist the open end into a pony tail and tuck under the dough ball as you place it into the fridge. On the following day turn the dough out of the bag onto a floured counter top, flour the dough ball and open into a pizza skin by your preferred method, dress and bake. NOTE: To use the dough on the same day it was made, after oiling the dough ball place it back into the mixing bowl, cover with a piece of plastic (a Walmart bag cut along the side and bottom works very well) no need to seal it tight, just drape it over the bowl. Allow the dough to ferment in the

bowl for a minimum of 4-hours, then remove from the bowl and knead the dough for a couple minutes, form the dough into a ball, oil the bowl and place the dough ball back into the bowl to ferment another 4 to 6-hours (can be longer if necessary). Turn the dough out of the bowl onto a floured counter top, flour the dough ball and open into a pizza skin.

If you don't have access to a cutter pan just use any flat pizza pan (well seasoned), using your fingers crimp a raised edge around the skin (don't make it more than 1/4-inch wide/high, then set the formed dough aside to proof/rise for about 20-minutes (maybe a little less depending upon the room temperature), then dress the skin and bake.

You might want to lightly wipe your pan with oil just to make sure the finished pizza doesn't stick.

General Pizza Making / Re: How to make this pizza? | What kind of pizza?

The pizza looks as if it has been baked in a cutter pan, probably without any oil in the pan.

General Pizza Making / Re: How to make this pizza? | What kind of pizza?

I might suggest two things to help you.

1) Use a lower height container, one about 5" high should work well.
2) Allow the container to remain uncovered for about 2-hours after you put it into the fridge and then apply the lid to the container, actually, just a piece of foil lightly crimped over the top of the container works as well as or better than a snap-on lid. Another option is to oil the dough ball and place it into a "food bag" or bread bag, twist the open end to form a pony tail and tuck it under the dough ball as you place it in the fridge, then kiss it good night and come back to it on the following day. I normally remove the dough from the fridge and allow it to warm at room temperature until it reaches 50F, then turn the dough ball out of the bag onto some dusting flour on the counter top, open into a pizza skin, dress and bake, but you can use other management procedures if you like.

Dough Clinic / Re: Dough too moist (Lehmann)

For most pizza doughs made at home 70 to 75F is a good target finished dough temperature.

Dough Clinic / Re: Help with my dough

Manuel;

Can you also provide a picture of the bottom of the pizza so we can see how it was baked?

General Pizza Making / Re: How to make this pizza? | What kind of pizza?

What was the finished dough temperature (temperature of the dough immediately after mixing).

Dough Clinic / Re: Help with my dough

I've got an exploded diagram of the A-200 mixer along with a parts identification listing for the diagram.

If you will send me your hard mailing address I'll be glad to send you a copy. If you can get back to me tonight yet at <thedoughdoctor@hotmail.com> I can have it in the mail tomorrow morning otherwise it will have to wait until next week as I'll be away from the office for a few days.

Prep Equipment / Re: Problem with my Hobart A-200

While I can't be too specific, the chains are just about all in the 2 to 4% added sugar range while many if not most of the independents are at 2% or less. If one was planning to make a reduction in sugar intake pizza crust would not be the most productive place to start, instead think of hamburger buns and hot dog buns at 10 to 13%, white bread at 6 to 8%, whole-wheat and multi-grain breads at 8 to 10%, sweet dough (cinnamon rolls for example) at 12 to 16% for wholesale and 18 to 22% for retail, Danish at 15 to 20% but could go as high as 25%, and then there are the cakes at 115 to 140%. The real winner if you want to reduce your sugar intake and still enjoy yourself is puff pastry (elephant ears and turnovers w/o a sugar topping) which comes in at only 2% dextrose (corn sugar). Even pretzels and bagels come in at 1 to 2% sugar. Check the ingredient legend on your favorite breakfast cereal too, mine shows sugar in the second most predominant position.....I'm not so sure I'd be overly concerned about sugar in pizza crusts, there is a lot more low hanging fruit to pick. Why not just limit sugary soft drinks to not more than 16-ounces, that way we can refill our cups as many times as we want, or just buy two. I think it's good to show ingredient content on labels, but if we underscore sugar, what about salt? What about total fat content? Natural v/s artificial colors and flavors? Where does it end???

The only real solution as my aging eyes see it is in EDUCATION, gee do they even offer nutrition education as part of the "health" curriculum in primary and secondary education any more? A lot of schools don't even offer P.E. and as parents we have to get off of our butts and go outside and play with our kids (I play tennis with the grand children) and then we need to teach our kids that there is something else in life aside from the television, Game Boy, X-Box, and computer. Huhhh! I can't imagine why obesity is such a problem today when it wasn't when I was a kid. I guess it's just easier to mandate nutrition than it is to teach it.

Dough Ingredients / Re: Sugar Reduction

I've never heard of a pizza moving enough in the oven to partially fall off of the baking stone. How does the diameter of the pizza before baking compare to the diameter after baking? Most commercial deck ovens operate at 525F and I've never experienced anything like that either.

Depending upon the dough formulation and management, if the skin is of such a size that it exactly fits the size of the stone the dough might be expanding laterally enough for it to expand over the edge of the stone, but not by any significant amount. Can you post a picture of what you are seeing? This might help in identifying the causative factor.

Dough Clinic / Re: Sliding Pizza

My response to "full fermentation" pertains to any kind of yeast fermented dough. I think where there might be some confusion is in the question itself where "full" fermentation was referenced. Full fermentation pertains to the maximum amount of fermentation that a dough, made under specific conditions by a specific formulation can be fermented without imparting weakness to the dough. I think what you are referring to is "optimum" fermentation which is an entirely different thing. Optimum fermentation is the amount of fermentation a dough receives to make any desired product, be it bread, rolls, or pizza. Because in pizza production we are typically more concerned over the flavor imparted by fermentation, as long as the dough exhibits performance characteristics acceptable for the way we are making the pizza we can use just about any fermentation time we need to use. While extended fermentation periods will substantially weaken the dough structure, unless we are planning to win a contest for the largest hand tossed pizza skin, it really doesn't make that much difference if it's weak or not. Some weakness

is desirable as it allows for easier opening of the skin and reduces or eliminates shrinkage/snap back while too much can result in a dough that tears too easily or is sticky to work with. In short, optimum fermentation for a dough is the amount of fermentation that the dough is subjected to which allows it to produce the desired end product. Because of the number of variables driving dough fermentation it is all but impossible to speculate, outside of broad generalities, what the optimum fermentation for a dough might be. This is where the fun part of making pizza begins, experimenting with your dough to identify the optimum processing/dough management parameters.

I'm sorry for any confusion.

Dough Clinic / Re: What is full fermentation?

Chayo;

Could you give me a call at 785-537-1037? I'd like to discuss this with you.

I'm located in Manhattan, Kansas just a couple hours south west of Omaha.

I'll be away from my desk all of this afternoon but I plan to be back around 5:00 p.m.

Just e-mail me with the time that you want to call me and I'll be sure to be at my desk to receive your call.

New York Style / Re: Hobart VCM FINALLY put to good use...

I've found that if you're baking your pizzas at anything under at least 700F the bread flour will generally perform better. A lot will depend upon your dough formulation though, but for a formula without added sugar or diastatic malt the above holds true.

Neapolitan Style / Re: Using Bread Flour

Just to confirm:

He receives the frozen dough ball, places them in the walk in freezer for a couple of days holding, then slacks out/thaws, removes from the bags, forms into skins using a dough sheeter, dresses and bakes?

Or, does he receive the frozen dough balls, take to the walk-in cooler to slack out for a couple of days, remove from the bag, open using a dough sheeter, dress and bake. It sounds like the second method is the one he is using. That being the case, you might want to target for a finished dough temperature in the 70 to 75F range, cross-stack for 3-hours before down-stacking, then deliver to him after 18 to 24-hours in your cooler. That should come pretty close to giving him something close to what he is presently using. If he complains that your dough exhibits too much memory or is too strong get some PZ-44 and add about 1% (you will need to experiment) to the dough. Remember that the PZ-44 will reduce the mixing time so just be aware of that.

New York Style / Re: Hobart VCM FINALLY put to good use...

The increase in dough volume can by significantly impacted by the dough absorption so it is not always a good indicator and the conversion of starch to sugar by the amylase enzymes and mellowing of the proteins by proteolytic activity are difficult to measure or ascertain. The most effective and commonly used measurement for dough fermentation is referred to as the first full rise. By this method the dough is allowed to ferment/rise undisturbed in a suitably sized container until it rises and begins to collapse and fall back on itself. This is the first full rise and it typically represents 2/3 of the full fermentation that is correct for the dough at hand. So, if the first full rise is reached in 4-hours, the full fermentation for that particular dough will be reached in a total of 6-hours under

the conditions in which the dough was fermented. Now, if you want to use the dough at full fermentation or not is a totally different story. Some like the strength of dough made with less than full fermentation (tossing the dough comes to mind) while others like the extensibility and flavor characteristics achieved through over fermentation of the dough. This is why I almost never concern myself with determining the full fermentation of a dough unless I'm working with an unknown flour that I want to quickly learn how it responds to fermentation, instead, I like to recommend with controlling the factors (time, time temperature and weight of ingredients) as consistently as possible and then finding the total fermentation time that provides the characteristics that I'm looking for in both the dough and finished crust, once you have identified that time, if you control the factors you can use the final time to determine when your dough is properly fermented for your specific use/application.

Neapolitan Style / Re: Dough maturation depending on temperature.

Back in "the good old days" the typical ash content for most bread flours milled here in the U.S. was in the range of .45 to .48%. This was done to help produce bread with a brighter, whiter crumb color, then came the bread called "Grandma's Bread" made with an unbleached flour so now the finished crumb color was more yellow (actually creamy in color) and all was good as people liked it, so the flour millers decided to "up" the ash content to 0.5% to 0.52% as this allowed them to mill the wheat to a higher extraction rate (more pounds of finished flour from a given weight of wheat) and all remained good by consumer and baker standards as a white crumb structure was no longer the gold standard for bread, in fact the saying "the whiter the bread the sooner you're dead" came to be, and ever since then the ash content has been gradually creeping up primarily as a way for the flour miller to hold the line on cost. Now with some of the hard white wheat varieties we are seeing ash content approaching 0.6%. Ash content used to be used as a quasi measure of protein quality/quantity, this is because as the ash content increases the bran content of the flour also increases slightly, the bran has a small amount of protein attached to it that is mostly non gluten forming, this protein is measured as protein with no distinction between gluten forming and non gluten forming, so we end up with a higher protein content in the flour but all of that protein is not of the gluten forming kind so it was said that while the protein of a long extraction flour was higher it was not necessarily a higher quality protein in terms of gluten strength. You see this all the time when you look at a whole wheat flour containing all of the bran, here we typically see an increase in protein content of about 1% over the same wheat milled as a patent or straight grade flour. Soft wheat flours are still milled to a very low extraction rate to retain the whiter appearance of the flour necessary for many pastry applications, however, with that said, for a good number of years now, some pastry flours have been successfully made from hard wheat varieties, but still with low extraction rates.

In some countries (Mexico for example) it is common to mill the flour to only one extraction rate then use the standard milled flour as a bread flour and then proceed to mill the flour to a finer/smaller particle size for use as a pastry flour.

New York Style / Re: wangji's NY pizza with Tom Lehmann's NY Pizza Recipe

How is he presently managing the frozen dough that he uses?

New York Style / Re: Hobart VCM FINALLY put to good use...

Clostridium Botulinum results in Botulism poisoning resulting from the aflatoxin which is produced but not destroyed by the normal heat produced when baking or

heating most foods. It is the most dangerous pathogen we are faced with in the food industry as it is fatal more often than not. As its an anaerobic spore forming bacteria we have normally encountered it in improperly canned foods and infused oils but more recently we are seeing it in vacuum packaged pita, tortillas and pizza crust as well as some breads. When I was working at the AIB we saw it in canned bread as far back as the 1960's. Nothing wrong with making your own infused oil/butter, just be sure to play it safe and discard it at the end of the day.

Off-Topic Foods / Re: The Perfect Garlic Butter recipe

Absolutely! Dough that is too warm will ferment at a faster rate so within any given period of time the warmer dough will receive more fermentation. Depending upon the actual dough temperature and the fermentation time the faster fermentation rate can break down more of the gluten making the dough softer and more extensible. Adding more water to the dough will also make the dough softer and more extensible. Keep in mind that this is only one aspect of a warmer or over fermented dough as there are many other things that come with the greater fermentation.

Dough Clinic / Re: How to get the perfect hydration level?

Tia;

Most small mobile operators don't have the luxury of electric or propane refrigeration so they use large ice chests. They scale and ball the dough, oil the dough balls with salad oil, place into individual plastic "food" bags, twist the open end into a pony tail and tuck under the dough ball as you place it in the cooler to cold ferment 18 to 24-hours (could be more if you want), after the cold ferment period place the dough balls into a freezer for about an hour to super cool them, then place a layer on the bottom of an ice chest, place a sheet of cardboard over the layer of dough balls, add another layer of dough balls, another sheet of cardboard and a few ounces of dry ice on the cardboard, some insulation over the dry ice and build up two more layers with more dry ice on the very top, close the chest and you're good to go. At the event, transfer bagged dough balls to a plastic dough box to warm up to 50F, then begin opening into skins as you need them. The dough balls in the dough box will be good to use for 2 to 3-hours once they reach 50F. To use the bagged dough just invert the dough ball while stripping the bag over the dough ball (bag will normally invert as the dough ball drops out). Let the dough ball drop into a bowl of flour and begin opening by your preferred method.

Dough Clinic / Re: Mobile operators storing dough

And also, salt has a regulating effect upon the fermentation rate. Higher salt levels slow the rate of fermentation and lower salt levels allow for a faster rate of fermentation. Years ago when I was looking into the history of pizza with Evelyn Slomon I observed that the older methods of making almost always used a higher salt level than more modern methods. I attributed this mostly to the lack of refrigeration available at the time and the fact that bulk fermentation was the order of the day as opposed to subdividing the dough into individual smaller pieces which are far easier to manage with regard to fermentation. Add to that the fact that salt strengthens the dough, the higher salt levels fit into the pizza dough equation quite well. It really wasn't until we began to see the use of refrigeration in making pizza dough that we saw salt levels coming down to where we typically see them at today (1.75 to 2.25%). With refrigeration to participate in controlling the rate of fermentation the higher salt levels were not needed and in all probability at one time or another resulted in the dough moving too slowly after the refrigerated storage (cold ferment) period.

Dough Clinic / Re: Less salt for cold fermentation

That being the case, he might want to get some pictures of a composite peel (like those shown in the post) and see if he can get them made locally. When I was there a few years ago we needed some bagel boards so we down loaded some pictures of bagel boards from the internet and by the end of the day we had a stack of locally made bagel boards to work with.

Just a thought.

Shop Talk / Re: Serving Peel to Table

John;

What you are experiencing now is why we so often recommend to pizzeria operators that they at least identify alternate flour sources (different brand usually from a different supplier) and keep the information tucked away in the "just in case" book. While we haven't heard of any recently, it is entirely possible to have a flour mill explode creating a regional spot shortage of some flour types, or as we witnessed a few years ago a crop failure which resulted in at the very best rationing of flour, or sometimes flour of a specific type wasn't even available and if it was there were a lot of complaints regarding its quality, granted a crop failure will reach across all of the different milling companies but as we have seen in the past, some were able to manage better than others and some suppliers had a better inventory on hand than others so you could normally eek out some flour to get by on.

The practice of having alternate suppliers for all of their ingredients is a very common, if not universal practice among the larger producers as well as chain store commissaries.

An anecdotal story: When the last crop failure made its presence known I had a client who immediately rushed out and went to his alternate suppliers and bought up all of the flour he could get his hands on (he ended up renting a reefer to store it in.) and he never had a flour problem during the full year that it took to get into a new wheat crop. I might also add that while the crop issues were horrid here in the U.S., Canada had also experienced some crop issues but not as severe as those here, so why didn't we just buy wheat from Canada???????????? Well, it seems that OUR GOVERNMENT had restrictions on the amount of wheat that we could bring in from Canada, and by the time they got their heads pulled out of where they normally keep them almost 9-months had transpired and by that time a bag of anything even resembling flour was worth 3X its normal value.

Remember this story as much of our wheat comes from Texas, Oklahoma, Colorado, Kansas, Nebraska, North and South Dakota, and Montana. Some of these states have been devastated with flooding potentially reducing the overall wheat crop harvest which potentially could impact flour prices this summer. Like the wheat farmers say "It ain't wheat until it's in the bin"

Dough Ingredients / Re: General Mills Gold Medal Flour Recall

My normal recommendation is to give it the additional needed mixing time, then measure the temperature again most of the time the temperature gain will only be 1 or 2F, in that case I just give the dough an additional 15-minutes of cross-stack time or uncovered time in the fridge and then make a note to use 5F colder water the next time. Remember that for me, I find that a targeted finished dough temperature of 75 to 80F works best for me at home so the above only holds true if the dough temperature rises above 80F, if it still falls within the 75 to 80F temperature range with the additional mixing no changes should be necessary. This is true when I'm working in a pizzeria too, but in that case I normally target a

finished dough temperature of 80 to 85F unless circumstances dictate otherwise.
Dough Clinic / Re: Ice vs. no ice experience

I hate to sound like I'm beating a dead horse here, but be sure to go back a few weeks and check out the posts on the potential food safety issues associated with home made garlic oil, the same warning applies to garlic butter as both create an anaerobic environment conducive to the potential growth of clostridium.

Off-Topic Foods / Re: The Perfect Garlic Butter recipe

The PortionPadL is made of a composite material like that which I mentioned above and it would have the best chance of working for this application. They are quite moisture resistant as far as pizza peels go, and the hard surface should make them easy to clean and sanitize too. Maybe look into getting some without the cutting (portion) lines to make it even easier to clean. With all of that said, before ordering a case of the peels I would still run the concept across my food safety/health department inspector to get their blessings. Be sure to have one of the peels that you are proposing to use on hand so the inspector can see exactly what you are proposing to use.

Good luck, let us know what happens if you decide to proceed.

Shop Talk / Re: Serving Peel to Table

That is correct so it would feel softer, while the dough made with ice would feel firmer possibly being interpreted as more hydrated, meaning that the water had better absorbed into the dough. If on the other hand we are saying that the dough made with the ice was softer and more extensible than the dough made without ice there is a possibility that the dough made without ice was sufficiently warm to allow for over fermentation of the dough which would result in a tighter, more "bucky" dough that lacked in extensibility. This characteristic would be exasperated by the dough management procedure used, for example, if the dough was placed into containers and sealed closed when placed into the fridge, this would result in the heat being trapped in the dough ball resulting in faster fermentation of the dough. This is why it is important to measure the dough temperature immediately after mixing. The finished dough temperature sets the stage for everything that happens after mixing.

Dough Clinic / Re: Ice vs. no ice experience

I'm guessing that the dough made with ice was colder than the one made without ice. This would make the dough without ice ferment at a slower rate so it would be firmer, less relaxed and extensible than the warmer dough made without ice.

Dough Clinic / Re: Ice vs. no ice experience

If you'll remember, I think it was Ben & Jerry's ice cream that had a recall on their "Cookie Dough" ice cream, yep, you guessed it, raw cookie dough was the culprit. I remember as a kid I used to love it when we made a cake as I normally got to lick the bowl, it's a wonder that I made it through my childhood.

Dough Ingredients / Re: General Mills Gold Medal Flour Recall

Craig;

You bet!!!

Hundreds if not thousands of people die from that stuff every year. Excessive consumption or inhalation can both be deadly.

For anyone wondering, Craig is alluding to H2O (water). It's all in the name.

Pizza News / Re: Pizza Hut removes additives BHA and BHT

Like I've always said, people would be scared to use flour if they knew more about it. The ones that are especially troublesome to me are the people who buy wheat as is and grind their own flour. What is surprising to me though is that G.M. didn't pick the problem up on their micro analysis since e-coli is one of the things they test for and report on their COAs.

Dough Ingredients / Re: General Mills Gold Medal Flour Recall

BHA and BHT are used as anti-oxidants to fend off oxidative rancidity. While the article doesn't specifically say, the "natural" replacement is tocopherols AKA vitamin E so it's probably easy for them to get away from the BHA (Butylated Hydroxy Anisole) and BHT (Butylated Hydroxytoluene), consumers don't like scary sounding names in their food anymore. Anybody wanna take a guess as to why these additives are used in making rubber? I just love it when ingredients and additives are supposed to be ultra bad for you just because they're used in some other commercial application, just think, yeast is commercially used to produce "alcohol" which we all know is a deadly poison and it produces alcohol in our dough and finished crust so by association it must be bad for us, how about salt? Also deadly, even water has its issues, the list just keeps going on and on. I'm not against making our foods safer and with cleaner labels, I'm just against all the scare hype that we read about in the media.

I now relinquish my soap box.

Pizza News / Re: Pizza Hut removes additives BHA and BHT

On an outside chance, you might contact Jerry Henke, Director International Applications Support, Middleby-Marshall/CTX Oven Company. You can contact him at [>jhenke@middleby.com](mailto:jhenke@middleby.com)

Shop Talk / Re: Where to buy conveyor pizza oven in China?

All Trumps is somewhat the "go to" flour in New York, but any of those mentioned by Craig would work equally as well and might be easier for you to find locally. As for myself, I use General Mills Full Strength at a little over 12.5% protein content as compared to 14% for All Trumps.

Dough Clinic / Re: Best type of flour for NY style Pizzas?

You might try just hand crushing the plum tomatoes after thoroughly draining them, the pieces will be larger than what you might be accustomed to but they should hold their water much better without exhibiting the syneresis that you're presently getting, as an added bonus you will also get a more pronounced flavor from the sauce as the larger tomato pieces provide a burst of flavor and texture to the pizza.

Sauce Ingredients / Re: Sauce

Also, keep in mind that when made properly, whole wheat doughs are no more difficult on the mixer than your regular doughs made with white flour.

I've made a number of posts on how to determine the absorption of any one particular whole wheat flour but is short you need to use a soaker. This is done by blending all of the whole wheat flour with 75% (actual dough absorption for your flour may be different) absorption/water based on the weight of the whole wheat flour. Allow this soaker to hydrate for one hour at room temperature (this is best done right in the mixing bowl). When making the soaker it is only necessary to mix the dough just enough to wet the flour). After the soaker has hydrated add the remainder of your ingredients and mix just until the dough comes together and

forms a smooth, cohesive dough ball, it should be slightly tacky after mixing. Take the dough directly to the bench for scaling and balling, place into lightly oiled individual containers for cold fermentation. I like to oil the entire dough ball and place each ball into a plastic bag, twist the open end to form a pony tail and tuck it under the dough ball as you place it in the fridge. The dough will be ready to use in 18 to 24-hours.

Prep Equipment / Re: Best Stand Mixer Under \$1K (Whole Wheat Dough)

How are you feeding it and how often?

Dough Clinic / Re: Fed starter but no dough rise?

Can you share with us how you are measuring your ingredients and making the dough? How are you managing the dough from the mixer to the bench for use in making skins?

Neapolitan Style / Re: Caputo gluten content

Walmart is notorious for having products private labeled for them, not just in food but in just about everything else too so if you know what you are looking at you can usually identify a name brand product under a Walmart label, the same is true for just about any other retailer with a house brand.

One thing to keep in mind about Walmart though is that their suppliers seem to change faster than some people change their underwear, so if things suddenly take a change, don't be surprised. My rule for Walmart is if you like it, buy it, buy a lot of it, because it may not be there tomorrow or it may be made by a different supplier. As you know, Walmart is all about \$\$\$\$\$\$.

Sauce Ingredients / Re: Canned tomato common manufacturing?

Full Red is a product manufactured by Stanislaus, one of the premier tomato processors in the U.S. Which Full Red product do you have?

Full Red Fully Prepared Pizza Sauce

Full Red Tomato Puree

There is also a Full Red Marinara Sauce as well as a Full Red Cacciavatore Sauce

The Full Red Prepared Pizza Sauce and the Full Red Tomato Puree are specific to pizza.

Sauce Ingredients / Re: Full Red Pizza Sauce

Due to both the downward pressure of the dough weight and the entrapment of moisture under the dough ball those folds generally just flow out and form a cohesive bottom to the dough ball. This even happens with a dry dough such as one used for a thin crispy or thin cracker type crust but the dough flow is not as great due to the dry dough lacking the ability to flow out. With enough time though even the driest dough will flow out to form a cohesive bottom. You can see this in a lot of the photos posted here showing the dough as it comes out of a container with essentially no signs of the dough being folded during forming of the ball. We see a similar thing happen with the forming of Kaiser rolls (the rolls with the swirl on top). The swirl is stamped/pressed into the dough, but even with a dough at roughly 55% absorption sometimes the swirl pattern still flows out and loses definition in the baked roll.

Dough Clinic / Re: What's the pizza's top and bottom when its a ball and is that a rule?

When the entire dough ball is oiled, not just the top, or if the dough box is oiled

there is much less of a difference between the top and bottom of the dough ball than if just the top is oiled. Some of the shops that I've been in practice this so they don't have to differentiate between the top and bottom of the dough ball. The practice of oiling the entire dough ball is also used much more frequently in those shops where a press is used for forming the skins than a sheeter or hand forming method. When a sheeter is used to form the skins it is all but imperative that the dough be oriented with the top of the dough ball facing down when the dough enters the sheeting rolls. Failure to do so generally results in the dough hanging up on the chute which guides the dough into the sheeting rolls, or the dough sticking to the sheeting rolls, either will result in a lost dough piece. With hand forming the dough is easier to open if placed on the bench with the top of the dough ball facing down (towards the bench top), this positioning of the dough ball allows the dough to stretch across the bench easier while providing better traction with the hands to allow for stretching the dough. From a finished product stand point, if the dough ball is not oiled, and a dry skin forms on it that skin is not soluble and will never be softened, making it an excellent candidate to entrap leavening gas forming large bubbles in the process so for this reason a lot of operators automatically place the ball top side down when opening regardless if it has been oiled or not.

Dough Clinic / Re: Whats the pizza's top and bottom when its a ball and is that a rule?

You bet!

Go to <www.MrPeel.com> or check out the Portion Peel at <www.portionpeel.com> or American Metalcraft at <www.amnow.com> I just got mine from Portion Peel and I really like it since it has laser etched circles on it for both 10 and 12-inch diameter pizzas. I believe it's also available in different sizes too.

Stones/tiles/steel, Pans & Accessories / Re: Wooden peels commonly used for neapolitan pizza

While I wouldn't recommend eating the raw dough, just in case. Keep in mind that you will need to reach an internal dough temperature of at least 160F to kill any potentially harmful bacteria BUT since the dough will not set until an internal temperature of at least 180F is reached, and a finished dough temperature close to 200F will be achieved in the normal baking of the pizza, the 160F minimum internal dough temperature will be easily reached and exceeded, rendering the finished pizza close to sterile for all practical purposes as it comes out of the oven. Be sure to wash your hands well after breaking the eggs to prevent the possibility of cross contamination. By the way, Danish pastry and sweet dough will typically contain 15 to 24% whole eggs when made the way they should be made. New formulas for these products are lucky to contain 10% due to the cost issue.

Other Types / Re: How to make stromboli/calzone?

You could use par-baked crusts (no refrigeration required) or to store raw dough balls you could place the dough balls into individual plastic food bags (not Baggies) and then put them into a cooler/fridge overnight and then, when you are loading for the event, into a freezer for super cooling (might even freeze a little of the outer edge of the dough balls which is OK) then transfer to a suitably sized cooler chest with some dry ice (on the top, be sure to separate from contact with the dough balls with a sheet of corrugated cardboard) to hold while at the event. To use the dough balls, transfer to a holding shelf (remember, they're in individual plastic bags so this should not pose a problem) to temper at ambient to 50F before opening into skins. The dough balls being held at ambient should keep for at least

an hour or more once they reach 50F.

New Forum Members / Re: Dough storage

I use an Alfredo sauce for all of my seafood pizzas. I few years ago I did some experimenting with some fresh salmon that I had and I used a 50/50 blend of Alfredo and sour cream for the base and flavored it with dry dill weed.....really good!

Pizza Toppings / Re: Clams?

I can't tell much from the photo except that it is formed by hand with what appears to be a pinched edge. The party slice might suggest Illinois or Ohio as the basis. Does not look New York to me.

I'm guessing the dough was made with an absorption of about 55%, little or no sugar (0 to 1%), IDY at maybe 0.25%, at least 24-hours cold fermentation, salt at 2%, oil at 1%. Just an educated guess.

Dough Clinic / Re: Pizza crust

For your peel dust you might try equal parts of corn meal and semolina flour (both readily available at any supermarket). The semolina flour has a larger particle size so it doesn't absorb moisture making peel release easier and the corn meal acts as little ball bearings further helping the release/transfer from peel to baking stone. You really don't need very much at all on the peel. After you place the skin on the peel give it a shake to ensure it is not adhering to the peel, then as you dress the skin give it another occasional shake. Once you get the hang of it dressing the pizza skin will go pretty fast with that occasional shake and transfer will be a snap. Not bad for a first home made pizza.

General Pizza Making / Re: Tom lehmann NY dough question?? help

Freddy;

With so many variables coming into play it is difficult to say much about the performance of your dough, but as you know, we all encourage experimentation as a way of fine tuning our dough to our specific conditions and to learn more about dough in general as well as ingredient function and dough management. With this in mind I would encourage you to make your dough as you normally do or have been doing (make sure to have enough dough for two dough balls) then use one dough ball from the fridge after 12-hours and the other one after 24-hours and if you make three dough balls you could even try one after 36 or 48-hours. To use the dough, remove the dough container from the fridge and place it on the counter top until the temperature of the dough in the container reaches 50 to 55F. I don't like to say "room temperature" because that could be anything from 60F to 100F or more, and trust me, there will be a huge difference in the dough between those two temperatures. This is why I recommend using 50 to 55F as your target temperature indicating when it's time to begin opening the dough into pizza skins. OK, does the dough need to be in the 50 to 55F range before you begin opening it? No, but for most of us it works, but a different temperature might work better so this is something to experiment with, just be sure to take notes so you can track your results and when you do find what works best for you strive to be consistent and you'll be rewarded with consistent and predictable dough performance, not to mention great pizzas. Have fun, don't be afraid to experiment (remember that even bad pizza tastes pretty good), keep good notes and share your findings. Welcome to the club!

General Pizza Making / Re: Tom lehmann NY dough question?? help

Peter;

You can freeze dough even after a period of cold fermentation but the tests that we did at AIB showed that consistency of dough performance was all over the board and after about 15-days we never knew how the dough was going to perform. When freezing dough at home, as you know, there is a lot that you can get away with that wouldn't "fly" in a pizzeria. For example, if the dough gets too soft just re-ball it, give it time to relax so it can be opened into as pizza skin and life is good, works at home but not at your local pizzeria. Same thing if the dough proofs/rises very slowly, just give it more time to rise and life is good. This doesn't mean that the dough is responding any differently at home than at a pizzeria but it's how we are responding to the differences in the dough to make it work in a satisfactory manner. What I'm trying to do is to educate readers on what is actually happening to the yeast when the dough is frozen, then based on that knowledge they can engineer their dough or use it in such a way so as to get the best performance possible out of a dough that has been subjected to such adverse conditions as home freezing.

In Jeff's article he actually addresses some of the same issues I touched upon such as the diminished frozen shelf life (2-weeks without any real problems, but after that, up to about 4-weeks there is inconsistency in dough performance that has to be accounted for in the way we handle the previously frozen dough). It should also be noted that Jeff specifically mentioned freezing dough that went straight from the mixer to the cooler which helps to significantly limit/retard yeast activity, even after 48-hours, prior to freezing the dough. With all of this said, also keep in mind that when we are referencing "coolers" we are referring to commercial, high efficiency walk in coolers, placing dough in a home fridge allows for significantly more fermentation to take place within the same period of time so to avoid disappointment one probably should not expect the same level of dough performance after more than 2-weeks in the home freezer.

When I made reference to the energy star rating of home refrigerators and freezers I was referencing the fact that in order to achieve the energy rating they cycle on and off 24/7/365 to remain frost free. That part is good, the part that isn't so good is the fact that this temperature cycling has a very deleterious effect upon everything stored in the freezer. Just consider ice cream, when you buy it the ice cream is smooth and creamy but after a week or so in a home freezer there are ice crystals on the inside of the lid and the ice cream is beginning to look somewhat curdled. This is the result of home freezers performing more like a freeze drier than a food preservation chamber. The mechanism for this is as follows: Coils warm up to defrost, causing air to warm up, causing packaging to warm up, causing the air within the package to warm up, since warm air holds more moisture than cold air the moisture in the product moves into the warm air; then the defrost cycle ends and the coils cool down, the air cools down, the packaging cools down and the moisture in the air within the package condenses and freezes to the inside of the packaging. Repeat this 12 to 24 times a day and now you know why that loaf of bread you put into the freezer a couple weeks ago now has ice in the bag along with the bread. We just call it "freezer burn" at home. This is why I cherish my chest freezer in our basement that doesn't even have an energy star rating (too old)since it doesn't have any automatic defrosting features we experience very little, if any freezer burn on any meat coming out of that freezer (stored for close to or even more than a year), BUT the down side is that yearly we have to empty the chest freezer and manually defrost it, a small price to pay for not having all the problems with food quality associated with freezer burn.

Dough Clinic / Re: Freezing scratch dough balls - process and flavor question

Jeff;

No, there would be no benefit but there would be issues with yeast mortality during the freezing process. Think of yeast cells as water filled balloons, prior to fermentation those balloons have just a little water in them but as fermentation progresses the yeast feeds and plumps up (now it's like a balloon filled with as much water as it can hold), during the freezing process ice crystals form inside the yeast cells, since we are not talking about blast freezing the dough (-35 to -65F) large ice crystals are formed, just look at your ice cubes in your home freezer as compared to commercially made ice. The small ice crystals created during blast freezing are very small but those created during static (slow) freezing are very large and angular in shape. As the crystals form inside the expanded yeast cells they puncture the cell wall allowing the plasma material inside to escape the cell. A good deal of this material is the amino acid glutathione (a reducing agent) in fact it's the same material found in "dead yeast" which is used to make dough more extensible. The loss of the plasma material from the yeast cell can severely damage the yeast cell(s) plus the glutathione causes an unwanted softening of the dough. This is why we NEVER want to allow the dough to ferment prior to freezing. There is one exception to this in the process referred to as pre-proofed frozen dough. By this method the dough is fully formed into the final product, allowed to proof to full size and then blast frozen and maintained in a frozen state until it is ready to be baked straight from the freezer to the oven. You've seen product made by this process at your local supermarket it's called Freschetta Pizza. Additionally a lot of the rolls used by restaurants are made by this process due to the ease/convenience of use.

Dough Clinic / Re: Freezing scratch dough balls - process and flavor question

I'm not sure I'm understanding your question correctly. But here goes:
When freezing the dough the objective is to get the dough frozen as quickly as possible after mixing, so letting the dough set out for 20-minutes at room temperature prior to freezing is not beneficial to the end product quality/performance. The dough balls are best flattened into "pucks" as they are placed in the freezer since the puck shape freezes more efficiently than a ball shape (poorest shape for efficient freezing). The dough can be considered thoroughly frozen after about 18-hours in a home type freezer. It will keep for a maximum of 15-days providing decent performance, after that time the dough will become inconsistent in performance. The best way to use frozen dough is to remove it from the protective packaging/wrap, oil the dough ball lightly, and place it in the refrigerator to slack out/thaw for 18 to 24-hours, then bring the dough out of the cooler into room temperature for 1-hour, then place it back into the refrigerator for at least 24-hours before using. We have found that commercially made frozen dough performs quite well after 24-hours, but because reducing agents (L-cysteine/glutathione) are commonly used to reduce dough mixing time and enhance dough handling prior to freezing it rarely performs as well after 48-hours. Dough made without the reducing agents do not exhibit the continued softening effects of the reducing agent so they will generally exhibit pretty good performance at 48 and some times 72-hours as well. As you can see the dough is getting quite a bit of cold fermentation by this method so there will be a decided flavor improvement over frozen dough that is just slacked out and used right away.

Dough Clinic / Re: Freezing scratch dough balls - process and flavor question

GT36;

The reason for different temperatures is due to different types of coolers and different cooler temperatures. For example, reach in coolers are not nearly as efficient as walk in coolers so we reduce the finished dough temperature to make up for the lack of cooling efficiency when using a reach in cooler. Also while the "legal" operating temperature range for a commercial cooler is 34 to 40F all coolers do not hold that temperature during the busy part of the day when there is a lot of traffic in and out of the cooler so in this case again we might need to decrease the dough temperature. In home baking, it is rare that we find a refrigerator operating efficiently at this temperature range due to the small size and Energy Star Rating (high star rating comes at the price of operating efficiency) so cooler dough temps are needed here too. For a commercial pizzeria with a decent size walk in cooler (not overly crowded) a finished dough temperature of 80 to 85F performs best, BUT because all shops are different it is not uncommon to find that a different temperature might perform better in some shops.

Actually, our goal is NOT to cool the dough as fast as possible, but instead to cool it at a CONSISTENT rate. Some fermentation is desired in the cooler, that's why it is referred to as "cold fermentation". This allows for the yeast, enzymes and yeast by-products to work on the dough and soften/mellow the gluten for improved dough handling properties and to set the stage for flavor development and crumb porosity at the time of baking. The crumb porosity is important as it is a key component in the development of crispiness. The only time when we really want to mix the dough as cold as possible and get it cold as quickly as possible is when we are making either frozen dough, or a highly specialized dough for use in an application where the dough will be made at a commissary operation, shipped to the store(s) and then managed as a just mixed dough at the store level.

The finished dough temperature is absolutely critical in order to have effective dough management. If the dough is too warm more fermentation than desired will take place potentially resulting in blown dough or dough that will perform differently 2, 3 or more days down the road. The same can be said for a dough that is too cold, it may be difficult to open on day one but then fine on day two or three. As for using a generic spray oil as opposed to brushing the dough balls with a generic salad oil sure, not a problem, it will work fine, but in the long run it will contribute to eroding your profit margins at the same time due to its greater expense.

I hope this has answered your questions.

Dough Clinic / Re: Dough Management

You might want to contact Steve Green (PMQ/Pizza Marketing Quarterly Magazine) at <sg@pmq.com> and ask him if he can put you into contact with their contact in China. Steve has hosted some pizza training in China and he has some contacts there that might be able to help. Tell Steve that I sent you.

Shop Talk / Re: Where to buy conveyor pizza oven in China?

I agree with both of the above, but knowledge that is gained and NOT SHARED is knowledge lost. Many of us have given a lifetime to gaining our knowledge, and a lot more than \$2,000.00 and we share it freely, a couple of weeks and \$2,000.00 and not sharing is arrogance, plain and simple.

Dough Clinic / Re: The secret to perfect pizza dough (according to a certified pizzaiolo)

The potato culture has been commonly used in the baking industry to achieve a San Francisco type of sour. I total agree with Craig. You might also just mix equal

parts of flour and water together in a wide top bowl and let it set out at room temperature for 24-hours, then begin the culturing process.

Dough Clinic / Re: starter + 00 flour, water, and salt = worst pizza I've ever made?

When the dough absorption is increased the dough becomes softer and to an extent, more extensible the results in the dough exhibiting more oven spring during the first minute or so of baking which results in a more open crumb structure which in turn promotes improved crispiness in the finished crust. The down side to increased dough absorption is that it can make the dough more difficult to handle. I've seen doughs made with absorption so high that the only way the operator could handle the dough was by first oiling his hands. Think of an English muffin and Ciabatta bread where the crumb structure is very open, the doughs that these products are made from are more like a batter than a dough as we know it.

General Pizza Making / Re: Hydration, how high is too high?

How does the function of this differ from a Ripple Sheet (looks a lot like one) or a Pizza Savor (plastic mat)?

Shop Talk / Re: Our new pizza box, with anti soggy/sticking technology haha

Peter;

All food products not sold at the site of manufacture must have an ingredient declaration. The only exception that I'm aware of to this is what is referred to as the "cottage industry exception". Under this exception if the total income generated by the business is less than \$50,000.00 a year you don't need to jump through all of the regulation hoops. This is the regulation that allows people to sell baked goods at the flea market and farmer's markets. While a vendor may not have the ingredient data the manufacturer will have it. I suggest that anyone dealing with a supplier who will not provide the ingredient panel for their product think twice, maybe more about it. If that product contains a known allergen how would you know? Even more so, how would your customer(s) know? If someone were to get sick from eating the product the person using the dough to make pizzas would be the first line of litigation, then it would come out that you didn't know what was actually in the dough (negligence), and finally it would filter back to the original dough manufacturer. Think of buying a gluten free crust without knowing what the ingredients were? A few years ago We began looking at GF crusts made by small local bakers and home bakers selling their GF crusts. The crusts were indeed great crusts...too bad they were made with spelt and rye and that explained why they were so good at the time.

Dough Clinic / Re: Frozen Dough Balls

Peter;

In two words: You can't.

If they were creating sugar through the conversion of damaged starch with amylase enzyme they would need to add additional damaged (pre-gelatinized) starch as a dough ingredient which SHOULD show up on the label. Even if they were using reclaimed product that had been baked and ground to a meal like consistency (may not show up on the label) they would still need to add supplemental amylase unless they are looking at it as a processing aid in which case it might not need to be shown on the label.

Then too, sugar is an ingredient on the GRAS List (generally recognized as safe) so

they COULD leave it off or show it at an incorrect level in which case the worse thing that could happen to them would be a Federal order to show the sugar at the correct level, add to that, if they are using pre-printed labels they might be granted a 90-day extension to use up the labels they have in their inventory. I've seen this "trick" used with new pizza introductions before so it would be nothing new.

This is why I only use the ingredient declaration as a starting point when reverse engineering a product or mix, I always bench mark off of the finished product for making my final ingredient adjustments.

Dough Clinic / Re: Frozen Dough Balls

The only commercially available flour that I'm aware of that breaks 14% protein content is General Mills All Trumps. To be perfectly honest with you I have never seen much if any difference between All Trumps and the more readily available flours with protein content in the 13% range and when it comes to making pizza dough with a lot of fermentation don't discount the strong bread flours with a protein content in the 12.2 to 12.8% range, the wheat varieties that these flours are made from typically exhibit excellent tolerance to fermentation.....it's not all in the protein content when it comes to both strength and fermentation tolerance.

Dough Clinic / Re: Anyone know of High Protein Bread Flour with 14 percent protein

Peter;

Glad to help.

If you add up all of the percentages in the formula (164%) (bakers percent) and divide it by 100 (1.64) then divide that into the known dough weight (20-ounce dough ball) you will find the weight of flour in that specific dough weight. In this case 20-ounces divided by 1.64 = 12.19512-ounces of flour in 20-ounces of Norma's dough.

Let me know if you need any further help.

Dough Clinic / Re: Frozen Dough Balls

There are two options.

1) Use your regular pizza dough, roll it out into a flat disk about 8" in diameter (adjust the diameter to give you the size calzone you want). Brush the edges lightly with water, add filling of ricotta cheese, mozzarella cheese or your favorite cheese blend, add desired vegetable/fruit filling along with pre-cooked meat if desired. Fold in half taking care to line up the edges, tightly crimp the edges together, transfer to a baking sheet, using a sharp knife or scissors cut a few steam vents into the top, brush with egg wash or cream/whole milk/melted butter and sprinkle with shredded parmesan cheese, bake at 450F until golden brown, brush or spray with garlic butter to which you have added a small amount of dried basil/oregano, set aside to cool for a minute or so before serving. This is one of our all time favorites.

2) Make a "special" calzone dough. Starting with your regular pizza dough formula, add unsalted butter or Butter Flavored Crisco to bring the total fat content up to 5%, add 5% whole egg (be sure to reduce the water content by 75% of the weight of whole egg added). Prepare the dough by your normal manner and follow the steps above for forming, filling, sealing and baking the calzones. This second method makes a richer, more pastry like dough.

Other Types / Re: How to make stromboli/calzone?

For about a 1/2-inch thickness I'm guessing that the dough loading per square inch will be around 0.12389-ounces per square inch. So a 9" round pizza would require

7.88-ounces of dough (call it 8-ounces) and a 10" round pizza would require 9.72-ounces of dough (call it 9.75-ounces). This should get you pretty close to where you want to be.

American Style / Re: Pizza hut regular pizza dough not pan pizza reciepe.

As you said you were not making the deep-dish pizza we can concentrate on the thin crust which used to be more of a cracker type crust but is now less of a cracker type crust and more of a thin crispy type crust. You will want to use the skin right out of the cooler, just be sure to dock it. If you're baking on a "perforated" disk it should be dark colored or well seasoned for best baking results, or if you are baking on a pizza screen aka wire screen it must be seasoned prior to use or it will weld itself to the dough during baking making separation all but impossible plus the bottom bake will leave something to be desired.

American Style / Re: Pizza hut regular pizza dough not pan pizza reciepe.

I'll toss my hat in the ring. The only real way to even get close to where you want to be is to make a pizza and then ask yourself how is this different from the P.H. pizza I'm trying to reverse engineer? Make the changes you think are appropriate and test again, in time you should be able to get something similar. Here is a starting dough formula, once you have evaluated the finished pizza let us know what changes you feel need to be made and we will try to help you achieve those characteristics.

Flour: 12% protein content (strong bread type flour) 100%

Salt: 2%

Sugar: 2%

Oil: 3%

IDY: 0.4% or ADY: 0.6% or Fresh/compressed yeast: 1.25%

Water: 56%

Mix; scale; ball; allow to rest at room temperature 60-minutes or until the dough can be easily formed into a skin; Place skin in the cooler and hold for at least 3-hours, remove from the cooler and use to make your pizzas. Note: if the pizza will be a pan style pizza, fit the dough to a well oiled pan, allow to rest for 60-minutes, re-fit the dough to the pan; allow the dough to rise in the pan for 60-minutes; place in the cooler for approximately 2-hours; dress and bake.

American Style / Re: Pizza hut regular pizza dough not pan pizza reciepe.

Kreskin;

The Crisco won't work in the same manner as fat flakes but you can come close by making your own fat flakes. Use unsalted butter or margarine (not the soft spread type margarine), place it in the freezer for a few hours (over night will do) you just want it to be thoroughly frozen. using a knife or similar tool carve or chop the butter/margarine into flakes (like soap flakes) and immediately place back into the freezer once you have the amount needed. When you're about 4-minutes from the completion of mixing add the frozen fat flakes. At the end of the mixing time they should be uniformly incorporated into the dough (like chocolate chips in a chocolate chip cookie dough). Immediately scale into desired weight pieces, form into balls, and let rest at room temperature until you can open into pizza skins. If you want to research a similar dough making process look at the "Blitz" method for making pastry dough, it's very similar.

Cracker Style / Re: Blisters

Most operators of pizzerias orient the bottom of the dough ball so it becomes the

top of the dough skin. In cases where the bottom of the dough box is oiled it doesn't seem to make any difference between the top or bottom of the dough ball. I personally open my dough balls by either partially sheeting the dough to about 3-inches/75mm less than full diameter and then finish opening to full diameter by table stretching and a toss or two to remove excess dusting flour, or if I'm doing it at home I might use a rolling/pie pin to accomplish the partial opening, or I also open the dough ball completely into a skin by table stretching.

Dough Clinic / Re: Whats the pizza's top and bottom when its a ball and is that a rule?

Craig;

Yes, 15% for those fat flakes, sounds crazy but that's what is typically used.

Kreskin;

The dense structure is due to the sheeting process, the aroma that you're picking up is characteristic of the high yeast level and no fermentation. I'm not sure about the gray color that you are referring to but if it is the entire skin that is gray the high fat along with an unbleached flour will give it that appearance, but if you are seeing spots of gray on the dough/crust it is most likely areas of incomplete bake if the skins are par-baked (incomplete at the time of par-baking) which is a fairly common problem with some par-baked crusts, many times those areas of incomplete bake/collapse are mistaken for oil spots since they look a lot like oil spots on the crust.

Cracker Style / Re: Blisters

I agree that the crust looks like it might have been made with a high oil/fat content but because the ingredient deck shows both oil and shortening I'm guessing that the shortening might be in the form of fat flakes which would typically be used at about 15% of the total dough weight. The shape and the edge of the crust shown in the photograph highly suggest that it was made using sheet and die cut equipment, this would mean that the dough absorption was most likely between 50 and 55% (probably closer to 50%). Yeast levels for commercial crusts are normally on the high side for flavor (what little there is of it), so I would put the yeast level at 2% IDY. Salt will come in at around 2%. Since ingredients MUST be listed in descending order with the sugar coming after the salt it must be used at the same or lower level than the salt so I'd use 1.5% for the sugar. For oil, use 2%. Mix the dough with a finished dough temperature of 75F (typical for sheet and die cut production lines), take the dough directly to a sheeter and sheet to 3/16-inch thickness, cut to diameter, give the dough about a 10-minute rest period before baking (400F for about 3-minutes), invert for cooling.

You might want to experiment with varying fermentation/rest times between mixing and sheeting (0, 15, 30, 45 and 60-minutes) to see if you like any one over the other.

Cracker Style / Re: Blisters

From everything that has been said I'm guessing that we're dealing with a production lot of flour that has a different absorption from the other production lots that you've been using in the past. It is common for flour to change in absorption by 2 to 3% just as a characteristic of the flour alone, then add to that external influencing factors such as humidity and you can easily end up with a flour with a fairly wide absorption swing. In cases like this it is best to mark the absorption for your bread and pizza on a piece of tape placed on the container so you can use the correct absorption value until the flour is depleted, then when you get a new bag of flour start out where you left off with the last bag of flour

absorption wise remember that it is easier to add water than it is to remove water from the dough, once you find the correct absorption for the now new flour post it on the container and you're good to go. When I taught the pizza class at AIB I would explain to my students that flour and hockey pucks were direct opposites. Flour is always different and changing while hockey pucks are always the same and consistent.

Dough Ingredients / Re: What affects hydration rates of flour?

To which P.H. crust are you referring to?

New Forum Members / Re: Chrunchy Pizza Hut Crust

Things that will influence flour absorption are the grist (mix of wheat varieties) that the flour is milled from, the quality of that wheat, the age and storage conditions of the wheat, physical characteristics of the wheat (some varieties do not demonstrate the same absorption with all other factors equal as other wheat varieties, then add to that particle size of the wheat and to a lesser extent (U.S. flour only) the damaged starch content, and especially true for bag flour users how long the flour has been stored and the conditions of storage since the flour was milled and bagged. In large scale production these differences are measured by Farinograph and reported to the end used in a Farinograph report so the dough absorption can be adjusted accordingly while for small scale and home bakers the margin of error in our dough formulas is typically greater than the absorption variation so it can be hard to detect the difference, also with smaller scale production we can handle the dough accordingly to its rheological/physical properties using more or less dusting flour, re-ball, adjusting processing times, etc. which cannot be done in large scale production situations. In short, there are differences in flour absorption which we almost sub-consciously make adjustments for, but once in a while those differences are of a sufficiently great magnitude that we will see the differences for whatever reason. It is perfectly normal to make adjustments in dough absorption. I might also add that specialty flours such as "organic" seem to demonstrate greater differences in absorption than the non-organic flour due to the rather limited supply of wheat and wheat varieties to blend into the grist to blend out undesirable characteristics in the wheat being milled.

Flour is a lot more variable than most people think and when you consider what the flour miller gets in the form of wheat to mill, it's a wonder that they are able to do such a great job as they do in giving us a product as consistent as it is.

Dough Ingredients / Re: What affects hydration rates of flour?

Are we now discussing commissary dressed skins being delivered to the stores? Please feel free to call me at 785-537-1037 so that we may discuss this in greater detail. Just e-mail me with a time and day that you would like to talk so I can be here at my desk to receive your call, or you can call me at any time taking a chance to catch me at my desk. I'm an ex Chicago boy (south sider/175th street).

Dough Clinic / Re: Staging Topped pizzas for service

Absolutely right, there has been a lot of discussion on that holding method too.

Shop Talk / Re: Dough Trays

"Holding at room temperature" is a pretty broad statement. Assuming we have a fully topped/dressed pizza skin that is at refrigerated temperature you should be able to allow those dressed skins to remain at room temperature for about an hour before it warms up sufficiently for the dough to begin proofing/raising, thus changing the character of the finished pizza. That said, before going any further

down that path, I would check with the local health/food safety department to get their views on allowing the dressed skins to be exposed to "room temperature" for any period of time.

Dough Clinic / Re: Staging Topped pizzas for service

I've used the dough boxes from WRH <www.wrh.net> for many years and they're very popular in the pizza industry too. I've never had any problems or issues with them. Just be sure to buy a couple of their scrapers for cleaning the boxes, they're radised to fit the inside corners of the box making it a snap to clean them.

Shop Talk / Re: Dough Trays

Ulli;

The temperature that you refer to is the pan temperature. When you have dough in the pan it will not get to much over 400F. Just don't put any empty pans into the oven.

I've got some old tin plated cake pans from the 1950's that I use all the time for making 6" individual deep-dish pizzas (bake temp.525F) I don't remember the temperature that tin melts at but I think it is around 430F and to this date I've not damaged the pans so I know they have never gotten to that temperature.

Try one, see if it works for you.

Stones/tiles/steel, Pans & Accessories / Re: where to get deep dish pizza pans in Germany or Austria?

I'm not sure about the perforated pan idea. In 3 to 4-hours you might find that the dough is trying to flow into the perforations making the dough and crust all but impossible to separate. The one exception to this might be the Lloyd Pans Hex Disk. The perforations in these pans are smaller than on other pans which might restrict the dough from flowing into the openings. Another possibility is to place the dough onto a piece of baker's silicone paper, then you could use any pan as the paper will inhibit any dough flow into the pan openings. Lastly, an old trick that I used many years ago is to flip the formed dough skin over on the bench or on a wood peel, then use a heat gun or hair dryer to form a dry skin over the bottom of the skin, flip the skin over into your perforated pan and you have a decent chance that the dough may not flow into the openings.

Dough Clinic / Re: Staging Topped pizzas for service

A lot of it might be where the dough was made (geographic location). For example where you had the lesson, it was warm (not hot) and humid this would not be conducive to the formation of a crust on the dough balls especially in view of the fact that they were covered by a damp cloth, but IF you are now trying to make the dough in an area with a lower relative humidity (drier climate or higher altitude) that would significantly increase the rate of evaporation from the dough resulting in the development of a dry crust. If the relative humidity on the day that you made the dough was less than 85% you would have to expect potentially significant evaporative loss from the dough. One possible way to address the problem is to create a micro-climate for the dough balls, this is done by preparing the dough balls just as you have done BUT instead of placing them out in the room, place a wet towel under the container which the dough balls are on, then cover the dough balls and the towel with (I use a large dish pan) but anything (large Walmart plastic storage tub with a cover) will work. It doesn't need to be air tight as you just want to control the environment under the container (think sauna). The wet towel will be a source of moisture to put and keep humidity in the air preventing the crust formation.

[**Newbie Topics / Re: More crust than I bargained for**](#)

G.R. said it perfectly. While a typical N.Y. style pizza might be baked at 700 to 800F or more, many pizzerias don't have those kinds of ovens so they do the best they can with what they have in their store. Since many stores use deck ovens I'm guessing that your pizza was probably baked in a deck oven at a lower temperature than what might be considered correct for a N.Y. pizza, hence the baking time was most likely longer resulting in a crispier edge and with an overall darker finished color. Then too, regardless of the type of pizza being made many pizzerias add sugar to their dough as a matter of habit rather than necessity and like G.R. said, the sugar will contribute to browning during baking. You also mentioned that the pizza wasn't round, some pizzerias make what is referred to as a "free form" crust, this is where the dough is opened into a rough round, or oval shape with no attention paid to achieving a round shape, the appeal of this type of crust is that it looks different from other pizzas.

[**Dough Clinic / Re: Crunchy / tough crust**](#)

It sounds as if the crust in question might be a New York style crust (nice raised edge, crispy edge and chewy center section), even the char on the edge fits in. There is quite a bit of discussion here on making New York style pizza crust so it should be easy to get some recipes/formulas to work with.

[**Dough Clinic / Re: Crunchy / tough crust**](#)

Sure, use cake pans. Readily available at a very reasonable cost. If they are not dark in color you will need to season the pans but other than that they work just fine.

[**Stones/tiles/steel, Pans & Accessories / Re: where to get deep dish pizza pans in Germany or Austria?**](#)

The soft varieties of wheat are used primarily in making cake and pastry flours. The protein is both too low for making decent pizza and doesn't exhibit the necessary strength characteristics for making pizza, this is why the hard wheat varieties (hard red spring, hard red winter and hard white) are the go to varieties for making the stronger flours used in making pizza, bread, rolls, etc.

[**Dough Ingredients / Re: 00 Flour - I'm confused**](#)

Corn meal and corn flour are essentially the same with one significant difference, corn flour is just as its name implies, a very fine, floury material while corn meal is particulate (gritty) and available in different grinds from fine to coarse. When use in a Chicago type dough formula a fine or medium grind corn meal is preferred, but be aware that it is slower to hydrate than your regular flour so you will need to experiment with the dough absorption (higher than normal) to find what works best for you. On average, 10 to 15% corn meal is used and total dough absorption is around 62 to 64%. The dough might feel wet at first but it will dry up after about 30-minutes rest time.

[**Chicago Style / Re: Recipe reads "cornmeal" - does that mean the flour?**](#)

Craig;

Yes there is, but it is something that I've never had to do. The person that I would suggest that you contact is Tim Huff, Manager, Flour Technical Services Quality and Regulatory Operations at General Mills. You can contact Tim at <huffx00@mail.genmills.com> or 1-800-426-2760. Please tell Tim that you are calling him at my direction. You might recognize Tim from Pizza Expo as he runs

the Pizza Boot Camp at P.E. each year.

Dough Clinic / Re: Calculation to predict the effect of diastatic malt on the falling number?

Some of the reasons why pizzerias add water to their sauce.

- 1) To extend the sauce for greater economy of the sauce. I truly believe this is the main reason why it's done. Several years ago when there was a significant spike in tomato products across the board, we saw an awful lot of operators adding more water to their sauce to extend it for greater economy. In my opinion, bad idea.
- 2) For ease of application, some operators like a sauce that they can spread easily with something like a Spoodle while others just plop a ladle of sauce onto the top of the dough skin and tip it from side to side allowing the sauce to flow out and cover the skin.
- 3) Some operators put garlic and/or onion into their sauce which results in the sauce gelling and making it so thick that they must add a significant amount of water to the sauce just to be able to spread it. In this case all they have to do is to pre-boil the onion/garlic before adding it to the sauce which prevents the sauce from gelling. You would be surprised at how few operators know about this little known fact.
- 4) I don't know why we add water to our sauce, we have always added water to our sauce, doesn't everybody???
- 5) Some operators use a highly concentrated tomato product to which they add water to achieve the desired consistency. Highly concentrated tomato products typically are lacking in flavor or have an "off" flavor due to the application of heat during the concentrating process. If you have to do this your sauce may not be all that great to start with, so why worry about a little water?
- 6) Commercial pizza manufacturers essentially all use some type of concentrated tomato product in their sauce, the reason why is 100% economics, it is cheaper to ship 2,000-pounds of concentrated tomato product and add water to it making almost 4,000-pounds of sauce at roughly 10% solids content than it is to ship 4,000-pounds of tomato product at 10% solids content which will not require the addition of water.

Sauce Ingredients / Re: Adding water to sauce mix

Very good ovens. I've not had any problems while working with them except for a couple of minor set-up problems which were quickly corrected.

Pizza Ovens / Re: Il Fornino Ovens

Absolutely!

36 to 42F is the ideal range, but your local health department has already told you that. If the temperature is at 32F the dough may freeze and that is not good for the dough/yeast and if it is much higher than that it will be difficult to control the rate of fermentation while the dough is in the cooler.

Dough Clinic / Re: How long leave in fridge

A fully baked crust is free from mold when it exits the oven as the heat of baking destroys any mold that might be present. Once the crust is out of the oven it may be infected with mold spores due to contact with unclean (non-sanitized) surfaces or just exposure to the mold spores in the air however on average it will take approximately 4-days for any mold to colonize into what we commonly recognize as "mold". I think it would be safe to say it is not mold, especially two hours after baking. It could be some carbonized material from your baking platform or possibly a post baking transfer of material onto the crust.

Dough Clinic / Re: Moldy base?

Sara;

Here is a dough formula that you can begin working with.

Flour: 100% (All Trumps)

Water: 62%

Yeast: IDY/.187% (24 to 48-hours cold ferment)

Salt: 2%

Olive oil: 2%

Dough Ingredients / Re: Whole wheat

If you Really Have To Repaint It be sure to use a paint that is approved for such applications. Your local health department can provide you with direction in this regard.

Prep Equipment / Re: Overhauling a Hobart Mixer

Just be sure to use a well seasoned or dark colored pan for the best bake, use oil or shortening in the pan, oil will give you a crispier crust. Allow the dough to rise in the pan to about double thickness or perhaps a little more.

If you can give us your dough formula and procedure we might be able to provide more specific suggestions.

Dough Ingredients / Re: Whole wheat

That works out to 13.32% protein for the Robin Hood and 9.99 for the store brand. That's what I mean when I say that it is all over the board. Since most bread flours come in at between 11.8 and 12.4% protein content that seems to be splitting the difference so it should work, the only real way to see if it will work for YOU is to try it, I think the odds are in your favor for it working.

Dough Clinic / Re: Changing type flour

All purpose flour can be all over the board protein content wise. What is the protein content of the A.P. flour you're using? It will usually give that information as grams protein per 100-grams flour on the bag, or a quick trip to the manufacturer's web site can also give you the information too.

Dough Clinic / Re: Changing type flour

Thank you Craig.

I appreciate your digging that out.

Dough Ingredients / Re: Whole wheat

The trick to making a GREAT whole-wheat or multi-grain pizza is to use a soaker to achieve full hydration of the whole-wheat flour or multi-grain mix.

I've covered this in depth in my column in PMQ Magazine (In Lehmann's Terms) and in the Think Tank too and I'm sure a number of times here also. Peter, can you reference my response to the use of a soaker? Let me know if it cannot be found and I'll outline it for everyone. Keep in mind as a commercial pizzeria you might want to follow the guidelines which call for "whole-wheat to contain nothing but whole-wheat flour (no white flour at all), "wheat" crust can be made with only a portion of the flour as whole-wheat flour, and multi-grain can be made with a blend of different grains blended with white flour.

Dough Ingredients / Re: Whole wheat

New York:

Add to that the fact that you can occasionally snag used aluminum sheet pans for just a couple dollars each, and I can't come up with a good reason to opt for plastic over aluminum if buying for the first time. I'm with you man! But do use plastic scrapers (those made by <WRH.net> are GREAT) for either the dough boxes or aluminum sheet pans which can be gouged by using metal scrapers to clean them.

Dough Clinic / Re: Pizza Box vs Sheet Pans

Another option for par-baking the crust is to apply about half of the sauce just before you par-bake, that will normally do a lot to control the bubbling, and what it doesn't control you should be able to handle easily using a BBQ fork as a bubble popper. After par-baking you can apply the remainder of the sauce and continue building your pizza in the normal manner.

General Pizza Making / Re: Cheese "breaking"?

The only problem with leaving them in the cooler unwrapped for that long is the drying out of the skins. That doesn't necessarily have to be a bad thing. If you like the finished crust.....go for it!

Wrapping them in some way, like slipping a bag over a wire tree rack will reduce the possibility of the dough skins of drying out. Just don't wrap them right away, leave them uncovered in the cooler for an hour or so to cool uniformly, then cover. I think double wrapping is over kill though. For a thin crust application I would think that a 4 to 5-day shelf life in the cooler would be a reasonable expectation if your dough has been effectively managed.

Dough Clinic / Re: How long leave in fridge

Through biochemical you can indeed achieve full gluten development. No, a 14% protein content really isn't needed to make pizza. The only thing that the higher protein level provides is a level of tolerance to over fermentation or greater tolerance to the acid content of a sourdough starter, or should I say the use of too much starter.

New York Style / Re: All Trumps gluten development at home can't be done?

Normally an hour of rest after re-ball the second time is not sufficient to allow the dough to fully relax for opening. Every dough seems to have a sweet spot for opening if you re-ball, so you might want to allow the re-balled dough piece to set out until the dough is sufficiently relaxed for easy opening, then make a note of that time and that should be close to the "sweet spot" for your specific dough. As for re-ball a "shaggy" dough, it is not recommended. Shaggy doughs are best made by placing the dough into a suitable container (round bowl or plastic bag) and allowing it to hydrate and ferment undisturbed, it is then turned out of the container onto a dusted counter top and rolled out to size using a rolling pin or pie pin. I've never been able to open a shaggy dough by hand as it just continually tears.

When I hear that a dough is too soft or extensible for ease of handling I normally think of too much fermentation or too much sourdough starter as both car really weaken the dough.

Dough Clinic / Re: Minimum time for reballing?

Clark:

When the dough is properly managed:

A finished dough temperature in the 80 to 85F range will give you up to 3-days refrigerated shelf life, with the dough ready to use after 24-hours.

A finished dough temperature in the 70 to 75F range will give you a dough with up

to 4-days refrigerated shelf life with the dough ready to use after 36-hours. A finished dough temperature in the 60 to 65F range will give you a dough with up to 6-days refrigerated shelf life with the dough ready to use after 48-hours however this dough can be used up to day 8 but the performance may be somewhat inconsistent.

In each of these cases the idea is to strive to hit the lower end of the target range thus allowing you to make water temperature adjustments before exceeding the top end of the temperature range.

It is REALLY difficult to produce pizza dough that is much lower than 60F as the dough just becomes too stiff/tight to mix.

Dough Clinic / Re: Hot kitchen, dough is too sticky, and rising too fast - help!

Nope, not well developed at all, when you have a well developed gluten film such as a baker might want to have when making hamburger buns, the film will be so thin and clear that you can actually read through it, and it will be so extensible that you really don't need to pull on the dough at all, just let gravity do the work for you and you should be looking at a gluten film that looks like an over blown balloon.

There is a point in dough mixing where the gluten comes together and exhibits maximum resistance to extension (stretch) if you look at a Farinogram this will be shown as the peak mixing time. It is not the point of maximum gluten development but rather just a reference point which is used to help sort out differences in mixing properties between different flour types.

New York Style / Re: All Trumps gluten delopment at home can't be done?

If the dough balls are opened into skins (for thin crust pizza) and placed on screens then stored in a wire tree rack in the cooler, uncovered for 30-minutes, then a food safe plastic bag slipped over the rack(s) the pre-opened skins can be kept in the cooler for up to 48-hours. If we are talking about deep-dish pizza where the dough has been proofed in the pan and then stored in the cooler it is not recommended that the pans of dough be stored for more than 1-day.

Dough Clinic / Re: How long leave in fridge

I think you are over thinking your dough mixing. Just put the water in the mixing bowl first, than add any salt / sugar, then the flour and the IDY, begin mixing at low speed just until you don't see any dry flour in the bowl, pour in the oil and mix for about 1-more minute in low speed, then increase the mixing speed if you can and mix the dough just until it begins to take on a smooth, satiny appearance....no need to mix it anymore than that. With but a few exceptions (commercial application and emergency doughs) pizza dough is best when under mixed, all you really need is a homogeneous dough but mixing it as described makes it easier to handle. Then let biochemical gluten development do all the work for you. When I make my pizzas at home I always mix the dough using nothing but a large spoon, after a few minutes with the spoon the "dough" looks more like cottage cheese than what we think of as a dough, I turn it out of the bowl, oil the bowl, roll the dough ball a couple of times in a little dusting flour and roughly shape it into what one might, in abstract, call a dough ball, then place the dough ball back into the bowl, cover with a piece of plastic, and let nature run its course for the next several hours, then turn the dough out of the bowl, portion and form into better shaped balls, oil each dough ball and place into a plastic bread bag to cold ferment for 24 to 48-hours. To open the dough balls, remove from the fridge and allow to temper AT room temperature for about 2-3-hours, then turn out of the bag onto a flour dusted counter top and begin opening each sough ball into a pizza skin. You can add your own twists to the

procedure, but this is my basic dough making procedure.

New York Style / Re: All Trumps gluten development at home can't be done?

Most flour after milling is very close to 14% moisture content, in a very humid environment it will certainly pick up some additional moisture (typically only a couple of percent) while in a dry environment it will dry down to a maximum of about 10.5% moisture content, after that you've got to add some real dry heat to the flour to get it to dry out anymore. During the winter months when the air is very dry and the bags are stored indoors in a non-humidified room the outer bags which are not covered by the stretch wrap will always dry out more than the bags in the center of the pallet or bale. With a single 50# bag of flour (directly from the mill) you can expect to see some bags as much as 8-ounces under weight and a hand full overweight too but if you weigh twenty bags the weight will average out at 50# per bag. This is due to the way the bags are weighed, the bags are first weighed on a fill scale (expect some variation) but then when a pallet is completed the entire pallet is weighed and the target weight for the palleted flour cannot be outside of the target weight range. I would assume that the same might be true of flour packaged in individual small bags as well as in bales. One of the last projects I was working on before my retirement from AIB International was a system that would provide real time, moisture content of the flour and automatically adjust the amount of flour delivered to the mixer to give a fixed weight of flour at 13% moisture content (typical for flour delivered in tank trucks and off loaded into a flour silo). This is why we always advise that the flour be weighed, it eliminates just one more variable.

Neapolitan Style / Re: Caputo 00 - Exposure to Humidity? What does a bag weigh?

IF the sprouted spelt flour hasn't been heat treated to inactivate the enzyme activity the answer is yes, it would act in a similar manner. I'm guessing that it has been inactivated to allow its use at higher levels (different application).

You might need to check with the manufacturer to see if all enzymatic activity has been inactivated or not. If the answer is no, then see if you can find out what the Lintner value (diastatic activity) is. If it is enzyme active I would begin testing in 5% increments to see what the upper limit to its use is.

Dough Clinic / Re: Sprouted Spelt Flour Similar to Diastatic Malt?

You have to understand where Tim Huff is coming from, while I don't know the full context of what he said, or who he was directing his statement to, what he said was, in essence, correct, but as you also pointed out it has little or no relevance to home pizza makers. It's a case where he was technically right but from a practical stand point....who cares since we, as home pizza makers or even pizzeria operators, never strive to mechanically achieve full gluten development anyways.

New York Style / Re: All Trumps gluten development at home can't be done?

When making deep-dish pan pizzas I only make them in 14" size.

Here is a trick that I learned a long time ago when making deep-dish pizzas, grease the sides of the pan with shortening like Crisco and use oil in the bottom of the pan. The oil will give the pizza a crispier bottom crust while the shortening on the sides of the pan will make fitting the dough into the pan a lot easier.

Stones/tiles/steel, Pans & Accessories / Re: What exactly is a pizza pan separator and why would I need one?

When the question of refrigerated dough life was raised by my students I used to

make two marks on the board behind me about a foot apart, I would then use a pencil to represent 4-days of shelf life, you can place the pencil anywhere you want between the two lines but you cannot get the pencil to span the entire 12-inches representing about 8-days of refrigerated shelf life. You can manage the dough for use on days one through four using a slightly higher finished dough temperature but the dough will not be very user friendly after day four. Then again you can lower the finished dough temperature so the dough is not ready for use until day five but it will remain good to use through day eight, but again there is a price to be paid as the dough will not be at its optimum before day five. It's all in the finished dough temperature.

Dough Clinic / Re: Hot kitchen, dough is too sticky, and rising too fast - help!

The 1" deep pans are good for making a moderately thick crust pizza (about 1/2" thick) or if you keep the dough skin thin enough you can also make a thin crust pizza in it. For the money, I'd opt for a 1.5 or 2" deep pan as it will allow for baking pizzas with just about any desired crust thickness, from very thin to an inch thick or more. Thin crust pizzas baked in a pan are not necessarily the best pizzas on the block but they're not especially bad either.

Normally when one buys pans of that type the intent is to make deep-dish pizzas. It all depends upon what you want to make.

Stones/tiles/steel, Pans & Accessories / Re: What exactly is a pizza pan separator and why would I need one?

I've written a number of times about using a sheeter to open the dough to about 2" less than full diameter and then finish opening by hand. The procedure works great. We developed it a number of years ago as a means to train those individuals who are "toss challenged". If you will contact me at

<thedoughdoctor@hotmail.com> I'll be glad to send you a video showing the process being used in a local pizzeria. With this process training people in hand tossing the dough is not the issue, finding good manager material is now the biggest challenge.

Shop Talk / Re: Making a fool proof pizza shop. How do I find good help?

Fermentation creates flavor and aroma in the finished crust, it is also responsible to some extent for development of crispiness in the finished crust too. Try it, see what your customers think about it.

Tom Lehmann/The Dough Doctor

Dough Clinic / Re: How long leave in fridge

Jackie;

What you have described is what is referred to as "clean-up". Sufficient gluten has been developed to provide the elasticity needed for the dough to pull off of the sides of the mixing bowl and begin to cling to the dough hook. Full gluten development is achieved just before the dough begins to let down a stage just before break down. We seldom mix doughs to full gluten development as at that stage of mixing the dough is usually too extensible to handle in any type of processing. The one type of product that is usually made from a highly hydrated dough with close to full gluten development is chibatta (sp?). These doughs are so soft that they essentially cross the line to becoming a batter.

New York Style / Re: All Trumps gluten development at home can't be done?

It all depends upon what the finished dough temperature is. If you are using a cold

fermentation process with effective dough management and the dough is cold (60 to 70F) you might slow the fermentation process enough to see a difference in the way the dough handles after 24-hours, but it is unlikely that you would see any difference from 48-hours on out. If the dough is too warm (anything at 90F or more) you will find that the dough will be difficult to control in the cooler and blown dough is a possibility, you will also see that the finished dough is going to be softer and more extensible than probably desired, this is due to the degrading effect of the heat on the flour proteins as well as excessive mellowing of the gluten due to excessive acid formation and accelerated effect of the enzymes present in the yeast on the flour proteins.

Dough Clinic / Re: Hot kitchen, dough is too sticky, and rising too fast - help!

Think of it as a lid for the pan. Sure, if you want you can just do as I do and cut open a Walmart bag and lay it over the top of the pan to keep the dough from drying out while it's proofing (pan pizzas are best when allowed to proof/rise in the pan for a period of time (generally 45 to 75-minutes) prior to dressing and baking.

Stones/tiles/steel, Pans & Accessories / Re: What exactly is a pizza pan separator and why would I need one?

Jackie:

You answered your question when you said "combined with biochemical gluten development) aka fermentation. High gluten/protein flour will almost always achieve a better and finer gluten film than most lower protein flours. When you increase the absorption of a dough it receives less mechanical mixing action from the dough hook so it indeed does not heat up as much or as fast due to bowl friction during mixing, BUT because of the diminished action of the hook in the dough it can easily take 30-minutes or quite frequently more to get the gluten to develop to a point where it forms a ball in the mixer, and when it does finally pull free from the bowl you will have a composite dough made of more developed gluten (from there the hook was in contact with the dough) and that which has been sitting on and clinging to the bottom of the bowl which has very minimal gluten development, at this point (we refer to this as "clean-up") the dough will begin to act in a more normal manner in the bowl and begin slapping the sides of the bowl, this is where the dough now begins to heat up again due to heat of friction generated during mixing so we are again back to square one. While air temperature (room temperature) has an impact upon the finished temperature (it is even included in the calculation for desired water temperature/ 3 X desired dough temperature minus room temperature, flour temperature and friction factor) it is not the main driving factor in achieving the desired finished dough temperature (air is pretty poor at such things) instead it is the flour temperature and the water temperature that have the greatest impact, and of those two, the water has the greatest impact upon dough temperature.

New York Style / Re: All Trumps gluten development at home can't be done?

Well, Tim is partially correct, with most mixers available to home bakers you really cannot fully develop all of protein in All Trumps flour into "gluten", however, it can be developed very efficiently through biochemical gluten development, it just takes longer. When I was working at AIB we did literally hundreds of mixing series each year where we tried to mix the dough to the point where we could break down the gluten. A few interesting observations:

- 1) As you continue to mix some of those very strong flours the dough heats up to the point where the heat is breaking down the protein rather than the mixing

energy input. If you can keep the dough cold during the long mixing time by injecting carbon dioxide into the dough it is not uncommon to see mixing times of over 30-minutes.

2) As you continue to develop the gluten you also begin to expose it to increasingly greater amounts of oxygen (in the air) which oxidizes the gluten as fast as it is breaking down (much like adding ascorbic acid, azodicarbonamide, or potassium bromate to the dough) this action in itself results in what used to be an unexplained extension of mixing time as the dough begins to break down. This concept was commercialized back in the early 70's by Continental Baking Company (Rye New York) in what they referred to as the "fatigue" dough method. By this dough mixing method the dough was mixed at high speed in an enclosed mixing chamber (horizontal mixer with a capacity of 2,500-pounds of dough). By keeping the mixer closed the carbon dioxide released from the dough created a somewhat anaerobic environment in the mixer which prevented oxidation of the gluten bonds during mixing thus enabling the development of an over mixed dough condition. The over mixed dough has a capacity to carry more water than other doughs so it was an economical advantage to use this mixing method. Since the over mixed dough was too soft and way too sticky to be processed in their bread making equipment they found that if they opened the mixer door (bowl) slightly the carbon dioxide would be expelled and replaced with air, with the mixer now tumbling the dough at low speed the gluten bonds were strengthened and the dough became firmer and less sticky so it could now be processed normally through their equipment. The Chorleywood bread making process employs this same principal but here they mix the dough under a vacuum to exclude air/oxygen from the mixing chamber. If you have ever mixed a dough in a VCM you know that it really isn't hard to over mix a dough with all of the earmarking characteristics (soft, sticky and weak dough with extensibility that just won't quit) we used to refer to it as "elephant snot"

New York Style / Re: All Trumps gluten development at home can't be done?

Pan separators are flat disks of aluminum which are placed over each individual pan to act as a cover and to allow the pans to be stacked one on top of another. The correct size pan separator to use is 2-inches larger in diameter than the outside top diameter of your pan(s). Pan separators are not needed if your pans are of the self-stacking design. Also, make sure your pans have a dark colored anodized finish as opposed to a "bright" finish.

Stones/tiles/steel, Pans & Accessories / Re: What exactly is a pizza pan separator and why would I need one?

The tightness/firmness of the dough ball is what I'm referencing. The tighter a dough ball is made the longer the rest period required before it can be opened into a pizza skin. One of the more common problems that I see is where the dough is over worked when it is formed into a dough ball which can lead to difficulties in opening the dough ball up into a skin later on.

Dough Clinic / Re: Hard to close dough ball after bulk CF?

Actually, it is not all that important to pinch the bottom seams, instead, it is much more important that the dough balls all be formed to roughly the same tightness, you can then just place the dough ball back into the container and the weight of the dough ball will do the rest for you.

Dough Clinic / Re: Hard to close dough ball after bulk CF?

Acott:

The 65% absorption might be too high for YOUR flour. Remember that dough absorption values are generally accurate only for the flour or a very similar flour to the type used in making the dough for which the absorption value is cited. There can be/are huge differences in flour across the board which will impact the amount of water (absorption) a dough made from that flour will carry before handling or performance characteristics are compromised. If the dough is too soft and/or sticky with 65% absorption, by all means experiment with lower absorption values, in this case I would drop it back to 60% to see if that improves the dough handling properties and bench mark from there for further adjustments to the dough absorption.

In addition to the above, the dough formulation as well as the dough management procedure used can also impact how the dough responds to the amount of water added. If you can share your dough formulation and how you manage the dough from mixing to the time you open the dough into pizza skins it would help in determining what the problem might be.

Newbie Topics / Re: Thick dough

If you will Google "no carb pizza crust recipe" you will be rewarded with a plethora of different low carb recipes as well as your requested cauliflower recipe.

Dough Clinic / Re: Carbs stink

What I see in the pic is a crust that was made from too much dough for a thin crust presentation. The crumb structure looks more like what I expect to see in a thick crust/deep-dish type of pizza.

Newbie Topics / Re: Thick dough

It looks like you have too much dough with just two pizzas from your "recipe", I'd suggest going with three pieces and continue opening each piece up to 12-inches.

Newbie Topics / Re: Thick dough

If the dough feels like it can be easily opened into a pizza skin go ahead and open one of them and make it into a pizza. From your description it sounds like the dough will make a great pizza.

Dough Clinic / Re: 4day Cold Rise Question

Riccardo;

That is impossible to say as we don't have any idea of what the micro-flora is, additionally, if you begin holding at a different temperature you might upset the balance of micro-flora presently in the culture and that could have a significant impact upon how it functions. The best advice I can offer you is to start another sourdough by using a portion of your existing culture and store it at the new (higher) temperature to see how it impacts the culture both performance and flavor wise. There is a good chance that nothing will happen but you don't want to risk losing what you already have either.

Dough Clinic / Re: Temperature for Reactivating a Culture

Try making a dough with a small amount of yeast and NO sourdough culture to see if the dough performs any better. If it does you will need to adjust the amount of starter used downward.

Dough Ingredients / Re: UK Pizza Flour.

That bread flour certainly looks like something to seriously consider using. Normally bread type flours run in the 11.5 to 12.5% protein content range. Can you

get the average protein content of this flour from their website or do they have a nutritional label on the bag?

Dough Ingredients / Re: UK Pizza Flour.

Derek;

The key is "finished dough temperature", if the dough is too hot (in the 90F range it can result in a dough consistency more like wallpaper paste than a pizza dough. Also, dough absorption is directly keyed into the absorption properties of the flour that you are using (this is greatly influenced by the protein content but there are also a number of other factors). If it were me, the first thing that I would do is to get my dough temperature into the low to mid 80's and then begin experimenting with the dough absorption to see what works best with my dough formulation, ingredients and shop conditions.

Dough Clinic / Re: Hot kitchen, dough is too sticky, and rising too fast - help!

Here is what your dough looks like in bakers percent:

Flour 100% Water 62.7%

Oil 1.63%

Salt 2.6%

Sugar 0.37%

Yeast 0.326% (this is the correct amount for IDY)

Here is a recommended ingredient staging sequence:

Put water (65F) in bowl, add salt and sugar

Add flour.

Mix about 2-minutes in low speed, and add the oil.

Continue mixing as you normally do until the dough just takes on a smooth appearance.

Take dough immediately to the bench for scaling and balling.

Place dough balls into plastic dough boxes and oil the top of the dough balls with a little salad oil.

Take to the cooler and cross-stack for 3-hours, then down-stack and kiss the dough good night.

Dough will keep for up to 72-hours in the cooler.

Dough will be best to use after 48-hours.

To use the dough, remove dough from cooler and allow to warm AT room temperature until the dough balls reach 55F, then begin pressing to shape the dough skins.

NOTE: In many cases dough that will be formed by pressing is easier to press and does not exhibit problems with shrinkage/memory if a reducing agent such as "dead yeast" RS-190 or PZ-44 is included in the dough formulation.

Be sure to have the press temperature set at around 250F and use a 7-second dwell time.

One other thing, if you are not already doing so, consider changing over to a flour with 12% or less protein content as a high protein content flour isn't doing you any favors when it comes to press forming the dough skins.

Dough Clinic / Re: Hot kitchen, dough is too sticky, and rising too fast - help!

330-grams of dough for a 10-inch pizza calculates out to 330 divided by 75.8 (square inches in a 10-inch circle) = 4.35-grams of dough per square inch of surface

area. This extrapolates out to 491.9-grams (over a pound of dough) for a 12-inch diameter pizza. That would be considered to be a lot of dough for anything short of a deep-dish style of pizza. I normally look at something around 2.5-grams of dough per square inch for the type of pizza you are making. Try using 190-grams of dough for your 10-inch format to see if that brings you closer to where you want to be. Let us know if that helps any.

Dough Clinic / Re: Could you take a look at my dough/bake and give me some advices?

I'm always a big fan of doing the simple things first so I'd begin by reducing the weight of the dough ball. Remember that pizzas which are crispy on the outside and soft on the inside are best made in a very hot oven.

Dough Clinic / Re: Could you take a look at my dough/bake and give me some advices?

John;

A number of years ago I used to spend my weekends teaching bread and pizza making to local farm families and they were always totally amazed at how easy it was to make dough using biochemical gluten development as opposed to working the dough like the "village blacksmith". In these mini-classes I used to have everyone "mix" their doughs using a wooden spoon (can't over mix a dough using a wooden spoon), then turn it out of the bowl, lightly oil the bowl, turn the dough a couple of times in dusting flour to get some shape to it and place it back into the oiled bowl and covered it with a piece of plastic to ferment for a couple of hours (would have liked to go longer but we only had so much time). Then we would sit around and talk about how we will make the bread and pizza and finally prepare the pizza toppings then we would turn the dough out of the bowl and pin it out and roll it to make our bread loaves. After the dough was panned and set aside to proof we would begin working on the pizza dough by hand stretching it into a pizza skin, dressing it with their chosen toppings (sometimes they were just leftovers taken from the fridge) and baking them usually two at a time in the hosts oven. By the time we were finished eating pizza it was time to bake the bread, usually 6 to 8-loaves went into the oven at once, we baked them at 425F for about 25 to 30-minutes, depanned the baked loaves and set aside to cool on a wire cooling rack, the loaves were ready to use at dinner time which the rest of their families greatly appreciated. It was always a lot of fun and very rewarding to see those ladies taking so much pride in their new found baking skills.

General Pizza Making / Re: How does dough strength factor into extended cold fermentation

Bob;

Actually, if the end goal is to freeze the dough you are much better off freezing the dough as quickly after freezing as possible then managing the dough for fermentation after you slack it out (thaw it).

Dough Clinic / Re: Cold Proof to Freezer

John;

The type of gluten development that the dough is receiving prior to fermentation is very gentle and very slight, because of this I would speculate that the effects of biochemical gluten development would dominate over any pre-fermentation gluten development in this case. If you are using a mechanical mixer with a dough hook we typically mix the dough just until it begins to take on a smooth appearance. This is done only to improve the way the dough handles at the bench but due to

biochemical gluten development it really doesn't matter if the dough is mixed for 2 to 3-minutes or 8 to 10-minutes, BUT we have seen where if the dough is mixed to the point of developing a strong gluten film (as for bread production) even with the biochemical gluten development there are changes in the finished crust characteristics, namely the crumb structure begins to close up resulting in a finished crust with an internal cell structure somewhat more like that of bread than pizza, this is more than likely the result of over gluten development (mechanical gluten development + biochemical gluten development = too much total gluten development).

General Pizza Making / Re: How does dough strength factor into extended cold fermentation

I was recently at an Ace Hardware store near my son's home in Olathe, KS, and guess what I found hanging by their selection of BBQ tools? Yep, wood pizza peels (only 12"), but if you're looking for a 12" wood peel you might be able to pick one up at your local Ace Hardware. BTW: There peels are identical to those sold at <mrpeel.com>

Prep Equipment / Re: peels

Iceman;

There is only one way to find out, try it to see what happens. There is a point where you achieve the best possible bake in a specific oven and only experimentation will tell you where that point is. Baking on a stone or steel will provide the bottom bake but it does little for the top bake, so removing the pizza from the deck and placing it on a higher rack position if even for a minute or less can impact the top bake of your pizzas. We do this quite often with stone hearth ovens where we peel the pizzas off of the hearth and hold them up into the crown of the oven to achieve a darker/stronger top top bake just immediately prior to removing from the oven. Most of the time this procedure only takes around 30-seconds but the impact is significant.

Dough Clinic / Re: How does oven temp and time affect the dough?

From your description it sounds like insufficient yeast. Try increasing the IDY by 0.2% to see if that gives better results.

Dough Clinic / Re: Extensibilty tweak needed

To achieve a more toasted pepperoni have you tried moving the pizza to a higher rack position in the oven, if not for the entire baking time perhaps for the final couple minutes. You might also see if you can find a higher count pepperoni, the thinner slices will exhibit a greater tendency to curl and toast.

Dough Clinic / Re: How does oven temp and time affect the dough?

Iceman;

Generally just increasing the dough weight will provide a thicker finished crust, but then too, depending upon your dough formulation a change in the formulation might also provide a thicker finished crust. Without more information it is hard to say.

Baking for a longer time at a lower temperature typically results in a crispier finished crust providing the top of the pizza holds up (toppings don't dry out, char etc.). Now, with that said, if you are getting some char on the bottom of your existing crust which is contributing to the finished crust flavor you stand a good chance to lose it when baking at a lower temperature so this may impact the finished crust flavor. Best thing to do is to experiment with baking at progressively

lower (25F) temperature increments while increasing the baking time to see how it impacts your specific pizza.

One other thing with regard to achieving a thicker finished crust, sometimes just allowing the pizza skin to ferment for 10-minutes or so before dressing and baking will also result in a thicker finished crust, sorta like letting the bread dough rise prior to baking.

Dough Clinic / Re: How does oven temp and time affect the dough?

Riccardo;

I would continue to keep it warm and continue feeding it. This should allow it to return to normal potency over time. Hopefully you haven't lost the culture. In cases like this I've found it to be a good idea to split the existing culture into two sourdoughs, that way if one should be lost you will still have the other one to continue working with.

Starters/Sponges / Re: Reviving a Sourdough Culture

Short time room temperature ferment does not allow for the consistent flavor development that is achieved with a long cold ferment period. You also get better mellowing of the gluten for improved dough handling/opening and to some extent oven spring. If you are looking for more of an acidic finished flavor work with the room temperature fermentation but if that is not your targeted flavor profile I think cold fermentation is the way to go. Keep in mind that room temperature fermentation can be greatly influenced by the finished dough temperature as well as the room temperature itself, dough that is cold fermented is not as sensitive to variations in finished dough temperature and actual room temperature is not an issue during the fermentation process.

Dough Clinic / Re: Change in bread flour, why so different?

Clark;

Additionally, it is the protein that is primarily responsible for the amount of water that the dough requires (absorption) so with the higher protein level in the All Trumps flour the dough would require more water (higher absorption) so if you didn't make any changes you are taking a double hit, significantly more protein for a stronger, tighter dough and a higher dough absorption requirement.

Dough Clinic / Re: What makes dough very elastic?

Carl;

The All Trumps flour is the highest protein content flour available, hence all things equal, it will give you a stronger, tougher, more elastic dough than just about any other flour commonly available. If you want to continue using the All Trumps flour (14.2% protein content) you will need to ferment your dough somewhat longer than what you have been to mellow the protein/gluten to make it more extensible and less elastic. A good "all-purpose" pizza flour is the Pillsbury brand "Bread" flour available at most supermarkets. It is packaged for use with bread machines and has a protein content of around 12% which should be much easier for you to work with.

Dough Clinic / Re: Change in bread flour, why so different?

Clark;

Some of the most common reasons why a dough will come out overly elastic are insufficient fermentation due to a colder than normal dough temperature, over mixing (mechanical mixer only) or use of a flour with excessively high protein level. Too much (over scaling) salt can also result in dough that is overly elastic, and re-

balling the dough prior to opening it into a pizza skin without allowing sufficient time for the dough to thoroughly relax can also cause the problem. If you can provide us with more information we might be able to better define the causative factor.

Dough Clinic / Re: What makes dough very elastic?

The first thing that I would do is to delete the sugar from the dough formula. If that provides you with the quality of bake that you want you're home free, if it doesn't I would suggest trying an organic flour (especially an un-malted flour) as this type of flour will be better suited for the high temperature baking. As for the dough weight, my best advice is to experiment by increasing or decreasing the dough weight in 1/2-ounce increments until you see a finished crust that meets your expectations.

Dough Clinic / Re: A question about dough formula and temperature range.

If you will go to the PMQ web site at <www.pmq.com> and enter into the Recipe Bank I've got a dough management procedure posted that covers all of your questions, or if you wish you can e-mail me ay <thedoughdoctor@hotmail.com> and request a copy of my Dough Management Procedure and I'll be glad to send it to you.

Dough Clinic / Re: how to store dough?

As for the big box chains, they have all have large commissaries where the dough is made and shipped to the stores either refrigerated or frozen. Most have a dough shelf life of 5 or 7-days from day of manufacture to control delivery costs.

Dough Clinic / Re: Papa John's, Dominos, and Pizza Hut make their dough in the morning

There are now some composite peels that address any flavor transfer issues as well as cleaning and sanitizing. Being of a composite material they withstand exposure to moisture/water MUCH BETTER than a wood peel, and you can get them with a short, stubby handle.

Shop Talk / Re: Serving Peel to Table

Don't sweat your lack of a "pizza stone" find a piece of fired clay floor tile, or several pieces depending upon size. Anything that will hold latent heat (1/4-inch/6.5 mm) steel plate will also work. If you can find a thicker steel plate go for it, within reason, the thicker the better, especially when you're dealing with a rather cool oven.

Dough Clinic / Re: The taste of the dough

Craig;

I know you are well tuned into this, but I think a lot of people are confused over GMO. When it comes to wheat, unless we're dealing with Turkey Red (certified pure plasma stock) and even then it's only 95+% pure, all wheat is genetically modified in one way or another to achieve a whole raft of desirable, and some times not so desirable, characteristics, such as yield, drought resistance, sprouting resistance, stem height, resistance to rust, insect attack, the list goes on and on. Now that we don't have the pesticides that we once had to protect our crops we have turned to genetic selection for characteristics which will help a crop exhibit a natural resistance to things which plague the crop. Anymore we can't afford to lose a crop (we all remember the crop issues of just a few short years ago when world wheat stocks were diminished to DAYS, not weeks, months or years. Our flour

prices when through the roof. Genetic selection of favorable characteristics is a major tool in our arsenal to help prevent a reoccurrence of that catastrophe again, or at least in the near future (don't take any bets though). To some, they see anything that is genetically modified as being GMO, heck! I'm even genetically modified (part German and part Italian) and I don't even know anyone who isn't walking, talking, breathing and genetically modified. Genetically modified doesn't mean bad things are about to come (natural selection is genetic modification at work). I think where genetically modified gets to be a sticking point is when there is an un-natural selection such as genes from one plant being artificially transferred to another different type of plant where that transfer would have never taken place in nature. Is GMO good or bad? That's for each of us to decide for ourselves, but for my, my personal stand is that I think it is good, but with the reservation that it DOES leave the door wide open for abuses and that's what worries me. Here's an example of GMO at its best: Mexico, diet based on corn, many people suffering from Lysine deficiency (not just the animals in Jurassic Park), so U.S. develops a genetically modified corn variety (known as high Lysine corn) for growing in Mexico....problem solved. Don't ya just love this stuff? :)

Dough Clinic / Re: First commercial operation in the world using soft durum for pizza

Tomme:

Don't sweat the "window pane" test, we're making pizza dough not bread dough. That test is appropriate for determining correct mixing when making bread, not pizza dough. Pizza dough only needs to be mixed until smooth, it is not even desirable to mix the dough more than this unless you want the finished crust to have a bread like internal crumb structure. 1-hour is not enough fermentation time for any dough except for an emergency dough. After putting your dough up in the bowl, drape (do not seal closed) with a sheet of plastic. Be sure the bowl is fairly large too as this will allow the dough to develop a head of carbon dioxide gas over the dough which will help to keep the dough from drying out while allowing release of pressure due to the gas generated by the yeast. I would suggest going with at least a 4-hour room temperature fermentation period. Use a thermometer to measure the finished (mixed) dough temperature, for starters, you will be looking for something close to 80F/27C. After the fermentation period turn the dough out onto a floured work surface and using a pie pin or rolling pin CAREFULLY roll the dough out to fit the baking pan. If you use shortening or butter/margarine in the pan it will be easier to fit the dough to the pan. Once fitted to the pan, cover again with a sheet of plastic and allow the dough to proof for 30 to 60-minutes if you want to have a thicker crust or if you want a thin crust immediately dress and bake the skin after fitting the dough into the pan. Agreed, getting a stone for your oven will be a tremendous help in getting the crust to color up. As a rough rule, allow the stone to heat up in the oven for at least an hour before placing the pizza on it for baking.

If you find that you're getting too much crust color, especially on the bottom of the crust begin reducing the milk powder to get the color back under control.

Dough Clinic / Re: The taste of the dough

You will get more dough conditioning with the RT first, the CF then allows you to hold the dough for a longer period of time without getting a huge impact in flavor as you would if you held the dough for 72-hours at room temperature. You will get continued flavor development during the CF period, but it will not be the dominant flavor in the finished crust. During the initial RT period the dough will become acidified more than it would if CF during that time, as a result the acids formed

during that initial RT fermentation period will have more time to work their magic on the flour proteins making the dough softer and more extensible while also denaturing proteins (acids do that sort of stuff) which are responsible for a good deal of the flavor in the finished crust.

Dough Clinic / Re: Is my understanding of this technique correct..or am I off?

Bill;

Remember that you will develop a different flavor between cold fermentation and room temperature fermentation. My experience is that if I start with an extended room temperature fermentation that sorta sets the stage for the flavor regardless of how much cold fermentation I give the dough afterwards. I'd move the re-ball process to the day before opening the dough into skins, that way the dough will be plenty relaxed. Day prior to opening: re-ball the dough, then on the following day bring dough balls from the cooler and allow to temper (warm) at room temperature until the dough reaches at least 50F, turn the dough ball out of its container into a bowl of flour, immediately open into skins, dress and bake.

Dough Clinic / Re: Is my understanding of this technique correct..or am I off?

Viva;

I mentioned seasoning the outside (non food contact area) of the steel pan and using oil in the pan with each use to facilitate release. The seasoning on the outside of the pan will continually darken with use thus improving heat absorption properties of the pan...remember, you were adamant about using a steel pan. As for aluminum pans, unless the finish is stated as being a non-stick finish, it will still require some seasoning to ensure a consistent release from the pan. The thing about the dark colored anodized pans is that they are already dark in color so they bake well right from the get-go, where as the non-colored (clear-coat) anodized finish will require outside seasoning to darken the pan for improved heat absorption. Literally translated, you can expect the clear-coat anodized finish pans to bake somewhat differently until they develop that prized dark finish on the outside. Without a seasoned finish they will always require the use of oil in the pan for satisfactory release properties.

Stones/tiles/steel, Pans & Accessories / Re: Sicilian Pizza Pan Search - I have nearly given up - Can you help?

Danny;

First you will need to work at developing an effective dough management procedure, which in this case will include the sequencing of ingredients into the mixing bowl, then developing a fixed dough mixing procedure which will include specifications for a finished dough temperature (in your case I'd recommend 70 to 75F). Then take the dough directly to the bench for scaling and balling, use bread of "food" bags rather than individual plastic containers as the bags are easier to use and are more effective in helping you achieve your end goals. Just be sure to wipe the entire dough ball LIGHTLY with oil before dropping it into the bag. Twist the open end to close, forming a pony tail and tuck the pony tail under the dough ball as you place it in the cooler. Allow the dough to ferment for 24 to 48-hours in the cooler before use. To use the dough, remove about a 2-hour inventory of dough balls from the cooler and place on a sheet pan in an out of the way place (under the prep-table), allow the dough to warm to 50F, then turn the dough ball(s) out of their individual bags allowing them to drop into a bowl of dusting flour. Save the bags for reuse by placing in a clean (food safe) lidded container. The bags can be

reused many times over. Begin opening the dough into pizza skins as you need them. The dough will remain good to use for a period of 2-hours in a shop temperature of 100F. Any unused dough balls at room temperature for more than 2-hours should be opened into skins, placed on pizza screens and put into a wire tree rack in the cooler for 30-minutes uncovered, then slip a bag over the rack to prevent drying. These pre-opened skins can be used during the "off-peak" periods or during the "slammed" periods when they will come in handy to help you stay on top of the orders. When using these pre-opened skins just remove from the screen and place top down on your prep-peel, you might need to clean-up the shape or diameter a little as you do this, but trust me, it is a real time saver when the chips are down. From there, dock if necessary, dress to the order and bake as usual.

Shop Talk / Re: Selling Pizza

You have more going on there than a lack of sugar, you have a boat load of dry milk, sugar and butter in your dough "recipe" already. If your IDY level is already high it doesn't make sense to add more salt and sugar to slow down the yeast activity, just reduce the yeast level. Typically, IDY is used at around 0.375 to 0.5% of the total flour weight, then plug the salt in at 2%, ditto for the oil. Sugar is optional but questionable with all that dry milk. The main sugar in dry milk is lactose which contributes greatly to crust color development but since lactose is not fermentable by baker's yeast sucrose would possibly be needed for yeast nutrient out at 48-hours or more. One other thing to consider is the finished dough temperature, the warmer the dough the faster it will ferment. A good temperature to start with is around 80F. Can you share with us how you manage the dough? This is everything you do to the dough from the time it is mixed until it is used (be sure to provide all pertinent times and temperatures) Baking time and temperature? What do you bake on/in?

Dough Clinic / Re: The taste of the dough

In a commercial pizza oven we just rake the debris loose and then broom it out of the oven, but a home oven presents a totally different story. I have a suspicion that you might be using too much peel dust when peeling the pizza into the oven. Another option is to have a sheet pan or large piece of foil handy to place on the shelf below the one you are baking on, then sweep the residual peel dust onto the foil/sheet pan. This is the procedure that I use and it works well for me. For my broom I use a brass bristle tire brush that I got from one of our local auto supply stores, it works quite well at cleaning the stone. Before I found the tire brush I used a steel bristle brush that I pirated from my arc welding tool box.

Dough Clinic / Re: What to do about burning flour on the stone when making multiple pizzas.

This work reminds me what was done a number of years ago with developing hard white wheat varieties, which at one time were actually considered dockage in the grading of the wheat, now it is something of a main stream product. (White wheat varieties are popular as the bran portion has less tannins than the more conventional HRW and HRS wheat varieties making it a favored wheat to use for whole-grain breads due to the reduction in bitterness). They still have a "long row to hoe" though, before the wheat can be successfully commercialized. For example, they will need to develop pest resistance, drought tolerance, sprouting tolerance, not to mention increasing yield potential. I was involved with U.S. Wheat a good number of years ago and I noticed that while a good durum wheat or flour was always sought, it was seldom purchased in any quantity due to its premium cost (they just don't have the money to spend on things like that). This lead to the work

at K-State University many years ago on making "decent" pasta from hard wheat varieties. They were successful in making a fairly decent pasta but rather than that wonderful yellow color it has more of a muddy, brown/gray color. You can buy this at your local supermarket as it has been commercialized for many years now. I say all of this not to take anything away from those who have successfully developed a soft wheat durum, but to underscore just how much work actually goes into developing and commercializing a new strain of wheat. What you will probably see is some contract growing with limited availability through small milling companies (whatever that is, they're all very big) but maybe it will present new opportunities for a specialized cottage scale milling industry where they will market the new durum flour through some type of a co-op milling facility. This is along the lines of how the hard white wheat varieties have been marketed for many years (Farmer Direct Foods/<farmerdirectfoods.com>). This is yet another chapter in the ever evolving saga of PIZZA. New and better things brought to you through independent innovation!

Dough Clinic / Re: First commercial operation in the world using soft durum for pizza

A good way to access pizzeria owners is by going where they go, Pizza Expo and the NAPIC Show and setting up shop (booth) or seeing if you can get on the seminar schedule.

Shop Talk / Re: Question for store owners

You might also try <www.mrpeel.com>.

Stones/tiles/steel, Pans & Accessories / Re: Where to buy Pizza Peel in Canada ?

Just to add another "log to the fire", pan seasoning is not safe either. Some states do not look favorably on the use of seasoned pans as there is some indication that the carbon is carcinogenic as are some of the compounds formed during the seasoning process. This is one of the things that has lead to the widespread popularity of the anodized aluminum pans, but then there is an issue with aluminum too. I'd suggest that you look around for a square steel cake pan (popular in the '50's and 60's) and then have it sand blasted to remove all trace of any finish, then just season the OUTSIDE of the pan (non food contact area) and oil the inside of the pan when you want to use it, then thoroughly clean any residual oil out of the pan when you're finished using it. This should work reasonably well for you.

Stones/tiles/steel, Pans & Accessories / Re: Sicilian Pizza Pan Search - I have nearly given up - Can you help?

Billy;

The dough press does not partially cook/bake the crust, instead the heat (hot press forming method) just helps to relax the gluten in the dough for improved pressing and to reduce snap-back/dough memory after pressing. The hot press forming method has become popular in this application because it allows for fast and easy forming of the skin, it effectively creates a thin dough skin without degassing the dough as a sheeter/dough roller would meaning that you still get some edge rise during baking, of less critical importance is the fact that the dough balls are lightly oiled and the heat of the press forms a dry skin on the surface of the dough skin which allows the formed (pressed) skins to be immediately stacked one on top of another to save space in the reach in cooler under the prep-station.

Dough Clinic / Re: Fast Casual - Only 2 dough options?

C.P.;

Your combination of 14% oil and 60% water seems to be a might on the high side for a deep-dish pizza, especially one made with an all-purpose flour. I think you would be better to bench mark off of not more than 50% absorption. Otherwise the procedure and dough management look to be OK.

Dough Clinic / Re: Chicago deep dish dough gum line

JPB;

Any thin crust should work well, the thicker type crusts just don't cut it with this type of topping. I like to think of it like this: Does Brie cheese go better on a cracker or on a slice of white bread?

General Pizza Making / Re: Brie ideas?

Feeling wet but not sticky is an indication that the oil level is excessive for your specific formulation or dough management procedure. You might want to cut the oil level by 50% to see if that will give you better results.

Dough Clinic / Re: Chicago deep dish dough gum line

New York;

If you give me a call at 785-537-1037 I will be more than glad to help you sort things out. Please e-mail me so we can establish a time and date for the call, that way I'll be here in my office to take your call <thedoughdoctor@hotmail.com>

Shop Talk / Re: Help preparing many pies in advance

No real downside at all, it is a fairly common practice to store dough balls on sheet pans in the cooler. It is not so much of a space saver since you will need to have a rolling rack with a shelf spacing of about 6-inches to accommodate the sheet pans ((NAI/New Age Industries, Bob Brackle: <bob.newage@windstream.net> can get you set up with racks at a very reasonable cost. The advantages of storing your dough on sheet pans is that you can store them in a moveable rack (but then too the stacks of dough boxes are moveable too), the sheet pans do not need to be cross-stacked as the dough boxes do (advantage to the sheet pan). The sheet pans will require a food contact approved plastic bag to slip around the pan of dough but keep in mind that the bags can be reused to minimize cost. Sheet pans are easier to clean than dough boxes for the most part. Sheet pans when not being used require very little storage space (advantage to the sheet pan). Both the dough boxes and sheet pans are softer than steel so use only plastic type scrapers to remove dough balls and any remaining dough from the surface. Sheet pans are cheaper to purchase than dough boxes (advantage to the sheet pan). Since the sheet pans are lighter than the dough boxes they are easier to handle and when the last dough ball has been removed the empty sheet pan is easily stored on a shelf or table near the prep-line (advantage to the sheet pan). If you ever find that you need to transport dough balls to another location the bags covering the sheet pans will become a single use item and do not provide much protection for the dough balls so boxes are the only way to go in this situation.

Now that you have the information, the choice is yours. Pick up a few used sheet pans and a box of bags and give it a try for a week or so, then make your decision based on YOUR experience.

By the way, DO NOT tie/knot the bags to close, instead, the correct way to close the bag is to pull the bottom of the bag up over the nearest row of dough balls and then bring the top flap of the bag down to cover the front of the sheet pan and tuck the edges under the sheet pan to secure. When using a wheeled rack this means

that you will only need to secure the end of the bag on the two supporting rails under the sheet pan, and be sure to lightly oil the top of each dough ball after you place it onto the sheet pan, it will do wonders to keep the plastic from sticking to the dough. When you are using the dough balls from a sheet pan leave the plastic bag in place allowing it to drape over the remaining dough balls on the pan to protect them from drying out (advantage to the sheet pan).

There you have it.

Dough Clinic / Re: Pizza Box vs Sheet Pans

Years ago we used to use Brie cheese in making pizzas during our annual pizza class at AIB. It worked well but don't use too much of it, I think it goes best with a lightly topped pizza much as you have described using caramelized onion, walnuts, dried figs, and DATES (they were made just for a brie topped pizza), if you want a little color add some fresh spinach and a few pieces of sun dried tomato. Forget the mushrooms as brie has a mushroom like flavor already and the added mushrooms just work to cover over the brie flavor.

I think you're on track to a great tasting pizza!

One other thing.....gotta be made on a very thin cracker crust.

General Pizza Making / Re: Brie ideas?

23% oil is at the very top end of the amount of oil that can effectively be used in making pizza crusts where the fat is incorporated into the dough. Many of the frozen pizzas that we see on the supermarket shelves contain oil in excess of 16%. This is why you really need to have a strong flour to carry all that oil weight. When mixing a dough with that much oil in it it can get to be somewhat problematic getting the oil incorporated into the dough if it is added correctly (after the flour has absorbed the water) since it takes considerable mixing action with a planetary mixer to incorporate that much oil. If the oil is added too soon, that amount of oil is very well capable of rendering a very sizable portion of the flour unable to develop gluten resulting in an overly weak dough structure with a pronounced tendency to collapse at the slightest provocation, especially in the oven when the structure is under pressure as the dough begins to expand (oven spring), then as the baked crust cools, the weight of the oil and the over lubricated structure cause the crust to settle (collapse) during cooling.

Dough Clinic / Re: Chicago deep dish dough gum line

If you buy the pans from Lloyd Pans don't forget to spend a couple of extra bucks on their deep-dish pan gripper, it works great for holding the pan and flipping the baked pizza up in the pan so you can slide a spatula under the pizza to guide it out of the pan.

By the way, the finish on those pans is INDESTRUCTABLE.

Do keep in mind that while oil is not needed in these pans for release you will probably still want to use some oil in the pan to achieve the desired fried crust characteristic common to deep-dish pizzas, then after using the pan it can be either wiped out with a clean towel and put away for future use, or it can be washed in the sink along with your other dishes without harm or damage (don't try this with a seasoned pan as it will soon destroy the seasoning causing it to peel off)

Stones/tiles/steel, Pans & Accessories / Re: Chicago Metallic deep dish pizza pans

Aluminum is an issue but not stainless that's why all of the prep-table trays are stainless. You also want to make sure that you are mixing your sauce in a stainless bowl as opposed to a tin plated bowl as the acid in the tomato will remove any

oxidation from the tin plating giving the sauce a distinctive metallic taste. The aluminum alloy agitators such as the flat beater (commonly used to blend sauce) do not pose such a problem ,but some of the newer mixers are coming out with stainless mixing attachments too.

Stones/tiles/steel, Pans & Accessories / Re: inserts

What does the bottom of the pizza look like? Can't tell from the pictures. The crust appears to be rather thick, what was your pizza diameter and scaling weight? Also, what was your exact procedure that you used to open the dough ball into a skin? That can impact your finished crust too.

Newbie Topics / Re: first pizza failure, 2nd try same day ehhh u tell me

I'm guessing that the cost might be more than what it would cost to buy a used gas oven. You might want to run this across George Mills at the PMQ Think Tank.

<www.pmq.com> George is the resident expert on such things.

Commercial Ovens / Re: Help With Pizza Oven

Since the cost of gas varies across the country the easiest thing to do is to contact you local utility company and ask them what the cost is to operate a gas kitchen range is.

Home Ovens / Re: Costs to operate a typical home Gas oven

Yep, as you continue t bake in the pan(s) they will continue to darken giving a better overall bake. A well seasoned pizza pan is like a well seasoned frying pan, something to be cherished and never washed.

Newbie Topics / Re: so the dough is made now what?

I've had it. It's the new concept in pizzerias, I've helped to open two of them already and have more on the schedule for this summer.

Pizzeria & Restaurant Reviews / Re: Blaze Pizza

Your pan doesn't like like it has been seasoned yet, if that's the case you want to season the pan by wiping it with salad oil and baking it at 400F for about 20-minutes. Then bake a second time to darken the seasoning finish. By seasoning the pan before use you will get a better bake and the pizza won't stick to the pan either. DON'T wash your seasoned pans, just wipe them down and put them (it) away when you're finished making pizzas. If you wash the pan, especially if you allow it to soak the seasoning finish will come off like a bad sunburn which will result in the need to strip the entire finish off of the pan and start over again or get a new pan and start over again.

Newbie Topics / Re: so the dough is made now what?

I would suggest increasing the IDY to 0.375%. You can add the difference directly to the dough and then mix at low speed or knead for about 5-minutes and you'll be good to go.

Dough Clinic / Re: Warm rise dough going now

The advice from Mitch Dog is spot on, additionally you don't want to punch the dough down before you begin opening or trying to open it into a skin. When I use a process of straight from mixer to a pizza I normally place the dough in an oiled bowl as you do but then I allow it to

ferment for at least 6-hours before opening it into a skin. You will get the best results by just allowing the dough to rise, if it falls on its own, not to worry, that is

normal and is referred to as the "first full rise" if you make a note of the fermentation time the dough took to get to the first full rise and then multiply that time by 50% you will know what the full fermentation time for your flour, in your dough is. At full fermentation time the dough will have the best combination of elasticity and extensibility for opening into a pizza skin. It will also produce a crust with a pretty decent flavor profile as opposed to only a 2-hour fermentation period. When opening the dough into a skin just turn the dough out of the bowl into a bowl of dusting flour, flour the dough ball on both sides, pat off most of the excess dusting flour and open into a skin for your pan following the advice from M.D.

Newbie Topics / Re: Dough is Too Elastic

Most of my summer of '76 was spent between getting the baking research department moved from Chicago to Manhattan, Kansas and getting our labs installed in our then new facility while directing research at the Manhattan, Kansas facility. I felt like I was on a Yo-Yo between Chicago and Manhattan.

Chitchat / Re: Where were you in 1976?

The one thing that I didn't hear you say was anything about putting something under the pizza in the box to allow the bottom of the pizza to ventilate. You might contact Ed Noe <ed@colonyfoods.com> and ask him for a few samples of Pizza Savors. These are a plastic mesh that you place under the pizza when you place it in the box. They work quite well in DELCO operations such as yours.

Dough Clinic / Re: pizza box

Sounds like oxidation. Given time, even in the freezer, pepperoni will turn a beautiful battleship gray. This is why the commercial pizza manufacturers use MAP (modified atmosphere packaging) when packaging their pizzas.

Pizza Toppings / Re: Gray/White Storage Spots on Pepperoni

QJ:

You want to have a protein content that is at least equivalent to a bread flour. The AP flour is shown as being a blend of hard red spring wheat and soft wheat for a protein content between a cake/pastry flour and a bread flour. If you can get a "bread" flour it will perform better overall for you.

Dough Clinic / Re: How is my recipe??

Avoiding too much sugar in a pizza?

If a pizza has a major fault it is probably in the sodium content which comes from the dough, cheese, and processed meat toppings. This is why I have always been an advocate of using only 1.75% salt in the dough as opposed to 2.5 - 3% as we have seen used in the past. Can't do much about the cheese, but for the past 4-years I've been a strong advocate of using less or a more flavorful cheese/cheese blend in conjunction with less dried herbs to allow the cheese flavor to come through, the sodium contribution in the processed meats is another thing, but easily addressed by using non-processed meat toppings, or some of the new low sodium meat toppings, or just have your pizza with vegetable toppings, anyway you look at it, pizza really isn't all that bad if eaten in MODERATION. When someone sits down and eats a whole 12-inch pizza, just think of this....that's the same as eating half a LOAF of bread, a quarter pound of cheese or more, not to even mention the meat toppings. We'll call the vegetable toppings a small side salad to go with that cheese sandwich.

If they want to go after "junk" foods, they should start with dry breakfast cereal, granola bars (what a joke), and how about the hot dog?

Sorry about the outburst.

[Chitchat / Re: How pizza IS NOT a junk food on Dr. Oz tomorrow](#)

Roy;

When conducting the "egg" test do not manipulate the dough any more than necessary to form it into a ball about the size of an egg, if you knead the dough it will toughen, just like re-rounding a dough ball and then expecting it to open easily....it won't. If you knead the dough before or as you are forming it into a ball it will tear every time.

[Dough Clinic / Re: On Mixing](#)

Brad;

A saltine cracker formula isn't all that different from a cracker type pizza dough formula and it typically contains 8% or more fat.

[Dough Clinic / Re: Cracker crusts with higher oil percentage](#)

Someone might look into this to confirm but a number of years ago I looked into why this type of oven was not available and what I was told at the time was because it would not qualify for the UL certification/seal if the operating temperature was above (I think it might have been 700F but don't remember anymore).

[Pizza Ovens / Re: Best electric oven for 900 \$\times\$ ½ bakes in the US?](#)

You might also try increasing the finished dough temperature by a few degrees too, or if you don't want to go that route experiment with letting the dough sit out at room temperature before going into the fridge. If you go that route use test increments of 15-minutes.

[General Pizza Making / Re: Trying to get the taste of 4-5 day dough into a 3 day cold ferment](#)

Essentially all, if not all of the box manufacturers have already addressed the problem, if anyone still has concerns just put one of those plastic pizza mats under the pizza so it doesn't contact the box. Will Doctor OZ just capitalize on on the hype or will he be honest and say that the problem has already been addressed? I know where I'd place my bet!

[Chitchat / Re: How pizza IS NOT a junk food on Dr. Oz tomorrow](#)

Norma;

I have zip, zero, no respect for the guy. Agreed, he's a QUACK!

I refuse to even watch his show, for any reason whatsoever.

That's just my own personal opinion of him.

[Chitchat / Re: How pizza IS NOT a junk food on Dr. Oz tomorrow](#)

QJ;

Your dough formula as converted by Peter looks to be in good balance for a very typical American style pizza crust. The specs on the RHAP flour appear to be on the low side to support a long (3-day) cold ferment period in a restaurant/pizzeria environment. If you can provide us with your dough management procedure and baking parameters we can offer more information on flour performance and crust quality.

[Dough Clinic / Re: How is my recipe??](#)

It's a lot easier to review a dough "recipe" if you can put it into a "formula" based

on bakers percentages. But then before we can suggest any changes we need to know what you think needs to be changed/how it needs to be made different. However, as I always tell my clients, when you operate a pizzeria you don't have a vote in the matter, it's your customers who dictate what they like or don't like about your pizzas so before you go making any big changes you need to get some customer input, remember, if you look at quality on a scale of 1 to 10 with 10 being the best possible, and your pizza ranks 7, any change either higher or lower on the scale might adversely impact the quality of your pizza in their eyes. You think the pizza is too chewy, they think it's just great, you make the pizza less chewy, they don't like it...and so it goes.

Dough Clinic / Re: How is my recipe??

Roy;

Commercial planetary mixers are much more powerful than most home type mixers unless you are one of the few fortunate ones who happen to have a Hobart A-120 or A-200, or even a Hobart N-50 (a gear driven 3-speed 5-quart mixer like a K5-A on a double dose of steroids). With that said, a food processor will mix a dough much in the same way as a vertical cutter mixer (VCM) so it is possible to achieve greater levels of gluten development with a food processor than with a home type planetary mixer. As the gluten continues to develop during mixing the dough goes from a very rough appearance to a smoother appearance which appears to be lighter in color (actually no color change at all, just the dough's smoother skin reflecting more light), as the dough approaches this level of development it becomes noticeable less sticky/tacky, as mixing continues the gluten film develops extensibility, allowing it to stretch without tearing (remember I showed this in the video), The "egg test" is designed to assess dough development to this point. When this level of gluten development is achieved the dough can be taken to the bench for cutting, scaling and rounding/balling without the dough skin continually tearing resulting in greater difficulty in handling the dough. In a pizzeria we have only a 20-minute window of time during which the dough must be taken from the mixer, cut, scaled, rounded/balled, boxed and placed into the cooler so when you are dealing with upwards of 80-pounds of dough you do not want to have a sticky or tacky dough as it will only serve to slow down the operation. When making pizzas at home where only a few dough balls are in play, this is not an issue unless you want to have a dough that is easier to work with. Above all, remember that pizza dough is best under mixed, how much under mixed? Try mixing a dough just until the ingredients are fully incorporated and you have a homogeneous dough mass. The resulting dough will be sticky but it will make a great pizza if you give it a minimum of 18-hours cold fermentation time. This same rule is followed by most pizzerias, they just mix it longer to make the dough easier to handle on the bench, ditto for the large box store commissaries where they mix the dough just enough to allow for ease of processing through their equipment and to control the spread of the dough while it is stored in the large dough boxes.

Dough Clinic / Re: On Mixing

I have never seen one of those bags opened from the end, always torn apart from the center, when the pizza is but a recent memory, fold the pizza circle in half and toss it in the trash along with the remnants of the bag and any napkins.

New Forum Members / Re: Leathery!

As a "south sider" growing up in Tinley Park (175 th. street) I know exactly what you are talking about. Ed and Joe's in Tinley Park is my "go to" pizza place when we visit family there. The characteristic you are referring to is the result of sheeting

the dough from edge to edge and then sealing the top of the pizza with a layer of cheese and baking it for roughly 25-minutes at 500 to 525F. And don't forget, you have to use raw sausage or you'll never achieve the flavor so characteristic of these pizzas. Since you probably don't have access to a sheeter, you will need to get a workout using a good, sturdy rolling pin, not one of those silly home type rolling pins. Keep your dough absorption around 50%. Allow the dough to bulk ferment for about 5-hours or more, roll out thin (1/8-inch thickness) and trim to size. Dress as desired and bake. BTW: You forgot to mention that the pizzas are party slices only and the corners are the first pieces to go, then we go after the soft center pieces. No crispiness here folks, just all good.

New Forum Members / Re: Leathery!

Atta flour is a typical flour used for making flat bread type products. It is actually a durum type flour so I would suggest doing a little experimenting with it to see how it impacts the pizza after it has had a chance to sit around for 20 to 30-minutes after baking. The gluten is somewhat different in durum flours than what we find in our more typical patent grade flours that we commonly use, it is this difference that can cause the pizza crust to become quite crispy when first baked but as the pizza cools it becomes so tough that you have to gnaw off a piece to eat it. You can always blend it with your regular flour too, a blend of 75% regular flour and 25% durum flour is probably as high as you will want to go if you have to blend it.

Specialty-Grain Pizzas / Re: So, rancid is a bad thing?

Roy:

When mixing a pizza dough the extensibility/feel of the dough is a bell shaped curve, meaning that it goes from very soft to very tight and elastic as the gluten is developed to very soft and extensible again as the dough reaches breakdown. This is one of the reasons why pizza doughs are best when mixed only to the point where it begins to take on a smooth, satiny appearance, more mixing than this does two things, it makes the dough tighter (more elastic) and difficult to handle and it puts undue wear on your mixer. The gluten will be developed through biochemical gluten development during the cold ferment period with the added advantage that biochemically developed gluten is much drier and more extensible than mechanically developed gluten. Allowing the dough to sit out on the counter too long before going into the fridge can easily result in over fermentation of the dough while it's in the fridge. This is why in my Dough Management Procedure it calls for the dough to be taken directly from the mixer to the fridge. Blisters on the bottom of the crust are perfectly normal for a well fermented dough with a very soft consistency. In fact, I developed a baking disk (Hearth Bake Disk, Lloyd Pans) that was designed specifically for use in air impingement ovens when combined with the recommended formula modifications and oven baking parameters gives those same small bubbles/blisters to the bottom of the pizza so the finished pizza has the appearance of having been baked in a hearth type oven.

Dough Clinic / Re: On Mixing

Roy;

The two main things responsible for getting water into a dough when using a mechanical mixer are mixing time and fermentation time which allows time for the flour to fully hydrate. As for a dough giving off water during baking as long as you have a manageable dough it will bake off to about 32% moisture content during baking regardless of how much water (dough absorption) was used in making the dough. The only way that you can alter this is to put something into the dough that will hold onto the water during baking such as fiber, gums (actually a form of fiber),

glycerol, gelatin, etc.). If you go back to the late 1970's you might remember the New Horizons (Continental Baking Co.) high fiber bread that was all the rage. The dough contained roughly 30% microcrystalline alpha cellulose (cellulose for short) and the total dough absorption was up around 105%. The finished bread has the mouth feel of a wet sponge....now that's water retention!

With that said, once a dough is fully developed further mixing can have a degrading effect upon the flour proteins causing them to begin breaking down and releasing water. This is why an over mixed dough becomes soft, extremely extensible and very sticky. A pizza dough should never be mixed beyond the point where it just begins to take on a smooth, satiny appearance.

Dough Clinic / Re: On Mixing

I would suggest making a trial batch of dough with the salt and sugar bumped up to 2% and see if that brings any improvement.

Dough Clinic / Re: Pizza nirvana; trying to get closer to the crust at Sam's

Peter;

Years ago I did a rather extensive literature search on how dough/bread (if you want to call it that) was fermented back in the glory days of Rome and earlier. Essentially what I found as a common denominator was that ground grains would be mixed with nuts and berries (or whatever was available or could be found) and at some point mixed together to form something of a dough, this was placed on a flat stone in the middle of a campfire and heated until it was baked. There are some references to the "bread" being leavened but remember yeast wasn't even discovered/identified until Louie Pasteur did his research, it has been speculated that the wild yeasts found on grains, nuts, and especially fruit and berries was the driver of the leavening (fermentation) as it was too rapid for bacterial fermentation. In modern days when we make dough without added yeast we are still getting a dose (though probably not as great) of wild yeast, but then too, we generally hold the dough longer between mixing and actual baking so in all probability there is a very good chance that as you stated, bacterial fermentation is also playing a part in the leavening of the dough which was made without any added yeast. Operative word being "added".

General Pizza Making / Re: no-yeast cold fermentation, possible?

Been there, done that, without oil either in the bag or on the dough ball the dough sticks to the plastic. When I lightly oil the dough ball and drop it into the bag it comes out with very little encouragement from me. BTW: Oiling the dough ball doesn't create as much of a mess in the bag as spraying oil in the bag and it still gets the job done.

Prep Equipment / Re: Correct Use of Plastic Bags For Fermenting

Plus, in a restaurant setting the peel would need to be washed and sanitized each time it was used in that manner. Hot pizza being balanced on a peel is bad enough behind the counter but in front of the counter with people walking around, kids running around and whatever, words you don't want to hear are; excuse me (after being bumper into), oh my gosh! (after planting the pizza in someone's lap), or oops! (as the pizza slides off of the peel and lands on the floor). If a restaurant can be sued over the stupid actions of a lady with a cup of coffee, a pizzeria can be sued when a lady burns the roof of her mouth on a hot pizza (nobody told her it was HOT!), or a man get sued by a person for whom he opens a door and that person hits their shoulder on the door frame and gets an "owie", I can see your future from a mile away. As the others have said, maybe a good idea, but it is not recommended

that you do it for any number of reasons.

Shop Talk / Re: Serving Peel to Table

That is why it is so important to oil the dough balls either before or after you place them into their containers. You will see that when we use dough boxes in a pizzeria we place the dough balls in the box un-oiled as this prevents the dough balls from sliding around in the box during handling we then lightly brush or wipe the tops of the dough balls with oil prior to taking them to the cooler, this is what prevents the dough balls from developing a dry skin or crust on top.

Prep Equipment / Re: Correct Use of Plastic Bags For Fermenting

There is not much you can do for a pan that is expanding and contorting/warping as a result of heating. It looks like someone tried to address the problem by putting those creases in the pan (actually it looks like something that a heating and air conditioning company might make as part of their duct work). Even the popular 18 X 26 aluminum sheet pans warp (bow) as a result of heating. There are some steel 18 X 26 sheet pans made with sharp creased corners and a heavily reinforced top rim that are designed specifically to resist warping. I think square shaped pans are especially troublesome with warping. Round pans or pans made with a wire reinforced top rim and sharp bottom corners as well as round shaped pans resist warping pretty well.

Shop Talk / Re: help with "cure baking" steel pans please

Or.....it might have been caused by wild yeast strains which are present in the air, on our hands, utensils, etc.

General Pizza Making / Re: no-yeast cold fermentation, possible?

If by "more constant air distribution" you mean that it has a fan to move the air around, that's the one I would opt for.

Prep Equipment / Re: Bottle fridge for proofing dough advice

What temperature is the fridge operating at? A good cold ferment environment is between 36 and 40F.

Prep Equipment / Re: Bottle fridge for proofing dough advice

Here's my 2-cents worth;

If you use lidded containers you really should leave them un-lidded after placing them in the fridge for at least 2-hours or more to promote consistent cooling of the dough without forming condensation in the container....this can be a real pain. When using plastic bags, I just oil the dough ball and drop it in the bag, ponytail, tuck and place in the fridge. The bags can be reused any number of times. I just use one of our empty margarine tubs and pack the bags into the tub and lid, store in the fridge until the next time you're ready to make dough, I've used the bags countless times this way. In a commercial setting (pizzeria) we put them into a 5-gallon bucket and store them in the walk-in. We reuse them for a full week if we can. It's only oil in the bags so there is nothing to spoil or go bad especially when stored in the cooler.

Prep Equipment / Re: Correct Use of Plastic Bags For Fermenting

Your yeast is at 0.4%, but what kind of yeast are you adding? The salt at 1.6% is a bit on the low side, typically we see salt levels closer to 2% with a minimum of 1.75% for optimum flavor development in the finished crust. Depending upon how you are managing your dough, all of the sugar might be metabolized by the yeast

before baking leaving little if any residual for crust color development. If the sugar is being added to help with crust color development you will probably want to be in the 2% sugar range, but again, it all depends upon how you are managing the dough.

Dough Clinic / Re: Pizza nirvana; trying to get closer to the crust at Sam's

The problem with freezing CY has to do with the formation of ice crystals within the yeast cells which damage a good number of the cells to the point where some are killed and others are damaged to the point where they can no longer participate in the fermentation process. This is why commercially frozen yeast leavened products typically have a frozen shelf life of only 16 to 22-weeks. Home freezers are not nearly as cold or efficient as commercial freezers so the ice crystals formed are even larger than those formed in a commercial freezer (-35F to -50F) and are even more damaging to the yeast cells. When frozen in a home freezer we typically begin to see damage to the yeast cells in as few as two to three weeks and it keeps getting worse as time progresses in the freezer. Dry yeast, whether it be ADY or IDY has a much lower moisture content than CY so it is not damaged to any great extent when stored in the freezer (this applies only to unopened bags of ADY & IDY). Years ago I did a study on IDY that was stored for two years in their unopened bags. The storage conditions were freezer (-10F), walk-in cooler (36F) room temperature (ambient 70F) and in a south facing window. Gasograph results revealed that the bags stored in the south facing window lost roughly 25% of its activity as compared to the activity when fresh, the bags stored in the cooler and freezer were nearly identical to each other showing only about a 6% loss in activity while the sample stored at room temperature fared nearly as well with only a 10% loss of activity. At one time most IDY manufacturers used to have a two year room temperature shelf life in their literature, I think that has been amended now to only one year.

Once the bag has been opened the yeast immediately begins to absorb moisture from the air and shelf life is dramatically reduced no matter how it's stored.

General Pizza Making / Re: When cold-fermenting dough, is there a difference in tanginess between cy & IDY?

The person you really want to share this with is George Mills at the PMQ web site. <www.pmq.com> Login to the Think Tank and post this to George, he is the resident oven and equipment guy with many years of experience under his belt.

Pizza Ovens / Re: Help identifying pizza oven. Guess that oven...

There is essentially no difference between the pans that you linked and the one that you are presently looking at, just a different manufacturer. They are both of aluminum construction, most likely the same weight aluminum too, both are hard coat dark colored anodized finish. While this type of finish will give less sticking it is still not a non-stick finish as PSTK is, but if you remember to use a little oil or shortening in the pan you shouldn't have any problems with it. Just for the record, deep-dish pizzas bake better if oil or shortening is used in the pan anyways so it should be a moot issue. Just be careful of what you use when removing the pizza from the pan as you CAN damage the anodized finish. My favorite tool for that job is a flexible, cake decorating spatula with a rounded tip. Don't use one with a square tip as the corners are prone to digging into the pan and ruining the finish, and above all, NEVER use a knife to dig the pizza out of the pan. To remove the pizza from the pan use a deep-dish pan gripper to hold the pan, run the spatula around the edge of the pizza to free it from the pan just in case it might be adhering someplace, with a quick flip of the wrist to raise the pizza in the pan, slide

the spatula under the pizza to guide it out of the pan and onto a cutting surface. Cut your deep-dish pizza with a rocker knife (you can probably make one yourself by looking at pictures) or a French knife, pizza wheels don't work especially well on deep-dish pizzas.

[Stones/tiles/steel, Pans & Accessories](#) / [Re: Which 14 inch American Metalcraft deep pizza pan?](#)

It should work just fine.

[Stones/tiles/steel, Pans & Accessories](#) / [Re: Which 14 inch American Metalcraft deep pizza pan?](#)

When used at the correct substitution levels and added to the dough in the correct manner there should be no discernible difference in flavor impact from any of the yeasts assuming the compressed yeast (CY) is fresh.

[General Pizza Making](#) / [Re: When cold-fermenting dough, is there a difference in tanginess between cy & IDY?](#)

If you go with a 5000 series pan try to get the hard coat black anodized finish, if you can't get that the pans will be bright aluminum colored which just means that you will need to season the pans well before using them, and NEVER EVER soak them in hot soapy water, to do so will ruin the seasoning on your pans and you will need to strip off all of the remaining seasoning and start all over again. Have you looked around locally for cake pans? Cake pans can be either aluminum, steel or tin plate. All three work well, sometimes the steel and tin plate pans already have a dark or green colored finish which would mean that you won't need to season those pans, but if they are bright colored you will need to season them prior to baking. You might even look around for a 2-inch (50-mm) deep skillet to use as a deep-dish pizza pan, just be sure to remove the handle if it is made out of plastic, there are some folks here (myself included) who have made pizzas in a cast iron skillet with excellent success.....it's gotta be cheaper than \$70.00.

[Stones/tiles/steel, Pans & Accessories](#) / [Re: Which 14 inch American Metalcraft deep pizza pan?](#)

You might need to have a U.S. export broker assist you. He is licensed to export legal goods outside of the U.S. You may also need to have a broker on the receiving (your) end to help in getting it through your customs department and making sure any import fees/taxes are paid before the product is released.

Here is the way it typically happens:

- 1) You hire a U.S. buyer to purchase the product, they have it shipped to your export broker.
- 2) Your export broker does all of the paper work and has the product transported to your broker who will receive the product.
- 3) Your broker will follow the product through your customs and notify you of the import/duty fees incurred.
- 4) Your broker will ensure that the product is released for you to pick up.

Note: Do your home work, get some idea of what the import duty fees will be, refrigerated shipping, boat or air cargo, fees and services provided by both of your brokers, will you need a buyer or will your U.S. export broker provide that service. I hope this helps.

[Pizza Cheese](#) / [Re: Importing Grande cheese?](#)

It's the germ oil in the whole wheat that the culprit here. Since the rancid flavors are easily distilled off during baking we rarely detect the rancidity in fresh baked

product (think pizza) or in bread for that matter, but the rancidity returns with a vengeance after the product sets a while after cooling (think bread). With this in mind you might be just fine using the flour to make your pizzas if you're planning to eat them while they're still hot, but take a pass on the bread since it is typically consumed over a day or more during which time rancidity will raise its ugly head. Not a problem consuming rancid product so don't bank on someone cashing in on your life insurance just yet.

I agree that freezing whole-wheat flour is the best way to go...it keeps forever in the freezer. Since rancidity is an oxidative reaction, hence its name "oxidative rancidity" putting your fresh whole-wheat flour in the freezer as soon as possible will slow the reaction preventing the development of the characteristic flavor in the flour so you could break the large bag down into smaller bags for freezer storage, then when you want to use the flour just remove some from a bag (I scale it into bowl) reseal the bag and put it back into the freezer, the flour in the bowl should be covered and set aside (I do it overnight) to warm-up. If your flour was fresh when you put it in the freezer you don't need to worry about it becoming rancid over night, it could take weeks for the rancidity to develop to a detectable level, so if you're planning to do a lot of baking during the week you could also take out a whole weeks supply.....but, don't put any unused flour back into the fridge, and never put it back into the bag from which you removed it as this can result in the entire bag going rancid faster than the others.

Specialty-Grain Pizzas / Re: So, rancid is a bad thing?

I'm not sure that Grande Exports their cheese but you might call Julie Gruber/Grande Cheese Sales & Marketing to see what they can do for you. If they do not export you will need to make arrangements with an export broker to have them purchase the cheese, or have someone else purchase the cheese and forward it to your export broker for exporting it to you.
Julie Gruber can be reached at: <Julie.Gruber@grande.com>

Pizza Cheese / Re: Importing Grande cheese?

I really like the KD-8000 electronic digital scale. It will weigh up to 8000-grams in 1-gram increments which is usually close enough for me. This scale is available the Internet for about \$35.00.

Dough Clinic / Re: What scale to weigh ingredients on?

If I remember correctly we just covered something along these lines, maybe Peter remembers where it's at better than I do.

Peter, can you please weigh in?

Dough Clinic / Re: Any Rules of Thumb

Since all ovens are a law onto itself you will need to experiment with shelf position in the oven. The closer to the top of the oven that you position the shelf the more top heat you will give to the pizza. If the top is getting too dark move the shelf down a bit, if you have a problem getting enough bake to the bottom crust moving the pizza to a lower shelf position will bring it closer to the heat for a stronger bottom bake.

Dough Clinic / Re: Unsatisfying crumb

Fagilia:

What you are seeing is biochemical gluten development. We have discussed it here many times over the years, to bring you up to speed, there are two ways to develop gluten, one is by mechanical agitation of the dough either by machine or by hand.

In both cases this typically results in a more elastic dough. Biochemical gluten development takes a minimum of several hours of fermentation time to accomplish and the resulting dough has good gluten development while also being very relaxed and easy to open into a pizza skin. When making bread and pizza dough at home I typically stir (can't really call it mix) the ingredients together for just a minute or so or until the "dough" takes on the appearance of oatmeal. I then scrape the dough mass out of the bowl onto a lightly floured counter top, lightly oil the mixing bowl, lightly oil the dough and place it back into the bowl to ferment. If I'm going to cold ferment overnight or more I like to put the dough into bread bags as they are easier for me to manage in the fridge and I don't need to worry about forgetting to cover/lid the containers after several hours.

Neapolitan Style / Re: Too delicate hand kneaded dough with Caputo pizzeria flour

Additionally, screen marks like you are getting result from either allowing the dough skin to set too long on the screen before baking, or the dough is too soft for use on a screen. When we "deck" a pizza, what you are doing, we typically bake the pizza about 2 to 3-minutes on the screen and then transfer the pizza to the oven deck to finish baking. The reason why you had such a problem getting the pizza off of the screen was because the dough had not yet been seared on the bottom which might have been aggravated by a very soft dough. Seasoning your screen to a golden brown color will also help.

New York Style / Re: Screen Test

How long did you pre heat the oven for? If you pre heated the oven for the better part of an hour and you're still getting a lot of heat loss you will probably need to do two things:

- 1) Double the amount of IDY you're using to get more oven spring.
- 2) Increase the dough absorption in 2% increments to achieve a softer dough which will exhibit better oven spring characteristics.

As for the dough balls that you still have left, I'd let them go for another day or so before using them. The additional fermentation will give you a softer, more extensible dough that should give better oven spring characteristics resulting in a more open crumb structure.

Dough Clinic / Re: Unsatisfying crumb

Here's my take, the tapered side (nesting) pans make it easier to hold the dough up against the sides of the pan and they nest together taking up little more space than a single pan but the down side is that you need to have a pan separator to cover each pan. The straight sided (stacking) pans only need a cover for the top pan in a stack but dough absorption plays a bigger role in getting the dough to stay up against the vertical sides of the pan. You pays your money and takes your pick.

Stones/tiles/steel, Pans & Accessories / Re: Which 14 inch American Metalcraft deep pizza pan?

The fat encapsulated leavening system (sodium aluminum phosphate and soda) are encapsulated at the rate of 100%, meaning that equal weights of the SALP and soda blend are encapsulated in an equal weight of fat. Said another way, 4-ounces of the encapsulated leavening system contains 2-ounces of active leavening and 2-ounces of fat. The fat encapsulation prevents the soda portion from being prematurely reacted with acids formed as a result of fermentation, this would result in unreacted leavening acid (SALP) in the finished crust which will have a significant impact upon the flavor of the finished crust. During baking the

encapsulating fat melts off of the SALP and soda allowing them to begin reacting and forming carbon dioxide as the dough temperature reaches about 120F, since this is still before the starch is beginning to gelatinize (about 140F) it does contribute to oven spring when the yeast is in good condition, if the pizza (dough) has been temperature abused (freezing the pizza is the most common abuse encountered) and the yeast is damaged to some extent the chemical leavening system is still there to supplement the yeast in achieving a desired level of oven spring/leavening of the crust, at least to a point where it doesn't totally fail resulting in the customer bring it back to the store (customer is NEVER wrong) at least not the first time.

I've got a Technical Bulletin that I wrote on take and bake pizza that is available from AIB International <www.aibonline.org>

General Pizza Making / Re: Take and bake fail

The thing to remember is that pizzas bake from the bottom up. This is why you will often see oven tenders at some of the larger pizzerias, especially those with wood fired ovens, but with regular deck ovens too, lifting an edge of a pizza to peek under it to see if the crust is done. Generally, by placing the pizza lower in the oven you encourage the crust to bake faster resulting in less color on the cheese and by placing the pizza higher in the oven (further away from the bottom heat) the crust bakes a little slower while the toppings, especially the cheese get more heat and more color. To achieve the desired balance of bottom bake and top color (cheese color) you can manipulate the baking time and/or the baking temperature either with or without a baking/pizza stone or some other hearth material under the pizza.

I know that a lot of the frozen pizza manufacturers suggest baking their pizzas at a specific temperature until the cheese bubbles but that's not a very good measure for the bake of a pizza, then too, remember this is a frozen pizza we're talking about so expectations will probably be different.

New York Style / Re: How long?

Tay;

Going back to one of our earlier discussions, what you need to do is to experiment with allowing the dough to proof to different heights in the pan and then take the partially proofed pan of dough to the cooler for chilling. The dough will continue to proof in the cooler to some point and then slow down to the point where the dough will be stable for the day. What you need to do is to determine how much to proof the dough prior to taking it to the cooler (experimentation required). Once you find out what the "magic" time is you can proceed to proof the dough to that point and then put it in the cooler and use the dough directly out of the cooler this way the dough will always be correctly or nearly correctly proofed all the time during the day. This is the best way I know of to manage deep-dish doughs. Keep in mind that these now fully proofed pans of dough do not keep well overnight so you will need to incorporate the proofed dough into your new dough at the end of the day, or use it in some other manner so you won't need to throw it away.

Dough Clinic / Re: Proofing dough

Also, if the dough skins are opened and stored in the cooler on screens it is highly advisable to remove the skin from the screen, I just place a screen over the skin and invert it removing what was the bottom screen, which is now on top. This works well if you have a persistent problem with the dough flowing into the screen openings. When I open a T&B pizzeria we typically open the dough into skins, place on screens and take to the cooler where they are placed into a wire tree rack for

cooling. Once cooled (about 30-minutes) the skins are removed from the screens and stacked five high on a metal pan with a piece of parchment paper separating each crust, a piece of parchment paper is placed over the top skin to reduce drying. When an order is received a skin is removed from the stack, the top of the skin is lightly brushed with olive oil and dressed to the order. Some places like to use ovenable paper board trays like those from Pactiv <tmabus@pactiv.com> or M-Press <www.mpresspac.com> (think Papa Murphy's) while others prefer to use a piece of baker's parchment paper and a pizza circle. The parchment paper/ovenable tray stay with the pizza throughout the baking process. Note: The ovenable trays release the baked pizza better if lightly oiled before the dough skin is placed in the tray. It is also a good idea to use a fully prepared sauce or a thick sauce that has not been watered down. When you add water to the sauce it has a propensity to separate from the sauce upon standing through a process called synergysys. This free water will migrate down through the sauce where it will puddle at the sauce dough interface resulting in the development of a gum line upon baking. If you want to get a measure of how much different sauces are separating just put a tablespoon of different sauces on identical china saucers and allow them to set undisturbed for 60-minutes, you will see the water forming a ring around the sauce, the more water you see the greater the problems will be with a gum line.

By the way: The fat encapsulated leavening system used by the big chains is there to provide a back-up leavening system in the event the yeast leavening fails. How does the yeast fail you ask? When a consumer buys the pizza, gets it home and places it in the fridge for use on the following day, or several days later....it happens more often than you might think it does, and when it does happen the customer shows up at the store with the failed pizza, so we end up giving them another pizza (free). When the back-up encapsulated leavening system is used it pretty well eliminates this problem.

General Pizza Making / Re: Take and bake fail

The short answer is to:

- 1) Use a higher protein content flour.
- 2) Reduce the amount of fermentation the dough is subjected to.
 - a) Target for a lower finished dough temperature (at least 5F lower).
 - b) Reduce the yeast level by 20%.
 - c) Ferment the dough for a shorter time.
 - d) Reduce the dough absorption in 2% increments until you see an improvement.

Dough Clinic / Re: How to achieve a better spring/sponge in the pizza

I would suggest going with the HC-9000 series pan since they are dark colored hard coat anodized and do not require any special seasoning or washing care as the plain bright colored pans. However, if I was the one buying, I'd personally opt for the HC-5000 pan in dark colored anodized finish. I really like these pans because they are designed to be stacked one on top of another (self stacking) which is a great space saving feature when you start having pizza parties and want to make several pizzas. The stock number of this pan is HC5014 (this is a 1.5" deep pan).

If you don't want the self stacking feature go with HC9000 dark colored anodized finish pan with tapered sides (nesting) pan number HC90142 (this is a 2" deep pan).

You will probably want to pick up a round separator (to cover the pan(s) with. For the self stacking pans you will only need one separator but if you go with the

nesting pan(s) you will need one for each pan that you purchase. I'd suggest going with the 15" round separator for the 14" diameter pans. The item number is #18915.

I hope this helps.

Stones/tiles/steel, Pans & Accessories / Re: Which 14 inch American Metalcraft deep pizza pan?

Doing it like P.H., just put plenty of oil (peanut) in the pan, fit the dough to the pan, allow the dough to proof/rise in the pan for about 45-minutes (exact time will vary) dress to the order and bake at 475F (exact temperature may vary in different home ovens).

Newbie Topics / Re: Should I heat up my pan/oil?

Charles;

What is L-DMP?

Fairly thick screen?

You might try this:

Place the prepared dough skin on a piece of baking parchment paper before dressing. This way all the end used will need to do is to slide the pizza out of the box (fold down the front of the box) and place the pizza in the oven rack for baking. Decrease the dough absorption to not more than 62%

Increase the IDY to 0.375 to 0.4%

Good T&B pizzas typically have around 5% sugar to give the desired browning properties in a home type oven. If you don't want the sweetness imparted by the sugar try using dairy whey at about 7%, you will get the crust color development but without the sweetness.

After you open the dough into a pizza skin, place it on the parchment paper and then onto a pizza circle or piece of cardboard, brush the surface of the dough very lightly with olive oil and place in the cooler/fridge for about 45-minutes to thoroughly cool (you can leave it in the fridge for up to several hours if necessary or more convenient).

Remove preshaped skin from the cooler/fridge and immediately dress to the order, slide into pizza box and send home with the consumer.

Be sure to provide good baking directions for both gas and electric ovens.

I've got a number of dough formulas for T&B pizza dough posted in the PMQ Recipe Bank <www.pmq.com>.

General Pizza Making / Re: Take and bake fail

When it comes to suspension on a trailer I've found that independent torsion block suspension is far superior to a solid axle with leaf spring set-up as it handles rough roads and bumps much better with less impact transferred to the load in the trailer due to less trailer bounce.

You might also check with your regulations to see if there are any special licensing regulations for trailers carrying over a specific weight. Here in the U.S.(Kansas) if the trailer is carrying over a specific weight (I don't know what that weight is)and if it is used for work licensing of the trailer is required.

Pizza Ovens / Re: DIY PIZZA TRAILER

A dough that is weak due to over fermentation is VERY RELAXED, so much so that it can be difficult to pick up a formed skin without distorting it or having it just stretch all out of shape. If the dough is REALLY over fermented the dough will just begin to fall apart, in some circles this is also referred to as "rotten" dough. It should also be remembered that dough which is slightly over fermented is usually

rather "bucky", meaning that it exhibits resistance to any kind of deformation and when it is forced out the dough appears rather rough and some what "knotty" (bumpy).

Dough Clinic / Re: Is this what Normally the dough looks like at day 3?

As with essentially all of the commercial oven manufacturers you should be able to contact the manufacturer and ask to speak with a field service technician or someone who walk you through the troubleshooting procedures and tell you what the code that you're getting means. In the meantime you might also go to the PMQ web site <www.pmq.com> and log into the Think Tank and make a post to George Mills. George is an equipment man and he might be able to shed a little light on the problem. George is also pretty quick to respond to posts directed to him so you should be able to get an answer from him pretty quickly.

Pizza Ovens / Re: Help: Conveyor Belt Oven Not Working!

Derek;

The only changes I might suggest to the formulation based on your dough management would be to reduce the salt to 1.75 or 2% and reduce the IDY to 0.375 to 0.4% and take the dough directly to the cooler as opposed to letting it set out for 10-minutes.

BTW: You didn't mention dough temperature, remember, without time and temperature control you cannot have effective dough management. You should be looking for a finished dough temperature of 80 to 85F immediately after mixing. You may need to experiment a little to find the exact temperature range that works best for you, but once you find it do everything possible to keep every dough as close to it as possible. I like to use the 80 to 85F range and target the 80F temperature that way when you begin to see the temperature rise above 80F you know you've go to decrease the temperature of the dough water to stay under the upper limit of 85F in this case. When changing water temperature in response to increasing dough temperature decrease the water temperature in 5F increments and you should be able to stay in the target temperature range.

Shop Talk / Re: Pizza Restaurant Opening Soon, Need your opinion of my dough recipe and more!

If the dough is collapsing it will not support the weight of the toppings resulting in a very dense, heavy finished crust.

You're correct as to why the garlic bread is rising more than the pizza crust. Next time you go to make a pizza just open the skin and pop it in the oven like a pita, you will see a lot more oven spring, probably too much. That will give you an idea of how the toppings are impacting oven spring.

Dough Clinic / Re: How to achieve a better spring/sponge in the pizza

Probably not, unless your dough is collapsing, then going to a higher protein flour might help. If your dough is not collapsing going to a higher protein flour will actually reduce oven spring.

BTW: If your dough is collapsing it is better to find out why it is collapsing and address that issue rather than going to the expense of changing over to a higher protein flour.

Tom Lehmann/The Dough Doctor

Dough Clinic / Re: How to achieve a better spring/sponge in the pizza

Using a lower protein content flour or fermenting the dough more will reduce dough memory/snap-back.

Dough Clinic / Re: Is this what Normally the dough looks like at day 3?

Try working the dough out so there is less dough at the outside edge of the skin. I normally work mine so there is no more than 1/4-inch of dough at the edge forming a bead which becomes the raised edge when baked. If you go to the PMQ web site <www.pmq.com> I believe I have a video showing the dough being opened from a dough ball.

Dough Clinic / Re: How can I avoid the overly puffy crust?

I would also suggest adding 2% sugar to the dough formulation to help get the browning reaction started in the dough. This will not impact the flavor of the finished crust, especially with 24-hours or more fermentation, but it will help to improve the crust browning characteristics.

New York Style / Re: My process to cook my pizzas. I am not getting the expected results. Help.

Did you cover the container right away after putting the dough in it and placing it in the fridge? If so, that might explain what appears to be excess fermentation. Try leaving the container uncovered for 3-hours in the fridge before covering it. With that said, What is correct fermentation? My definition is the amount of fermentation the dough needs to provide the desired usable refrigerated dough life, handling properties, baking properties, finished crust characteristics, and flavor profile. In short, if it works for you, and gives you a finished crust that you like/want, it's right for what you are doing the way you are doing it. Just make sure you have documented what you did so you can come back to it and make it again later, now you can begin experimenting with different levels of fermentation (if you want to) to see how it impacts the dough and finished crust, you never know, you might find something that works even better for you and that you like even more. That's the fun of experimenting with pizza.

Dough Clinic / Re: Is this what Normally the dough looks like at day 3?

How are you managing your dough? Dough formulation and dough management are tied in together to a great extent.

Shop Talk / Re: Pizza Restaurant Opening Soon, Need your opinion of my dough recipe and more!

I think what you are asking for is a firmer bite to the pizza. The easiest way to achieve this is to reduce the baking temperature and bake the pizza longer. I would suggest reducing the baking temperature by 25F and baking longer. How much longer I cannot say, just bake the pizza until it looks right.

Dough Clinic / Re: How to achieve a better spring/sponge in the pizza

Sounds to me like the flour is too strong, insufficient dough fermentation, or a combination of the two.

How long is the dough being allowed to ferment? What is the finished dough temperature? And seeing the dough formula would help a lot.

Dough Clinic / Re: Pizza on steel

You did a great job Norma!

Congratulations!!!

Now you've got great pictures to hang up at your stand and a trophy to go with them!

Chitchat / Re: Caputo Cup 2016

If you go to the PMQ web site <www.pmq.com> and look in the RECIPE BANK you will find a home made pizza dough "recipe" that I've posted there along with the complete procedure that might help you get started.

Newbie Topics / Re: need to be pointed in the right direction

Depending upon your total mixing time you might want to add the oil a little sooner to ensure thorough incorporation. When added very late in the mixing process it is usually difficult to get the oil incorporated into the dough as the oil just coats the outside of the dough allowing the dough to cling to the agitator and just go for a ride around the inside of the bowl. I've found that the best time to add the oil is just as all of the flour is picked up off of the bottom of the mixing bowl (usually around 2-minutes), then just pour it all in at once and it will incorporate just fine.

Actually, plastic wrap or my personal favorite (plastic bags, like bread bags or "Food Bags") works fine, but the trick is to completely oil the dough ball just prior to wrapping in plastic or bagging it. Just invert the bag over a bowl of dusting flour and the dough ball just plops out, still nice and round. They are not as round when wrapped in plastic wrap as they tend to be deformed a bit when being unwrapped. Also, the dough looks to be very sticky when removed from the dough box, do you cross-stack your dough boxes?

Dough Clinic / Re: Dough is to sticky

Too much water can make the dough too soft and fluid to handle as well as making the dough more difficult to peel into the oven, and if the pizzas are baked on screens the soft dough can flow into the screen openings causing the dough to bake into the screen openings making it impossible to remove the pizza from the screen. As dough absorption is gradually increased you will see that there is more oven spring and a more open porous crumb structure. Resulting pizzas will be progressively more crispy until a point of absorption is reached where the dough is so weakened by the additional water that it collapses in the oven.

Too little absorption can make the dough more difficult to open into skins as well as resulting in excessive snap-back/dough memory during and after forming. As the dough absorption is decreased the dough will become more difficult to open into pizza skins, oven spring will be decreased, you will see an increasing problem with bubble formation if the dough is not docked.

In the mixing bowl you will observe that the dough mixes better and faster to a point with increasing absorption but when the absorption becomes excessive the dough will not clean off of the sides of the bowl until the dough has been mixed significantly longer than normal, and even then, when the dough is removed from the bowl it will be a sticky mess to handle and work with. With decreasing dough absorption you will see that the dough cleans off of the sides of the bowl faster, but at the same time it will take longer for the flour in the mixing bowl to be fully hydrated and incorporated into the dough. As the flour continues to hydrate and gluten is formed the mixer will strain to drive the agitator through the dough, this can reach a point where the thermal overload switch is triggered and the mixer shuts off in an act of self preservation. Some mixers do not have this thermal overload feature and in that case the mixer can be damaged or the agitator broken as it tries to drive through a very stiff dough.

With regard to the finished pizza, excessive dough absorption can be a cause for developing a "dreaded gum line" but when the absorption is so high as to result in a gum line dough handling problems are a bigger issue. With decreasing dough absorption the restricted oven spring can result in insufficient bake out which is a major contributor to excessive toughness in the finished pizza. Additionally, the

restricted oven spring can result in the finished crust being thicker than desired due to snap-back/memory which in turn results in the finished pizza having what some might term as a "bready" eating property.

This is not to say that pizza cannot be made from very high or very low absorption doughs, it can but those pizzas will be quite specialized and require possibly different formulations, baking methods, dough management and handling procedures to produce their representative types of pizza.

Dough Clinic / Re: Low hydration, high hydration. How does it effect finished pizza

AWESOME!!!! :) :) :

Congratulations Norma!!!

WAY TO GO!!!

General Pizza Making / Re: NORMA WON FIRST PLACE FOR CAPUTO CUP IN NYC!!!

Rather than just a couple of percent, go with 5% and add a number of different types of flour or grains, just remember to use a soaker to get your dough absorption right. What you are talking about is what we refer to as a multi-grain type flour, Internationally it is referred to as a "composite" flour.

Dough Clinic / Re: Flavor Enhancing Flours

I have the KD-8000 described above. The "mode" button on top of the scale allows you to work between metric and U.S. measures with ease. I've had mine for almost two years now and have yet to replace the batteries, and when I do, they're cheap. The scale is durable and very portable(light weight), it even has a hard flip up cover over the key pad to protect it. Best of all, they're about \$40.00 from Amazon.

Prep Equipment / Re: Scale that doesn't eat batteries?

I am in full agreement with Pete on the ADY in cold water. I would suggest hydrating/activating the ADY in four to five times its weight of warm (100F/38C) water and allowing it to hydrate for about 10-minutes, then stir well and add it to the cold water in the mixing bowl.

Dough Clinic / Re: Dough is to sticky

TexMex;

Send me your mailing address and I'll pick one up and send it to you.

<thedoughdoctor@hotmail.com>

Prep Equipment / Re: The best tin/can opener in the world is?

I carry a P-51, it's bigger and easier on the thumb. :)

Prep Equipment / Re: The best tin/can opener in the world is?

The last paragraph in #3 should be noted as we have said many time that adding yeast to a sourdough formula can result in the loss of the desired flavor in the finished product. One other thing that was not mentioned is the fact that there are other acids formed during the fermentation process (primarily acetic and propionic) which also play an important part in determining what the finished flavor profile will look like. When fermenting doughs at different temperatures the balance between these acids can be changed resulting in different flavor profiles. This was somewhat alluded to in the discussion of the affect of temperature on LAB. When the LAB is taken out of the equation a different finished flavor profile is the result. What it all seems to boil down to is what flavor profile are you looking

for, and if its that of a sourdough (especially a San Francisco sourdough) don't refrigerate the dough. It's also good to probably keep in mind that there are many different strains of LAB each one produces its own unique flavor (just look at what it does in cheese manufacturing and yogurt production) and exhibits different conditions for growth. This is why the study of fermentation is so fascinating. By the way, bread flavor is the one flavor that flavor scientists have NEVER been able to manufacture, it's that complex.

Neapolitan Style / Re: Fermentation: a science-based look suggests RT is better for flavor

There are two different approaches to opening metal cans, one is from the top down and the other is from the side inward. Here in the U.S. there are significant food safety concerns over those that open from the top down as they can introduce micro-organisms into the contents from the top of the can and they are also known to introduce small metal particles too. Those that open the can from the side do neither of these nasty things. We have commercial side opening can openers and also recently they have been advertising on television electric side opening openers for the consumer market, "and if you order within the next 10-minutes we'll send you an additional opener absolutely free, just pay the additional shipping and handling" They might even be running the advertisements on your local TV stations too.

In any case, you should be able to find a side opening opener locally as they're really not all that new anymore.

Prep Equipment / Re: The best tin/can opener in the world is?

Yael;

Bran contains no gluten to speak of so it should not be counted as a flour, same for rice flour. In your example "Total Hydration" are you referring to milk 30% as 30% of the flour weight as milk? This would be incorrect as you only include the water content of the milk (not the total of the milk) in the absorption value. "Total Fat" is correct. "Other Addings" is also correct even though there is honey included in it since the total water content of the honey is less than 2% of the total flour weight, and yes, that is where the bran should be shown.

General Pizza Making / Re: Baker's percentage for the flours

What do your pans look like? What color are they, bright and shiny or are they well seasoned and dark in color?

Do you oil or grease the pans in any way?

One thing that I'm a bit confused on is that you say you are trying to make a N.Y. style pizza but you are allowing the dough to proof/rise in the pan prior to baking which is more like one would do for a pan style thick crust pizza.

Dough Clinic / Re: HELP! My pizzas are coming out the oven with heavy gum lines

Excellent point Peter.

Two ingredients that are occasionally encountered where this needs to be done are when liquid milk (88% water) and liquid whole egg (75% water) are used in the formulation. While not really very common in pizza dough formulas these two ingredients are commonly encountered in certain types of bread formulas as well as most pastry dough formulas where we also see liquid sugars being used too which are mostly about 20% water all of which have to be accounted for and included (only the water content) in the dough absorption percentage. Kinda confusing at first, but when you step back and look at it, it begins to make sense.

For me personally, I don't normally take the moisture content of an ingredient into account until the water contribution of the ingredient reaches or exceeds 2% of the flour weight....that said, if a formula has low percentage amounts of milk, eggs and let's say honey, you might want to calculate the total water contribution from all of those ingredients and if the sum equals or exceeds 2% take them into account when figuring the dough absorption percentage. The reason why I use the 2% rule is because in my experience, most doughs will tolerate a 2% variation in dough absorption without significant impact upon the dough or finished product, truth be known, normal variations in the flour that we use can easily account for a 2% or more variation in dough absorption. This is why commercial bakeries rely on Farinograph data supplied by the flour miller to calculate their total dough absorption.

General Pizza Making / Re: Baker's percentage for the flours

Not a bad start, congratulations.

The next time you make it you might also try sprinkling some shredded Parmesan cheese over the dough just before placing it in the oven. I get a little carried away when I make mine by pressing such things as sun-dried tomato pieces, sliced black olives and garlic slices into the dough. The options are endless, a friend of mine even likes me to put anchovies on his...go figure!

One other thing, you might try a darker colored cookie sheet to enhance the bake, your's looks pretty good, but the dark colored pans just bake better in most ovens.

Focaccia Style / Re: First time making focaccia

Yael;

It is not recommended that the oil be included in the total absorption value BUT it should be kept in mind that it will affect the dough viscosity in a way similar to the way water does, so the amount of oil being added to the dough can influence the amount of water (absorption) added, especially if one wants to keep the immediate rheological properties of the dough similar. The reason for not including the oil in the absorption value is because oil/fat has a far more reaching affect upon the dough and finished product quality characteristics than water does. With regard to flour blends, only gluten forming flours should be considered as "flour" or part of the flour blend, for example, corn flour would not be included in the flour blend, instead it would be shown as an ingredient just like salt, sugar, oil, etc.

General Pizza Making / Re: Baker's percentage for the flours

For those not familiar with how to calculate the bakers percent of each flour when you have more than one flour, this is how it's done:

- 1) Add up the weight of all of the flours, and make a note of the weight.
- 2) Divide the weight of each flour by the sum weight of all of the flours and multiply by 100.
- 3) Repeat this for each flour. When you're finished the sum of the percentages should equal 100.

Example: My flour blend consists of 2-pounds of "pizza" flour, 8-ounces of whole-wheat flour and 6-ounces of rye flour. The total weight of all three flours is 46-ounces.

Pizza Flour: 32 divided by 46 X 100 = 69.56%

Whole-Wheat Flour: 8 divided by 46 X 100 = 17.39%

Rye Flour: 6 divided by 46 X 100 = 13.04%

Total/sum of all the flour percentages: 99.99 (if the decimals were taken further out it would have equaled 100%)

To express the dough absorption when these amounts of these flours are used you

need to find the absorption of each flour independently (read my ramblings on whole-wheat flour/dough to see how it's done) then add up the weight of the water used for each flour and divide the sum by the total flour weight (sum of all three flours) this will be your dough absorption.

General Pizza Making / Re: Baker's percentage for the flours

If you're going to be baking above the 500 to 550F range you may need to tent for part of the bake time but if you will be baking at 550F or less you probably won't need to tent. Crust color and internal temperature will dictate if you need to tent or not.

Other Types / Re: calzone cook temp and time?

I would start at 500F with a single calzone to bench mark with and then make adjustments from there as dictated by internal temperature and crust color. The double panning (like an AIR Bake pan) should work well. If your oven is hotter than this and you need to bake a few pizzas at the same time, keep the oven at your pizza temperature and tent the calzones with a piece of foil for a portion of the bake, then uncover just long enough to achieve a nice golden crust color.

Other Types / Re: calzone cook temp and time?

We have done a lot of calzones over the years and have found that they generally need to be baked slower than pizzas if you want the center to be nice and hot with the cheese melted. For this reason when I'm baking on any type of deck I like to bake on a pizza screen or on a double pan so as to prevent the bottom surface from getting too dark while the center is still heating. How long to bake? The best way to assess when a calzone is fully baked is by internal temperature, when the internal temperature of the calzone reaches 160F or more, and the crust is to your liking, the calzone is done, once you know the time for one calzone you can pretty well go with time for the rest of them if they're reasonably close in size and filling weight.

Other Types / Re: calzone cook temp and time?

With excessive fermentation you get excessive acid formation in the dough which greatly inhibits crust color development....I think the problem is too much fermentation. I would either reduce the yeast level or reduce the total fermentation time. As an experiment I'd cut the total fermentation time by 50% just to see if that improves the overall crust color. If it does you at least know where the problem is.

Neapolitan Style / Re: Improving the crust color?

There is no way to predict the results as so much depends upon the quality/strength of the flour used as well as the finished dough temperature and how well the dough was managed over its time in the fridge. Best way to answer your question would be to say "try it". If the dough was well managed it will most likely still perform. If the dough balls collapse, re-round them and allow to rest until the dough balls are once again extensible enough to be opened easily. Due to the longer fermentation time you may find that the baking time might be a bit longer or the crust color might be a little lighter due to the additional acids formed during the extended fermentation period.

Dough Clinic / Re: Cold ferment duration

Lookin' good.

General Pizza Making / Re: Pizza Pocket Dough Formula?

Just for starters, the dough absorption is varied depending upon the type of pizza being made, classic examples are a New York style with dough absorption in the 60% range and a cracker style with dough absorption in the 30 to 40% range. Then there is the absorption property of the flour itself. Some flours will require that you use a higher absorption or lower absorption than others, all flour is NOT the same, if you use a dough "recipe" or formula from one source using a specific flour that same recipe/formula may not work using a different flour, this is especially true when we cross borders into different countries where different types of wheat are used to make the flour and there is also a good chance that the milling practices will be different which can lead to significant differences on dough absorption as well as consistency and texture of the resulting dough, and then there is the need to adjust the dough absorption to facilitate the method we're using to open the dough into pizza skins, for example, if you're using a pie pin or rolling pin the dough may be easier to manage if it is made with a slightly lower dough absorption while a hand tossed dough generally works better using a slightly higher dough absorption, a table/bench stretched dough is almost always easier to manage when made with a higher absorption.

In most cases though the dough absorption will be varied depending upon the style of pizza being made. The type/heat/baking surface of the oven can also play a roll in the dough absorption used, for example, a very hot oven with a stone deck can utilize a higher absorption dough better than a lower temperature oven while baking on a pan.

I don't mean to confuse or overload you with all of this but as you see dough absorption is highly variable and subject to change due to a lot of different factors. As a beginner I would suggest that you reduce the amount of water (dough absorption) you are using to a point where you can more easily manage the dough and then begin making pizzas. Once you have that mastered, you can begin experimenting with more or less absorption to see how it impacts YOUR dough. Keep in mind that in most cases a just mixed dough will be sticky and it may take an hour or so of fermentation time for the flour to fully hydrate thus reducing the stickiness. If you go to my web site <www.doughdoctor.com> I've got a home made pizza dough "recipe" posted there that you might experiment with too.

Welcome to the club!

Newbie Topics / Re: Dough Hydration

If you exchange "sugar" for malt the impact upon the crust color will be essentially the same. Both are considered forms of sugar which contribute to crust color development. If you bake at too high of an oven temperature the crust color will form before the inside (crumb portion) of the crust has had a chance to thoroughly bake. Think of it like one would sear a steak on a hot griddle. The steak is nicely browned on the inside but still raw on the inside. This is why most thick crust/deep-dish pizzas are baked on some type of a baking platform in a deck or stone hearth oven. The bottom gets color before the inside of the pizza is properly baked. If the pan is placed on a screen in the oven there is an air gap between the deck and the pan to slow heat transfer which allows the center of the pizza to bake more thoroughly while controlling crust color development on the bottom of the pizza. Which ingredient is responsible for making a softer textured crumb? The fat. This can either be in the form of oil or shortening/margarine/butter/ lard, etc.

New York Style / Re: How to achieve more browning and softness in my pizza dough

Adding the additional malt plus the 4% sugar that is already in the formula will contribute to additional sweetness of the finished crust.

[New York Style / Re: How to achieve more browning and softness in my pizza dough](#)

Bake at a higher temperature?

[New York Style / Re: How to achieve more browning and softness in my pizza dough](#)

By the way, I should add that even when I'm opening the dough balls into skins for the calzones I like to use a pie pin as it is easier to get a uniform dough thickness resulting in better shaped pockets, and don't forget to cut one or two vent holes into the top just before baking. A scissors makes an attractive delta cut into the top of the sandwich.

[General Pizza Making / Re: Pizza Pocket Dough Formula?](#)

Tay;

Try this:

- 1) Take your mixed dough directly to the bench for scaling and balling.
- 2) Place into dough boxes and wipe the top of the dough balls with a little salad oil.
- 3) Take boxes of dough to the cooler for cross stacking (about 2.5 to 3-hours) just be consistent with the time.
- 4) Down-stack the dough boxes and kiss them good night.
- 5) On the following day remove a sufficient number of boxes of dough to fill all of your deep-dish pans.
- 6) Allow the dough boxes to remain covered at room temperature until the dough balls reach a temperature of 50 to 55F, then begin opening the dough balls into pizza skins.
- 7) Place opened skins into prepared (oiled or greased) pans.
- 8) If the pans are stack-able stack them or place a pan separator between the pans and stack them on the side out of the way.
- 9) Allow the dough to rise in the pan for the predetermined time that is correct for your dough and shop conditions (usually about 30-minutes or a little longer). Remember, we discussed how this is done previously.
- 10) Take the pans of partially proofed dough to the cooler for storage. The dough will continue to proof in the pans while in the cooler to a specific height and then tend to stabilize (not proof any more).
- 11) Check the height of the panned dough, once it has reached the desired height (about 1/2-inch or a little more depending upon how thick you want the finished crust to be).
- 12) As soon as the dough has reached the desired height, check the temperature of the dough, it should be around 45F. You can now begin using the panned dough right away, directly out of the cooler or at any time during the day.
- 13) Any unused (unopened) dough balls can be saved in the cooler for up to 3-days, four in a pinch. Any unused fully proofed dough in the pan(s) probably should not be carried over from one day to the next as there is a better than even chance that they will begin to collapse under the weight of the toppings on the second day. Since every shop is different, try it to see if they will work for you on the second day, if they do, go ahead and use them if you are happy with their performance, if not, strip the proofed dough out of the pans and add it back into new dough as you begin mixing. The old dough can be added to the new dough at the rate of 15% of the weight of your new dough. If you have more old dough than you can add to new dough just make something different from the old dough such as bread sticks, cinnamon sticks (great when served with a side of powdered sugar icing), or try rolling the dough out very thin, brushing with water and sprinkling on a cinnamon-

sugar mixture, cut into squares and bake until crisp) I'm sure you get the idea. 14) Keep note of how many pizzas you are selling daily and at what time they're being sold then try to manage your dough in such a way so as to have a reasonable number of proofed pans in the cooler ready to go but not an over abundance.

Dough Clinic / Re: I need a method to be able to make pan style pizzas straight from the cooler

While you can just pull a piece from the bulk fermented dough the crust always comes out somewhat more dense and tougher/more chewy than if you ball it and more gently open the balls into skins for the pizza pockets/calzones, plus when you just "grab and form" you will need to trim the dough to get something resembling a circle but when you use a dough ball you can open it into a circle pretty easily without any trimming necessary, try it both ways to see what you're most comfortable with and to see which method gives a finished product most to your liking.

General Pizza Making / Re: Pizza Pocket Dough Formula?

Tay:

Haven't we been discussing taking the pre-proofed dough (pan risen) directly from the cooler to the prep station and oven?

Dough Clinic / Re: I need a method to be able to make pan style pizzas straight from the cooler

Davomora:

You might also try posting in the PMQ Think Tank at www.pmq.com and address the post to "Daddio" Richard is an operator in Canada and I'm sure he can provide some additional insight too.

New Forum Members / Re: Minimum capital required to set up a pizzeria in Canada

Tay:

All of the big chains use a custom made sauce, specific to their flavor profile and PRICE POINT.

When I'm interviewing a new pizzeria owner I always suggest that they do something different from what everyone else is doing. How do you compete with the bog box chains? You can't compete on price, consistency or consumers perception based on advertising, so how do you compete? Easy, you do something that they can't/don't do. Dare to be different! If everyone else has a smooth sauce, offer a chunky sauce, if everyone else uses dried basil and oregano, use fresh basil/oregano, if everyone else puts the cheese on top, try putting it on the bottom, offer types of pizzas that are not otherwise offered, like a fish pizza on Friday, chicken BBQ pizza, how about a tropical chicken pizza with coconut and mango, offer a fresh fruit dessert pizza with cream cheese or Ricotta and egg mix for the sauce and add fresh fruit for the toppings (we do it all the time and everyone loves it), offer different types of pizzas to pick up business on your slow night (Monday?). On of my personal all time favorites for a sauce is to use nothing but thin sliced fresh tomato. Nobody else is doing it so the pizzas are perceived as being "different" not like everyone else's pizza, and in most places different is good.

That's the strong point of pizza, it has been able to evolve over the years to meet the expectations of our changing population.

I realize that you might not have year around access to fresh tomatoes, but can you get whole crushed tomato with the skin? If so, give it a try just as it comes from the can. The greatest flavor contributor to the tomato is in what is referred to as the

"Velvet" which is between the skin and the meat of the tomato. This is the good stuff that is responsible for the wonderful flavor you get when you bite into a fresh, vine ripened tomato. Here in the U.S. we can get this product from Stanislaus (sorry, they don't export) in the form of their 7/11 Ground Tomatoes, but you might be able to source a similar product to try.

Dare to be different!

Sauce Ingredients / Re: Peeled tomatoes or pre made pizza sauce

Tay;

The procedure that you have outlined is similar to that used by P.H. when they made their first departure from making a thin, cracker type crust. This was their first venture into making a pan style pizza which they called their "Thick and Chewy" (this was back around 1969), I had that product and I can say for sure, it was NOT thick and chewy, it was thick and tough. How tough you ask? It was so tough eating that I had to take a break from eating the pizza after my first slice to rest my jaw muscles, other than that, it was a good pizza. Also, when making deep-dish pizzas you have to remember that the crust now has a much greater influence on the entire pizza since there is so much more crust with a deep-dish pizza than with a thin crust pizza. So in addition to textural properties the flavor of the crust is now more important too, and that flavor along with the desired tenderness comes from fermentation. When properly managed, you can keep dough balls in the cooler for three days in a pizzeria and four days in a pinch. The 24-hour cold fermented dough is also better leavened (for improved crumb porosity) and much easier to open than dough that is just out of the mixer, but once the dough has risen in the pan, it should be used within the same day or there will be a possibility that the dough could collapse under the weight of the ingredients on the following day. I've always believed that when you're operating a pizzeria failure is not an option, it happens at the most inopportune times and in almost every case it will cost you in either money (a replaced pizza) or consumer confidence, this is why I always hedge my bets against anything that can result in my pizza failing when I'm dealing with a pizzeria, as the old saying goes "better to be safe than sorry". There is never any need to waste dough, depending upon what the problem is with the dough it can always be made into something else, bread sticks, cinnamon sticks, cinnamon chips, garlic knots, etc. or incorporated back into fresh dough.....waste not, want not.

Dough Clinic / Re: A question about storing dough

Tay;

This is why I say to allow the dough to remain out of the cooler at room temperature until the dough balls reach an internal temperature of 50 to 55F. Once you have determined what that time is you can go by time after that, just checking the dough ball temperature occasionally to make sure you're still on track. You really can't effectively speed up the conditioning of the dough after it is removed from the cooler. Solution: Find out how long it will take for your dough to rise to the 50 to 55F temperature after it's removed from the cooler, and then have someone come in and pull the dough at that time so it is properly conditioned and ready to use when the store opens. It usually takes at least a couple of hours to prepare the store for opening each day, final wipe down, box building, prepping the toppings, starting the oven, just getting things ready to go in general takes two hours or more so this really shouldn't prove to be a problem unless you have some mitigating circumstances.

Dough Clinic / Re: Making pizza dough for my pizza shop, debugging

Danny;

IDY only needs to be hydrated, it will "self activate" about 20-minutes after that. ADY needs to be hydrated in 95 to 100F water for about 10-minutes for both hydration and activation. Compressed yeast is ready to begin fermenting once it is allowed to warm to 50F, but like IDY it also has a 20-minute lag phase between time of hydration and when it actually begins to vigorously ferment. You can get around the 20-minute lag phase common to IDY and CY (compressed yeast) by putting them into suspension in about five times its weight in warm (95 to 100F) water.

Dough Clinic / Re: ice cold water to make dough

Tay;

As for letting the dough set out at room temperature after removing the dough from the cooler, the correct length of time is not necessarily one hour, the correct length of time is whatever it takes in time for the dough balls to reach an internal temperature of 50 to 55F. Hate to say it but the solution is to find out what that time is and then have someone come in early, pull the dough out of the cooler and then begin prepping pans and toppings for the day. Once the dough reaches 50 to 55F open it into skins and place them into the pans to proof. It doesn't do any service to the dough or your customers to proof it at room temperature, sheet it and then place it in the pan for dressing and baking as the dough will be significantly more dense and chewier than it would if it were final proofed in the pan for the better part of an hour, or more before dressing and baking.

Another option that you might consider is, at the end of the day, proof the dough to a predetermined height in the pan (as P.H. used to do) and then place the pans of dough in the cooler overnight where they will continue to rise to your predetermined full proof height during the night. Use lids or pan separators if your pans don't self stack and seal. The dough should be ready to use the following morning. The down side to this method is that it takes more room in the cooler and a whole lot more deep-dish pans.

Dough Clinic / Re: A question about storing dough

Tay;

No, it is not advised that you put the unused dough balls back into the walk-in after they have been allowed to warm to 50F or higher. Due to the change in density of the dough it will be all but impossible to slow the fermentation rate of the dough in the cooler, this is why it is recommended that you proceed with partially or completely opening the dough balls into skins, placing them on pizza screens which are then placed in a wire tree rack and stored in the cooler (be sure to leave the rack UNCOVERED for 20-minutes, then cover the rack with a food contact approved plastic bag. The skins can be stored in the cooler for the remainder of the day in this manner. To use the skins, remove from the cooler, and allow to set at room temperature for 20-minutes, then begin using in your normal manner. Do not hold the skins over from one day to the next, instead incorporate them into your next batch of new dough at a rate not to exceed 15% of the total new dough batch weight. For example, if you make your dough with 50-pounds of flour, the total batch weight will be about 80-pounds, 15% of 80-pounds is 12-pounds, so you can add UP TO 12-pounds of old dough (pre-opened skins) to your new batch of dough. Just add the skins to the dough immediately after you add the oil and mix as you normally do.

Dough Clinic / Re: A question about storing dough

G.R.:

What?

You don't measure the temperature of each dough before you take it off the mixer?
:)

Dough Clinic / Re: ice cold water to make dough

I've heard of Cuppone ovens, they seem to be a pretty reputable company but that's all I know about them.

Pizza Ovens / Re: Electric pizza oven

Dahlen ? (Sweden) probably makes some of the best electric ovens that can be had. They are very popular in all sizes throughout Europe and because gas is such a rarity in Europe, they do a very good job with their electric ovens, I'm not even sure if they even make any gas ovens.

Pizza Ovens / Re: Electric pizza oven

TAY;

12.3% protein is a good protein content for the type of pizza that you appear to be making especially in a retail application. It's low enough to give you a tender eating crust while it's high enough to provide the necessary tolerance to abuse that the dough will receive in a retail setting. If you take the sum of the water and oil you get a total of 63.8 which some like to think of as the "total absorption equivalent" (TAE) meaning that your dough should be about as soft as a dough made without oil but with 63.8% water (absorption). I would think that this is about as soft of a dough as you might want to use in your application. The dough is sufficiently soft to rise/proof in the pan to provide the desired lightness and tenderness to the finished crust while still exhibiting sufficient strength to support the weight of the toppings. Since you are at what I would consider the maximum for dough softness, if you should find that the center of the pizza is or should begin to collapse under the weight of the toppings, reduce the water in 2% increments, you should correct the problem in one or two reductions.

Dough Clinic / Re: Flouring dough balls before rolling them out for pan style pizza's

We typically don't think of sourdough as an improver since it alters so many of the dough/crust characteristics. We look at "improvers" as ingredients designed to address specific dough or finished product issues/problems without imparting significant extraneous taste, aroma or color characteristics to the finished product. One of our more common "natural" improvers is milk, either dry milk or liquid milk. The calcium content of the milk strengthens the wheat gluten making for a stronger and somewhat drier dough that is easier to handle. While milk does impact both flavor and color of the baked product, at the levels used in this specific application, 2 to 3% dry milk solids (liquid milk is seldom used anymore) there is essentially no impact upon the finished product characteristics.....BUT in pizza applications where we are baking at much higher temperatures than most other baked (bakery) products the mere presence of milk in the dough can result in a difference in crust color development, to a great extent, the same can be said for egg/egg yolk especially. In this case the improver effect comes from the lecithin content of the yolk which can help in the emulsification of fat and water which can be beneficial with high absorption doughs.....BUT again in pizza applications it will impact the finished crust color even at low levels, so while we do have a few "mighty few" so called "natural improvers" to work with, we have even fewer that are suitable for pizza applications. The main natural improvers that we see which have application in pizza are deodorized vegetable powders (onion and garlic) and

"dead yeast" (glutathione) both of which function as dough relaxers to reduce dough memory/snap-back when it becomes a problem. I know that some will argue with me saying that we do have a lot more natural improvers, but then it all depends upon ones definition of "natural". I like to think of "natural" as something that has received minimal or no processing, probably much along your own views of "natural".

Dough Clinic / Re: Dough Improver? Does it make a difference

TAY;

Oh boy! Flour is not just flour, the flour that you use in making pizza depends upon a number of things:

- 1) Type of mixer/how the dough will be mixed.
- 2) Dough management procedure in use.
- 3) Type of pizza to be made.
- 4) Finished crust characteristics being sought.

We did a study on different types of "pizza flour" a number of years ago and what we found was somewhat amazing. "Pizza flour" is not a standardized product so there is nothing that defines what it is or should be. We found that "pizza flour" ranged from a low of 10.2% protein content to a high of 14%, that's just about the full protein spread of all non-pastry flours produced! We actually found much better consistency between brands of "all-purpose" flour and "H&R flour" (hotel and restaurant) with excellent consistency between different brands of "bread flour", so much so that you could go to a flour supplier and request their counterpart to a competitor's specific flour by name and get a flour with very similar protein and performance characteristics. Why the great variation in pizza flours? Simple, pizzeria operators are all over the board in what they think they want in a flour, so if a company happens to sell a specific flour to pizzeria operators that flour eventually becomes their "pizza flour". This is why when I discuss flour it is always in terms of protein content which is easy to find out, it will either be shown on the bag as so many grams of protein per 100-grams of flour or a quick visit to their web site will give that information too.

Now, if you are referencing the flour that is used as a dusting flour, that's a whole different "kettle of fish", in that case anything but a pastry flour will work well. Pastry flours are not recommended as they exhibit a nasty habit of wanting to clump and cling to the dough rather than just lightly coating the dough. When I open the dough by machine as you are I just recommend using the same flour that was used in making the dough as it helps to keep things simple, but if the dough will be opened by one of the hand forming methods I typically recommend a blend of equal parts of your regular flour, semolina flour and fine corn meal this same blend also serves as my peel dust too, with that said, if you ask 50 different operators what they use you will get no less than 50 different answers.

Dough Clinic / Re: Flouring dough balls before rolling them out for pan style pizza's

3P;

I'd suggest going straight from the mixer to the bench for scaling and balling, then into the bags and directly in the fridge. After you pull the dough out after 24 and 48-hours in the fridge, allow the bagged dough ball to set on the counter until the dough ball reaches a temperature of 50 to 55F, then turn the dough ball out of the bag into a bowl of dusting flour and proceed to open the dough into a pizza skin by your preferred manner. Whatever you do though, DO NOT work the dough after turning it out of the bag, just go straight to opening it into a pizza skin.

Let us know what your results are.

New York Style / Re: Having trouble stretching dough for Artichoke Basile's Margherita recipe.

Lidding/covering the trays too soon after putting them in the cooler creates a problem with the dough. It doesn't allow for the escape of moisture from the dough as it is cooling and it is NOT conducive to efficient cooling of the dough which is imperative to successful and efficient dough management.

To cross-stack the dough boxes place each box on the stack perpendicular to the one below it. This leaves the ends of the boxes open for moisture and heat to escape. Then as you down-stack you can lid each box as you build the new stack. Remember oiling the top of the dough balls after you put them into the box? The reason for that is to prevent the dough balls from drying out during the extended cross-stack period.

If you do not cross-stack the un-lidded dough boxes you will not be able to achieve a level of efficient dough management that will prevent product variation as your dough ages in the cooler. The dough management procedure that I've outlined for you is similar to what all of the big box pizza chains use here in the U.S. as well as in the U.K., and you would be hard pressed to find many commercial independent pizzerias not following a similar dough management procedure. Remember, time and temperature control are the keys to effective dough management: Always mix the dough to the same temperature/temperature range, scale and ball it as quickly as possible (within 20-minutes of mixing), cool the dough as quickly/efficiently as possible, hold the dough at a constant temperature and you'll be rewarded with a consistently performing dough that produces a consistent quality pizza over a period of three to four days. Yes, you can hold it longer but you will be compromising on finished pizza quality.

Dough Clinic / Re: Making pizza dough for my pizza shop, debugging

I cannot answer that question as I do not know how your oven is set up, but probably figure on 6.5 to possibly 7-minutes (assuming dark colored pans) otherwise it could go to something closer to 8-minutes. Run three pizzas through the oven, one with the time set at 7-minutes, the next at 7.5-minutes and the third at 8-minutes, you should be able to make a pretty accurate assessment from the results.

Shop Talk / Re: Baking temp and time for conveyer ovens

When baking in your home oven do not use a pizza stone, instead use a cookie sheet with a piece of parchment paper as a liner.

General Pizza Making / Re: Pizza Pocket Dough Formula?

Since you already have a dough "recipe" stay with that for now, but if you are not using a high protein content flour (13+%) look on the bag for the protein content in grams protein per 100-grams flour, the magic number is 13 or higher.

Use a dough absorption of 58% to start with, manage your dough as you have been, to open the dough into pizza skins use a rolling/pie pin and trim it to the desired diameter. For a 12-inch crust you will probably want to use about 14-ounces of dough.

Bake the pizza on a pre-heated (at least 1-hour) pizza stone at the highest temperature setting possible (probably between 500 and 600F). Brush the edge of the crust with oil immediately before peeling it into the oven.

The combination of high protein flour and high baking temperature should give you something close to what you are looking for.

[New Forum Members / Re: Crispy Chewy](#)

Mitch;

In the UK they have both malted and un-malted flour available, probably much more so than here in the U.S. We have McDonalds to thank you that as the flour used by bakeries producing buns for them is or at least used to be malted at the flour mill. I was a member of the bakery products task team that traveled world wide when McDonalds went International showing bakeries, in countries that don't exist anymore, and just about everyplace else how to make a "McDonalds" hamburger bun. I worked with Golden West Bakery in Manchester on their bun program for McDonalds and by the way, that's where I was first introduced to Mr. Guiness, a pint sized fellow, (off the tap, never a bottle, or heaven forbid, a CAN), we have had a strong relationship ever since :)

[Dough Clinic / Re: The type of water and oil used in dough mixing](#)

Tap water v/s bottled spring water. If you have decent tap water there will probably be little or no cost benefit to using the bottled version. The greatest impact of water will be between softened water and non-softened water. Non-softened water has a high calcium content as will typically produce a slightly tighter feeling, stronger dough than softened water. For this reason, if your water supply is not softened I suggest that you install a line and tap before your softener to draw un-softened water from for your dough. You will probably have softened water for everything else as it saves money on soap, cleaning effort and fixtures throughout the store.

As for the fat type, when used in the dough there is very little difference between using oil and shortening, but when used in a pan, like in a deep-dish pan, the use of oil will give you a slightly better crust color than shortening BUT the crust will feel slightly oily and have something of a fried appearance, whereas if shortening is used the crust will look dry, not oily and have a flatter color to it. As for flavor impact, that will depend upon the flavor of the fat that you are adding such as butter, lard, sesame oil, or olive oil. On the topic of olive oil, my opinion is that the high priced olive oil is just wasted when you put it into the dough, instead use a lower priced olive oil in the dough and use the good stuff on salads and as a dipping oil. The flavor impact will actually be more pronounced with the low cost olive oil than with the delicate flavored extra virgin olive oil. Brush a little olive oil (the cheap stuff) on the crust just before placing it in the oven to get a richer, better colored finished crust.

Sugar will impact the finished color of the crust when the dough is leavened with yeast. The more sugar used, the more color you will get, BUT there is a price to pay, due to the rapid color development the bake time will probably be reduced, thus potentially reducing the crispiness of the finished crust, AND the residual sugar in the crust will be further concentrated during baking so as the sugar exerts its affinity for moisture it will draw moisture from the top of the pizza (about 90% water) into the crust, potentially making for a softer or even soggy crust and it just gets worse in a DELCO operation where the pizza is placed in a box with all the steam/moisture being released from the pizza. The type of sugar can impact the flavor of the finished crust too, such as sucrose (sweetness), non-diastatic malt (malty flavor), molasses (molasses flavor) or honey (no flavor to a slight honey flavor).

On the topic of honey, the darker the honey, the lower the cost, and more intense

the flavor is. If you want the greatest bang for the buck (\$\$\$\$) use a dark colored aka industrial or bakery grade honey, that's what the big wholesale bakeries do to impart a honey flavor in their baked goods.

Salt impacts the dough by making it stronger and less sticky, controlling the rate of yeast fermentation for consistent dough performance and finished crust flavor (fermentation flavor) and by impacting the overall finished crust flavor profile. Without sufficient salt the finished crust will have a starchy like flavor. A good salt level for pizza dough is anything between 1.75 and 2.5%, some like to go higher than this but the sauce will contain salt, as well as any meat toppings, and the cheese is a major contributor of salt, all combined this is a LOT of salt and really not needed. This is why I recommend the salt level range that I do.

If you make your sauce without salt, or use my own favorite which is nothing but fresh sliced tomato, and don't get too carried away with the amount of cheese use you can go up to about 3% salt in the dough if you feel you need to. No direct impact of salt on crust color except indirectly, the salt level will impact the fermentation rate, making for more or less residual sugar to participate in the browning reaction. More salt slows the fermentation rate leaving more residual sugar for slightly more crust color development while less salt allows for more vigorous fermentation leading to more of the sugar being metabolized by the yeast so there is less residual sugar for crust browning, additionally, with the more vigorous fermentation more acids are formed during the fermentation process which also act to inhibit crust color development. This is why sourdough breads and rolls are always so light in color.

Dough Clinic / Re: The type of water and oil used in dough mixing

Dough improvers are divided into two different classes, strengtheners and reducing agents. Strengtheners can be things like DATEM, ascorbic acid and oxidative enzymes. Their function is to make the dough stronger, in bread production their observed function is to increase the volume/height of the finished bread. In pizza production, with dough that is properly managed you probably not see any affect. Reducing agents include things such as proteolytic enzymes (protease), L-cysteine, glutathione (dead yeast), deodorized vegetable powder (garlic and onion), and papain. These additives weaken the dough making it more extensible with reduced memory or snap-back. There is some application of these ingredients in pizza production but mostly limited to crusts that are formed using one of the pressing methods, but it may also be used by wholesale producers using the sheet and die cut forming procedure where short fermentation times are the "norm" and dough shrinkage after cutting can get to be a problem. In bread production, especially commercial bread production these additives are used primarily to reduce dough mixing time. Other additives are designed as bread crumb softeners, aka anti-staling agents, these are the ingredients that allow you to have bread that remains soft and palatable for two weeks or more after purchase. They may include things like DATEM especially in combination with mono and di-glycerides, and enzymatic crumb softeners (enzymes). These are essentially never used in pizza production of any type. Lastly, there is a group of additives that are designed specifically to address rope and mold issues in bread that will have a shelf life of more than four days. Included in these additives are sodium and calcium propionate, potassium sorbate, tartaric acid (raisin juice concentrate), and blends of acetic, lactic and propionic acid. These additives would only have application in pizza crusts that might be packaged and sold at the local supermarket or through a distributor.

There is also one other type of dough improver that seems to be popular in the UK, and that is one which is designed to improve the performance (whatever that means) of the dough. These additives are typically a blend of enzymes, especially amylase for increased sugar production in the dough and some form of oxidation such as ascorbic acid. If you are using an un-malted flour this type of additive might provide some benefit, but if your flour is normally malted at the flour mill it will benefit only the person who sold it to you, it's really not necessary in that case. Probably more than you wanted to know.

Dough Clinic / Re: Dough Improver? Does it make a difference

There are two styles of pan crust pizza, thick crust where the dough is either rolled out or stretched out to fit the pan, the dough is then given a short proofing period, typically 30 to 45-minutes before it is dressed and baked. The other is deep-dish style, here a deep pan is used (1.5 to 2-inches deep/37 to 50 mm) and the dough is fitted to the pan in the same manner, but the dough is allowed to proof/rise for upwards of 75-minutes or more depending upon the desired final crust thickness. In either case, the dough management procedure will be the same as previously discussed. The only change you will need to make will be as follows:

- 1) Open the dough ball to fit the pan. (oiled or greased pan)
- 2) Place the opened dough piece in the pan, cover and set aside to proof/rise as necessary.
- 3) Note: A common way to handle pan style pizza dough after panning is to allow it to rise to a predetermined height, normally about 1/2 of the normal proof height, then take the panned dough to the cooler (do not cover for at least 30-minutes) then cover to prevent drying. The dough can be stored in this manner for the remainder of the day if necessary.
- 4) The dough will continue to rise in the pan but due to the chilling of the dough it will stop or drastically slow in rising at the desired height. You will need to experiment to find out what the correct height is.
- 5) To use the pre-risen panned dough, remove from the cooler as needed, dress and bake. A lot of pizzerias will prepare their dough in this manner before they open in the morning then make another batch in the afternoon for the evening trade. Pizza Hut, when they used to do all of their dough preparation at the store had a line stamped into the side of the pan, about 1/2-inch (12.5 mm) above the bottom of the pan as an indicator for the height that the dough was to be allowed to proof to before going to the cooler.
- 6) Any proofed, unused dough at the end of the day can be incorporated into your new dough at the rate of 15% of the total dough weight maximum.

I hope this helps,

Dough Clinic / Re: Making pizza dough for my pizza shop, debugging

Tay;

Your temperature is within the normal range for baking in an air impingement oven. The lateral heat problem is one that is experienced with some regularity in air impingement ovens, especially those of older design. New production ovens have, for the most part, addressed the problem. You may need to go back to the manufacturer to have new fingers installed (reduction in airflow on the hot side) to address the problem. You might also try baking at a lower temperature, 450F, as the problem seems to be diminished when baking at lower temperatures.

Shop Talk / Re: Baking temp and time for conveyer ovens

TAY;

SORRY ABOUT THAT, I HIT THE WRONG KEY AND POSTED BY ERROR.

To continue:

The dough will remain good to use over a 3-hour period of time. To use any dough balls that have not been used in this time, open the dough balls into skins and place onto pizza screens put the screens in a wire tree rack and place in the cooler for use later in the day. Be sure to cover the rack of dough skins with a plastic bag to prevent drying. To use the pre-opened dough skins, remove from the cooler, allow to warm at room temperature for about 20-minutes, then use in your normal manner. If you bake on pizza screens, be sure to remove the dough from the screen it was stored on and place onto the baking screen. Failure to do this may result in the dough/crust sticking to the screen after baking. If you bake on the deck just remove the dough from the screen, place onto your prep-peel stretch to clean up the shape a little if necessary, dress and bake in your normal manner.

This should get you started and address the problems for are experiencing.

Dough Clinic / Re: Making pizza dough for my pizza shop, debugging

Tay;

Here is the procedure that was designed specifically to address the problems that you are experiencing.

The dough is designed to come off of the mixer at 80 to 85F/26 to 29C, and the water temperature is adjusted to give you this finished dough temperature, make adjustments as necessary to achieve/maintain this temperature range.

- 1) Put water (70F/21C) in the mixing bowl first.
- 2) Add the flour followed by the salt, sugar and IDY.
- 3) Begin mixing at low speed for 2 to 3-minutes (you need to mix just enough so you don't see any dry flour in the bottom of the mixing bowl).
- 4) Add the oil and mix one additional minute in low speed.
- 5) Mix the dough in medium speed for 8 to 10-minutes or in low speed for 15 to 20-minutes in the dough cannot be mixed at medium speed.
Put the mixer in low speed and while running, pour 1-ounce/28-grams/ml oil down the inside of the mixing bowl allowing the mixer to run for 30-seconds. This will coat the dough with oil making it much easier to remove from the bowl.
- 6) Take the temperature of the dough, you are looking for a finished temperature of 80 to 85F/26 to 29C) record the temperature for future reference.
- 7) Take the dough DIRECTLY to the bench for scaling and balling.
- 8) Place the dough balls into your plastic dough boxes and wipe the top of the dough balls lightly with salad oil.
- 9) Take the dough boxes DIRECTLY to the cooler and cross-stack the dough boxes to allow for heat ventilation. Allow the dough boxes to remain cross-stacked for at least 2.5-hours, then down-stack the boxes. This is where the top box is removed and placed in the bottom position for building a new stack. This new stack will be just in reverse order (from top to bottom) of your original stack.
- 10) Allow the dough to cold ferment in the cooler for 24 to 48-hours. The dough will keep for up to 72-hours in the cooler.
- 11) To use the dough, remove the number of dough boxes that you anticipate you will need to use over the next 3-hours and allow to set at room temperature (keep covered at all times) until the dough temperature rises to 50 to 55F/10 to 13C, then begin opening the dough into skins as needed. The dough will remain good to use over about a 3-hour period of time (

Dough Clinic / Re: Making pizza dough for my pizza shop, debugging

"High gluten" high protein flour will almost always give a tougher and more elastic dough than all purpose, or lower protein content flours with all things being equal. When high protein flour is used, especially with lower dough absorption the dough

typically needs to be fermented for a longer period of time. For a dough made with a high protein/high gluten flour, even with 2% IDY, a total of only 2.5-hours of total fermentation is quite short, especially in view of the 54.36 dough absorption being used and what I will assume is a hand forming technique for opening the dough ball into a pizza skin as opposed to using a mechanical dough sheeter/roller. Actually, the dough that you are making along with the dough management procedure employed isn't all that much different from an emergency dough which can save the day in a pizzeria if you find yourself out of dough for any reason, but aside from that there isn't too much to say about it. A good experiment would be to oil the dough balls immediately after forming and place in individual plastic bags (do not seal closed) instead twist the open end into a pony tail and tuck it under the dough ball as you place it in the fridge. Allow the dough balls to cold ferment for 24-hours, and 48-hours to see if that improves the way the dough opens for you. I'm betting it will. If you don't want to cold ferment try allowing the dough balls to ferment at room temperature for more than the 1.5-hours they are presently receiving, by progressively allowing the dough balls to ferment for at least 2-hours more in 30-minute increments you should see some improvement and be able to zero in on a time that allows the dough to be opened more easily.

Keep us posted on your results.

New York Style / Re: Having trouble stretching dough for Artichoke Basile's Margherita recipe.

I would suggest using a typical bread type flour with protein content in the 10.8 to 11.5% range. I'm not so sure I'd want to use diastatic malt unless you are looking for a potentially sticky dough. Non-diastatic malt would be a much better choice for this type of product. As for baking, I'd suggest baking on a screen as opposed to on the deck as you will have a more difficult time getting the center to heat to or above 165F without getting the crust too dark where it is in contact with the oven deck. You might also want to consider brushing the pizza pocket/calzone with clarified butter or garlic flavored butter (commercial product recommended) immediately before baking, a nice addition is to sprinkle the top surface with shredded Parmesan cheese too. Don't forget to cut a couple of slits into the top to allow for the release of pressure from within the sealed pocket, failure to do so will result in the pockets blowing up like a balloon and sometimes even blowing open along the seam. If you are going to make a lot of them be aware that many bakery suppliers carry what they call a fried pie crimping tool. It's made of cast aluminum and crimps/trims the dough all in a single operation. If I remember correctly the crimpers are designed for crimping and trimming a folded 6" diameter circle of dough.

You may need to experiment with the baking temperature too, I'm thinking that about 450F might be close to what you will need to be baking at in a deck oven.

General Pizza Making / Re: Pizza Pocket Dough Formula?

Brian;

An unused refrigerator would work fine for your retarder/cooler for cold fermenting the dough in. Just confirm that it is working properly and holding between 38 and 42F. I like to use plastic bags for storing the dough in as the grid shelves can be left in place and the bagged dough balls just spread out on the shelves without the need to go back into the fridge to cross stack and nest or cover dough boxes. By using bags you can put the dough balls in the fridge and come back to it at the end of the cold ferment period. There has been quite a bit of previous discussion on bagging dough balls, but my method is to lightly oil the dough balls, and drop them into plastic food storage bags, they're like bread bags,

they're cheap and available from most restaurant suppliers or on line. Twist the open end of the bag into a pony tail to close (DO NOT TIE) and tuck the pony tail under the dough ball as you place it on the shelf in the fridge. To use the dough, bring out to room temperature and allow to warm until the dough reaches at least 50F then begin opening the dough balls into pizza skins, dress and bake.

Depending upon your dough formula and dough management procedure you will probably want to experiment with the temperature that you let the dough balls warm to prior to opening them to see what works best for you. As for cold fermentation time, you will want to experiment with that too, begin at 24-hours, then go to 48-hours and then to 72-hours. If you would like to get a copy of my Dough Management Procedure just e-mail me at <thedoughdoctor@hotmail.com> and I'll be glad to send you a copy.

Prep Equipment / Re: Commercial Proofer/Retarder Recommendation

I've personally used them quite a number of times for making a variety of different types of pizzas. They will operate at temperatures up to 1,000F (determined by hand held IR thermometer) when wood or coal fired so they're no slouch in the temperature department. Depending upon the model, the stone hearth is massively thick too so there is never an issue with latent heat in the deck. The only down side to these ovens is that some operators insist upon operating them at 450 to 500F for making a traditional American type of pizza, they do a great job, but what a waste of a great potential in the oven. My own preference is for one that is both gas fired and wood or coal/anthracite as this allows the oven to be idled to 300-350F overnight and quickly brought back up to baking temperature in 2-hours or a little less. Only once did I work with a 100% wood fired version, never again! I took two days to bring it up to baking temperature from cold and you have to constantly feed it, then in the morning it took about four hours to bring it back up to baking temperature. Remember, with these ovens, due to their massive deck you have to rebuild the latent heat in the deck before you are ready to bake, and if you let the oven cool down that can take time. You will also need to make sure your insurance will cover a wood or coal fired oven in your store, and if you rent make sure your lease will allow this type of an oven too, lastly, don't forget to check on any applicable codes regulating coal or wood fired ovens.....so many things to think about.

Shop Talk / Re: What sort of oven is this I spotted it on Pinterest wood fire or gas or both?

Pavoid;

Actually you're talking about two different pieces of equipment. A retarder operates at refrigerated temperature of 38 to 42F while a proofer operates within a normal temperature range of 85 to 105F with humidity control to provide a relative humidity of 75 to about 86% (could go to as high as 100% but then it is raining in the proofer, not a good thing). If you want to have a good, small proofer look at the Belshaw Econo-Proofer from Belshaw Bros., Inc. at www.belshaw.com as for a walk in retarder, Hobart makes some pretty good ones, but you might also go to the PMQ Think Tank and post a question to the resident equipment expert George Mills regarding walk-in retarders/coolers.

Prep Equipment / Re: Commercial Proofer/Retarder Recommendation

Pieman;

When dough is press formed you MUST have a very soft, extensible and relaxed dough for it to produce a quality pizza skin and resulting crust. Presser crust do not like to be made with a very strong flour as it just makes the memory/shrinkage

issue all the more worse, instead use a flour with not more than 12.8% protein content (think General Mills Superlative), then allow the dough balls to cold ferment for at least 48-hours, remove the dough balls very carefully from the dough box (DO NOT ROUND OR SHAPE) and place onto the lightly oiled platen, set the head temperature at 250F and press for 7-seconds. If you still experience too much snap-back/memory add between 1 and 2% PZ-44 to the dough.

For the most part you cannot just take a dough that is developed for opening by a different manner and expect it to open decently using a hot press. Also, there will be a difference in crumb structure in the finished crust between hot pressed and other opening methods. I have discussed this in much greater detail in one of my articles in PMQ Magazine (In Lehmann's Terms / archives).

Dough Clinic / Re: Need Instruction and Help

Some of the advantages of an air impingement oven over a deck oven are:

- 1) Smaller foot print required
- 2) Ease of operation (no oven tender is needed)
- 3) Improved uniformity of bake
- 4) Increased production rate
- 5) Handles moisture released from the toppings much better than other baking systems (great for pizzas heavily laden with vegetable toppings)
- 6) Potentially provides for a cleaner operation
- 7) Potentially shorter bake time as compared to traditional deck ovens
- 8) Potentially lower operating cost

Greatest disadvantage:

All the ambiance of a giant shoe box

General Pizza Making / Re: Deck oven baking

When you're doing it at home for your family anything does, but when you add the word "commercial" to the equation it all changes as there are now specific rules, regulations and laws that you must abide by. At the risk of repeating myself, this is something that you need to discuss with your local health inspector. If they approve of it, great, if they don't, better to find out now rather than later when they won't issue a certificate until you get it replaced.

Tom Lehmann/The Dough Doctor

Shop Talk / Re: Is polished concrete a suitable surface for opening dough?

If we are talking about a new commercial deck oven the common practice is to spread a thin layer of corn meal over the deck surface, as soon as the corn meal is toasted you can sweep it out of the oven and you're good to go ahead and begin baking right on the deck. A good idea with a new deck oven is to bring it up to temperature gradually before you begin baking in it. Start at 300F and allow to operate for 1-hour, then 350F for another, progress all the way up to your highest baking temperature then allow to operate a couple of hours. Shut down for the day, on the following day set the thermostat at 450F and treat the deck with corn meal as described above, after sweeping the corn meal out of the oven set the thermostat to your desired baking temperature and you're ready to begin baking pizzas.

General Pizza Making / Re: Deck oven baking

The thread topic brings up a story about a pizza manufacturer in Wisconsin that started out making pizzas and selling them to local bars along with a simple toaster

oven to bake them in. The concept worked better than expected as bars were reporting that when the pizzas were served (at no cost to the patrons) beer sales rose significantly...great for business! As time went on other manufacturers, both large and small, got onto the wagon for a piece of the action and sold their pizzas at a lower cost which was received by open arms by the bars (remember that they were giving it away when the bar was busy) in short order the bars all discovered that when they used brand "X" pizzas (all others except for the original pizzas) the bar patrons ate the pizza but beer sales didn't go up resulting in a potential loss of revenue....not a good thing! So they went back to the original pizzas (from the unnamed manufacturer) and viola! Consumption of beer again increased when the pizza was served, fact or fiction? Turns out it was fact, the manufacturer made their pizzas using the cold press forming method, that method requires the use of high levels of L-cysteine (sold in a commercial form called PZ-44), it just so happens that when used at high levels, L-cysteine mimics the effect of thirst on your lips....ahhhh, give me another beer!

None of the other manufacturers used the cold press forming method so they didn't need to use L-cysteine, and if they did it was at a much lower level so it didn't mimic thirst as the higher levels did. You can see this for yourself if you use PZ-44 in your dough at roughly 3-times the recommended level. If you do this your dough management procedure should look like this: Mix, immediately scale and ball, rest for 10-minutes, open into a pizza skin, place onto an oiled pan, rest for 5-minutes, again press the dough out to completely fit the pan, dress and bake. To replicate those first pizzas mentioned par-bake the skins until they just begin to show color, immediately upon removal from the oven invert on a cooling screen to cool for 30-minutes, then dress and place into a toaster oven to finish the pizza.

A little "pizza history" there.

General Pizza Making / Re: Beer Pies (pies that make you want to drink beer - a.k.a. bar pies revisited)

Pizza trailer/truck or other?

Begin by discussing your thoughts with your local codes/licensing and health department to see what they will require of you....better to do it now as opposed to finding out about something later and since you will need to be licensed you will want to and need to play by their rules. Also check to see if you will need to be licensed in each county that you plan to operate in or if your state license will allow you access to the entire state. If you're thinking about a "pizza trailer" go back in the PMQ Think Tank archives as there was once a lot of discussion on that very topic. Look for postings by Paul Nyland/Pizza Paul.

New Forum Members / Re: Mobile Pizzeria

Don't forget about your state restaurant association, be sure to contact them to let your feelings be known. By the way, you also have the right to ask who was consulted in making such a stupid regulation. Lean of your state restaurant association, that's what they're there for, if we don't, independents will be regulated out of existence.

Dough Clinic / Re: Pizza Dough in the danger zone.

A lot would depend upon the flour you're using and the amount of yeast being used. As long as the dough is being fermented (sum of all the time that it is between the temperature of 45F and about 125F) the yeast is producing acids, alcohol, and carbon dioxide. The alcohol and acids are extremely degrading on the flour proteins, weakening them quite significantly, plus the enzymes present in the yeast will also continue to hydrolyze proteins, further weakening the flour. The acids will

also lower the pH of the dough making it more difficult to brown during baking unless you are baking in a super hot oven (this is why sourdough bread is so light in color). The fact that you put the dough back into the fridge is what firmed the dough sufficiently, allowing you to open it into a pizza skin without it becoming a sticky mess. Without knowing more about the dough formula and dough management procedure I can't say if the yeast was in a condition to provide any further fermentation, or if the dough was just so weak that it lost its ability to retain leavening gas. In any case, if you open the dough gingerly, taking care so as not to degas it, and bake it in a hot enough oven on a good solid baking surface capable of holding a lot of latent heat, you can generally get away with making a pizza from the dough.

Dough Clinic / Re: A little extra time..no problem?

I'll toss my hat into the ring too.

Look at it like this, bakers, for hundreds of years have allowed dough to ferment at ambient/room temperature for at least 4-hours, and in most cases, a lot more. Typical sponge-dough process bread used to be made with sponges that were fermented for up to 6-hours and in some cases 18-to 24-hours, additionally, many commercial bakeries used to ferment their dough in temperature/humidity controlled rooms (proofers/proof boxes) at 90F and approximately 80% relative humidity and to top that all off they then subjected the dough to an hour or more of final proof at 100 to 105F with 86 to 88% relative humidity.....all of this PRIOR to baking! Even dough made with fairly high levels of milk and egg are subjected to many hours of combined fermentation, rest, and final proof time prior to baking.....when was the last time you heard that white pan bread or your favorite sweet dough or Danish pastry was implicated in a microbial related food safety issue? The biggest concern that I have, and I've expressed it many times before is that of the probability of cross contamination when we use raw shell eggs in making pizza dough. Doing so at home is one thing, but doing so in a commercial business establishment/pizzeria is a whole different thing, remember, it ain't the dough, it's the cross contamination that's the issue here. Mind you, all of this discussion is on yeast leavened dough only, cookie doughs ARE A DIFFERENT KETTLE OF FISH as you don't have the acid development as you do in a yeast leavened dough.

As for the food safety inspector.....well, I won't dive into that pool, but as the military slogan goes "when in doubt shoot it, salute it, or paint it" or just say NO. How hard would it have been for her to simply say "Let me research that and get back to you?"

Dough Clinic / Re: Pizza Dough in the danger zone.

We had an early model VCM when I was working at the American Institute of Baking and that was the rpm of that 45-quart model. Hobart may have slowed it down a bit since then, like you said, "a good thing". The VCM is the only mixer that you can truly over mix the dough in. Due to the high mixing speed the doughs tend to come off of the VCM a little tacky but that quickly leaves the dough.

Shop Talk / Re: Hobart Cutter Mixer and Good Recipes

Been there, done that too, the best way to use that panned/risen dough is as follows:

1) Add it to your new dough at the rate of 15% based on the total dough weight, this will calculate out to about 12-pounds for a dough based on 50-pounds of flour. Best way to add it is to chop it into chunks and drop it into the flour just before you begin mixing.

2) Still have dough left over? Convert it into bread sticks, or garlic knots. Cut into 1" strips (about 1.75-ounces) spray with a LITTLE water and roll under your hands to form a "rope" (hot dog), leave as is for bread sticks, or tie into a single overhand knot for garlic knots, place onto a lightly oiled pan, brush with oil or melted butter and allow to proof for about 40-minutes (you will need to experiment to find the best time). You can also proof on a sheet pan lightly dusted with corn meal then gently remove and transfer to a prep-peel to peel into the oven if you wish to bake directly on the hearth. I like to par-bake only, then for the order, just place back in the oven to thoroughly reheat and finish browning, brush with garlic flavored butter oil with diced garlic pieces for the garlic knots, or butter oil for the bread sticks and finish with a good dousing of Parmesan cheese blended with dried basil and a little Romano.....OR, make them into dessert sticks by brushing with butter oil, and par-baking, when reheated, brush again with butter oil and toss in a cinnamon-sugar mixture while still hot, serve with a dipping cup of powdered sugar-water icing.

If you still have too much dough left over you are being overly optimistic on your evening sales and need to reassess how much dough to pull.

Dough Clinic / Re: Storing already panned dough

If you will e-mail me directly at <thedoughdoctor@hotmail.com> I'll be glad to provide you with a copy of a very effective dough management procedure that incorporates all of the key points for effective dough management.

The changes that I would recommend to your proposed formula and procedure are as follows:

1) Since you are planning to use IDY, suspend it in 16-ounces of water at 95F as this will ensure optimum yeast performance, allow the yeast to hydrate for 10-minutes, then add it to the 65F water in the mixer bowl along with the salt and sugar (you might want to re-think using sugar in a coal or wood fired oven due to the probability of excessive charring/most formulas for use in these types of ovens do not use sugar)

2) No need to mix the salt, (sugar?) hydrated yeast and water together.

3) Add all of the flour at one time, 1,750 rpm will ensure thorough incorporation in 60 to 70-seconds.

The rest of your proposed dough management procedure should work fine for you, but removing the dough 4-hours prior to use from the cooler might be more than needed or desirable (especially with your proposed IDY level of 0.5%), instead, pull the dough out of the cooler at least 2-hours prior to use and check the temperature, when the temperature of the dough ball reaches 50F you are good to go with beginning to use it, this method will allow you to effectively use the dough for at least 3-hours after you begin opening it into skins.

Shop Talk / Re: Hobart Cutter Mixer and Good Recipes

Nice looking kitchen. Your VCM doesn't require a totally different dough formula, just a couple of tweaks: Whatever type of yeast that you use should be suspended in a small amount of warm water (ADY and IDY) or cool water (fresh/compressed yeast) as the mixing time isn't sufficient to guarantee good yeast dispersion throughout the dough, plus the mixing time is too short for ADY to be thoroughly incorporated into the dough (4 to 5-minutes). Make sure the VCM has the DULL mixing blade, the sharp one is for cutting veggies, and cheese. Attachments are available from Hobart if you need anything.

Put the water (65F) in the mixing bowl first, then add the yeast suspension, salt and sugar (if used) and lastly add the flour. Total mixing time will be around 70-seconds. Mix the dough just enough to achieve a smooth dough consistency. DO

NOT OVER MIX. Better to under mix than to over mix. Your targeted finished dough temperature should be in the 75 to 80F range for this mixer. Then just employ an effective dough management procedure and you should be good to go. I notices that you mentioned a spiral dough mixer too. These mixers are totally dedicated to only one thing, mixing dough, and they do a very fine job of it too. Planetary and VCMs are multi-functional in their role in a pizzeria.

Shop Talk / Re: Hobart Cutter Mixer and Good Recipes

It should provide an interesting malted milk like flavor to the finished crust, since it already has sugar in it don't add any supplemental sugar the dough formula.

Dough Ingredients / Re: dough additive

Hey guys, that's an air impingement oven, just change the top finger configuration to flow less air to the top of the pizza. No formula changes needed.

Total cost: about \$100.00 for a new top finger.

Dough Clinic / Re: How do I make my pizza dough crust lighter/whiter without sacrificing sweetness?

It sounds as if your dough management may not consistent, my mantra has always been "time and temperature control are the keys to effective dough management.

Allow me to pose a few questions:

Do you have a targeted finished dough temperature? If so what temperature/temperature range are you targeting?

Do you measure the temperature of each dough as soon as it is finished mixing?

Do you take the dough directly from the mixer to the bench for scaling and balling?

Do you monitor the temperature of your walk-in?

Do you store the dough in the walk-in as far away from the door as possible, if not do you have plastic strip curtains over the door?

These would be the first questions I'd ask and explore before looking at the dough formula for a possible solution.

Dough Clinic / Re: Storing already panned dough

And yet more questions, is it the top of the pizza that you want to make lighter in color, the bottom of the pizza or both top and bottom? What kind of oven are you using? If you are baking in a pan, tell us about the pan, color and depth.

Dough Clinic / Re: How do I make my pizza dough crust lighter/whiter without sacrificing sweetness?

Unless the pan is one of those from Lloyd Pans with their proprietary non-stick finish you will need to have oil in the pan for each use, sometimes you can get two bakes out of a pan that was oiled once but seldom more than that. The other thing to consider is how oil actually functions in a pan, it isn't there just to improve the release properties, it also helps the bake by bridging the any minor air gaps between the dough and the pan surface resulting in much improved heat transfer, and if used at sufficient quantity it can give the finished crust a fried quality as well as flavor.

Stones/tiles/steel, Pans & Accessories / Re: Pans Ruined in Dishwasher - You'd think I'd Know Better

JKB;

Remember the old adage used by General Patton "hold your friends close, but hold your enemies closer". Love your own pizza but try some of the others too, if for no other reason just to reaffirm the love for your own pizza.

[Chitchat / Re: Home Run Inn frozen pizza?](#)

JPB;

If your intent is to just use the pans for serving there is no need to season them, but do be careful as to how you wash them, additionally, since your pans responded to the dishwasher in the way they did, there is a possibility that they are just plain spun aluminum pans and not anodized. The anodizing process helps to protect the pans (for a time) from such things as you experienced. One of the reasons why most stores offering their pizzas to their customers in pans also bake in the same pan is so the pizza fits the pan. If the pizza is bigger or smaller than the pan they have a problem on their hands. I realize that this is not a problem in a home setting. If you want to experiment with pan baking on a deck keep in mind that you might need to place a pizza screen under the pan to hold it up off of the deck to prevent the bottom of the pizza from becoming too dark. If your pans are bright (silver color) you may not have that problem as the bright reflective color of the pan may reflect sufficient heat away from the bottom of the pizza to prevent excessive crust color development, then too, you can bake in the pan (any pan will do in this case) until the crust is just par-baked and pop the pizza out of the pan to continue/finish baking on the oven deck (this will set the size of the pizza) then remove the pizza to a cutting station/board where you will cut it into the desired number of slices and then slide it back into the baking pan for serving.

[Stones/tiles/steel, Pans & Accessories / Re: Pans Ruined in Dishwasher - You'd think I'd Know Better](#)

Trinity;

Those Totino's crusts, like the Jeno's crusts are submersion fried. Pillsbury (Totino's) and Jeno's were in litigation over the process for more than 10-years at a cost of some 12-million dollars. It was finally settled when Jeno Palucci (not sure about the spelling) sold out to Pillsbury a number of years ago.

[Chitchat / Re: Home Run Inn frozen pizza?](#)

JPB;

Now that you've got your pans cleaned you will most likely want to re-season them again to improve the quality of bake. Wipe the pans inside and out with a thin coating of salad oil and place in a 425F oven for about 30-minutes (make sure a window is opened as there will probably be some smoke). The newly seasoned pans will have a slight amber tint that will darken with use. Then NO NOT EVER WASH YOUR SEASONED PANS. To clean them just wipe out with a clean towel while still warm, or if you just gotta get them wet, here is the procedure for washing a seasoned pan: Grasp pan in one hand and soft plastic bristle pot brush in the other, dip pan into hot soapy water and gently scrub the pan using the pot brush, rinse the pan, put down the pot brush and grab a clean towel, wipe the pan dry on both the inside and outside (note that you have NOT released your grasp on the pan until now), place the pan into a warm oven to finish drying for about 10-minutes, or do as I do, turn the oven off, open the door and come back later to remove the now dry pans.

By the way, now you know the biggest advantage to the commercial quality black anodized finish pans.

One other thing, most of the pizzerias that I've worked for remove the pizza from the pan for cutting and then place it back into the pan for serving. When this is done in a commercial establishment the pans MUST be washed after every use, this is where the black anodized finish pans are a real life saver, or should I say "pan saver".

[Stones/tiles/steel, Pans & Accessories / Re: Pans Ruined in Dishwasher - You'd think I'd Know Better](#)

JPB;

There are a number of things that influence the way the rim performs/expands during those first few seconds of baking, dough absorption, yeast level, flour type, amount of fermentation, oven temperature and decking and how the edge was actually formed are the main factors to consider. My approach has always been to go after the edge forming technique first. Begin with a very narrow untouched edge and work out from there to see if you can achieve the edge characteristic you're looking for. I wouldn't worry too much at this time as to how your dough or edge looks prior to baking as compared to that of others as your dough is not the same so it will in all probability perform differently. If this approach fails to give the results you're looking for then you will need to delve deeper. In that case I might suggest looking at variations in dough absorption first and possibly yeast next.

[Dough Clinic / Re: Explanation of MegaRims?](#)

CDN;

The reason why those crusts are so oily is because they are formed using a hot press. If you turn one over you will see what appears to be circular ridges in the bottom of the crust, that's a give away that they were formed on a hot press. Hot pressed crusts are pretty well coated in oil just prior to pressing. The oil provides two benefits, first it helps the dough to release from the top die of the press and secondly, it provides added oil to the pan in which it is baked for improved pan release properties. In this instance, the dough ball is oiled, then placed onto a special pan which has those circular ridges (to help control snap-back) and pressed right in the pan. The crust is baked (par-baked) on the pan and then automatically removed from the pan after baking, it is then cooled and sent to the topping line for finishing and packaging. A lot of people like this type of crust due to the fat content (we used to say that everyone has a "fat loving " gene) and since there is so much fat/oil in the pan the crust is closer to fried than baked, then, due to the dimensional differences of those circular ridges, they tend to get crispier than the rest of the crust providing an added level of eating interest.

[Chitchat / Re: Home Run Inn frozen pizza?](#)

Zambo;

Let me know if you need any help with the calculations.

By the way, I've found that a few extra sunflower seeds in the multi-grain mix is much appreciated by many customers. Their appearance makes for a very good looking crust and the flavor is superb.

[Dough Clinic / Re: PIZZA FLOUR BLENDS??](#)

I am not familiar with any "Italian" multi-grain flour blends but they are getting to be quite popular with a lot of the higher end pizzerias. You have two options, one you can buy a ready made multi-grain blend from most distributors. These are blends of anything from 7 to 11 or more different grains coarse ground and ready to add to your flour, or as I have been doing this past summer, we have been making our own multi-grain blends. We start out with a trip to the supermarket where we buy a variety of different grains such as teff, quinoa, sunflower seeds, buckwheat, triticale, rye, flax seed, uncooked oatmeal, corn meal, etc. We put these together to make a blend (you will want to experiment with the composition of the blend). Put 10-ounces of the blend into a bowl and weigh it for tare, now begin adding warm (NOT HOT) water to it while stirring when you get a thick mass, set

aside to hydrate for 30-minutes, add water to the mass again until you achieve the consistency of thick oatmeal, set aside again, this time for 60-minutes. Keep adjusting the amount of water until the finished consistency after hydration is like very thick oatmeal. Now weigh the bowl again, it will weigh substantially more due to all the added water. Subtract the tare weight of the bowl so now you have the weight of the multi-grain blend and added water. Subtract 10 from this number and you will have the weight of water added. Divide the weight of water added by 10 and multiply by 100 to find the % absorption of the multi-grain blend. From that % subtract 5. This will be the multi-grain absorption value that you will need to use when calculating the total absorption of your dough. Assuming that you will use the multi-grain blend to replace 40% of the total flour in your dough formula (this is what many use) take 40% of your total flour weight and replace it with your multi-grain blend, now calculate the absorption of the multi-grain blend based on the above calculations. The remainder of the flour will be your regular pizza flour. Use 55% to calculate the absorption of that portion of your flour. Example: Your dough size is based on 25-pounds of flour. Replace 40% with your multi-grain blend = 10-pounds of multi-grain blend needed. The remainder of the flour (60%) will be your regular pizza flour (15-pounds). Let's assume the total absorption of the multi-grain blend was 80%, subtract 5% = 75%. To calculate dough absorption 10-pounds X 75 (press the % key) and read 7.5-pounds of water. 15-pounds X 55 (press the % key) and read 8.25-pounds of water. Add the two up $7.5 + 8.25 = 15.5$ pounds of water will need to be added to make your multi-grain dough (15.5 divided by 25 X 100 = 62% (based on the total weight of the flour plus the multi-grain blend). THESE NUMBERS ARE ONLY TO SERVE AS AN EXAMPLE IN DOING THE CALCULATION. The ACTUAL dough absorption will most likely be somewhat higher. The absorption of the multi-grain blend will vary with the grain/seed composition as well as the amount used. I wrote very comprehensive instructions for doing this calculation in one of my In Lehmann's Terms articles in PMQ Magazine.

It's important to understand that the dough will be softer and more sticky than you are used to seeing immediately after mixing, so you will need to allow the dough to hydrate for 60-minutes after mixing before proceeding with cutting/scaling and balling. At the time when you are balling the dough it SHOULD FEEL SLIGHTLY TACKY, if it doesn't you probably don't have enough water in the dough and finished crust quality will suffer. Done correctly, these finished crusts have a great flavor and texture.

Dough Clinic / Re: PIZZA FLOUR BLENDS??

One other note regarding metal bench scrapers, DO NOT sharpen them on an angle like a knife, instead, the correct way to sharpen them (if you want to call it that) is to lay a fine cut file flat on a table then push the scraper along the file while holding the blade 90-degrees to the surface of the file. This puts a flat/square edge on the scraper so as it is used (held at about a 45-degree angle) that square edge will remove everything in its way and if used on a clean wood surface it will smooth the surface while removing minor imperfections. If you have a butcher block work surface it can't be beat for cleaning it. After scraping, just give the surface a light coating of mineral oil and you're good to go.

Newbie Topics / Re: Wooden Peel care

Zambo;

You bet! We have been doing it for years at the different pizza shows when we've had a pizza kitchen to work from.

First, if you have one of the newer generation air impingement ovens (less than 7-years old) set the temperature at 510F, if you have one of the older generation air

impingement ovens, like the old M-M PS-360 ovens set the temperature as high as it will go (typically 525F).

Second: Delete any sugar, milk, or eggs from the dough formula.

Third: This is critical, you will need to use the Hearth Bake Disk (black anodized, non-stick finish, cloud hole pattern) from Lloyd Pans <lloydpan.com> or contact Paul Tiffany at Lloyd Pans <p.tiffany@lloydpan.com> .

Fourth: Use a well fermented dough (cold ferment 48-hours is normally pretty good)

Fifth: Increase the total dough absorption to around 62 - 65% if possible.

Sixth: Open the dough balls by hand only (do not machine open)

Seventh: Place the opened pizza skin onto the Hearth Bake Disk, dress and bake (DO NOT OVER DRESS) More toppings is not better in this case.

Eighth: Set the belt speed to 5-minutes and adjust accordingly to prevent scorching the toppings.

No, the pizzas do not look like they were just baked in a wood fired oven at high temperature, but instead, they look like they were baked in a good, hot deck oven. Those strange shaped holes in the disk are what will provide the desired char on the bottom of the pizza while the solid rim on the disk will prevent the development of a "pizza bone" which is common when baking at high temperatures in these ovens with other baking platforms.

Chitchat / Re: LEOPARD SPOTTING CHAR WITH CONVEYOR OVEN?

They don't get any better!

Dough Clinic / Re: Pease Porridge Hot, Pease Porridge Cold...

I like to use a deep-dish pan gripper to hold the pan and then run a short blade spatula around the pizza to make sure it separates from the pan, then using a long blade decorating spatula or the (Pie Server #PS-196 From American Metalcraft) or something similar, insert the spatula/pie server between the pizza and the pan, then in one fluid motion raise the pan up quickly and stop, as if trying to flip the pizza out of the pan, as the pizza raises in the pan insert the spatula/pie server under the pizza and tipping the pan towards the spatula/pie server, and guide the pizza out of the pan.

Chicago Style / Re: How to get deep dish out of pan

That's the best part, we get to eat our mistakes!

Dough Clinic / Re: Pease Porridge Hot, Pease Porridge Cold...

Roy;

If you will send me an e-mail at <thedoughdoctor@hotmail.com> I'll be glad to send you a copy of my Dough Management Procedure which is a comprehensive procedure for managing your dough to give you improved consistency for up to four days in the cooler.

Your IDY level appears a bit low for a dough that is to be managed for pizzeria use. I would suggest increasing the IDY to 0.375% while at the same time adjusting the water temperature to give you a finished dough temperature in the 80 to 85F / 26.6 to 29.4C range, under most conditions this will necessitate the use of 70 to 75F / 21.1 to 23.8C water.

Dough Clinic / Re: Cooling the douhg

JPB;

It sounds like the second pizza might have pulled enough heat out of the deck to allow for a slower bake and indeed more oven spring. Oven spring happens when

the internal pressure within the dough increases sufficiently to expand the dough structure resulting in a greater volume/height and more open crumb structure. Oven spring ceases when the dough structure begins to set due to gelatinization of the starch. A colder than normal oven or baking surface can allow for the increase in oven spring due to the longer time needed for the starch to reach gelatinization temperature or a very hot oven can/will cause vaporization of water in the dough to very quickly cause the dough to expand resulting in what we call oven spring, but this must happen before the starch has a chance to gelatinize, this is why you get a very fast oven spring and usually a somewhat larger cell structure at the high baking temperatures.

Dough Clinic / Re: Pease Porridge Hot, Pease Porridge Cold...

Can you put a piece of aluminum foil on the under side of the stone? I'm thinking that this might reflect some heat away from it, just a thought.

Dough Clinic / Re: Another Green Egg guy with a dough problem

B;

Maybe my approach is too simplistic, but why not just use your existing dough formula, delete the honey and see how that bakes, then if you still feel the need to test a "00" flour go ahead. You might also need to adjust the baking temperature a little too.

Dough Clinic / Re: Another Green Egg guy with a dough problem

TDO:

Increasing the dough absorption by roughly 5% and allowing more time between re-ball and opening the dough would be the first things that I would look at. I normally let the dough balls rest for an hour or more before opening into a skin. When you reference "pre-fermented pizza flour" are you saying that you use a dry sour in your dough? Your formula doesn't show this though, just curious.

Dough Clinic / Re: The secret of big bubbles in a crust.

Barry;

The problem may lie with the 1% diastatic malt that you are using. If your flour is already malted (it will tell you on the bag if it's malted, or it may show that the flour contains malted barley flour, the addition of any more active/diastatic malt will contribute to a softer dough generally accompanied by stickiness. If your flour is not malted, a normal addition of diastatic malt is around 0.25% (assuming a 20 degree lintner value) which is a measurement of enzyme activity in the malt. I would suggest making a dough without the malt to see if that improves the dough, if it does then just switch over to a non-diastatic malt which you can use just like any sugar so there is no limit as to how much you can add except for the impact upon flavor and color of the finished crust. I've used non-diastatic malt at levels high enough to impart a malt flavor to the crust (think malted milk balls).

Dough Clinic / Re: Flat dough balls - too extensible

Since your SD starter is 100% hydration/equal parts of flour and water the starter will be 50% water. The flour that is in the SD starter is not used in the total flour calculation due to the fact that it is pretty well depleted through fermentation and exposure to acids and enzymes.

With 491 grams of total flour, 40% starter (196.4-grams) the starter will contribute 98.2-grams of water to the dough hydration calculation which is 20% absorption based on the total flour weight. If we are looking for 72% absorption subtract 20% from 72% = 52% (this is the % absorption that still needs to be added to the dough

to give you a total dough absorption of 72% (491 X 52 press the "%" key and read 255.32-grams of water yet to be added to the dough. To check our math: $255.32 + 98.2 = 353.52$ if we divide 353.52 by 491 (the total flour weight) and then multiply by 100 we get 72% total dough absorption.

If you just want to see what your existing dough absorption (in bakers percent) is just take the sum of all the water that you are adding to the dough and then add half of the weight of starter that you are adding as water (remember your starter is half water) and divide the sum by the total flour weight (491 in this case) and multiply by 100 to get the TOTAL DOUGH ABSORPTION.

Whew!

Dough Clinic / Re: I need help with MATH to correct a dough formula

Let's see if we can walk through this one;

You total flour is comprised of 50% AP, 25% WW and 25% Bread Flour = 100%

Your starter at 40% should be 40% of these weights: $187g + 152g + 152g = 491g$.
(491 X 40 press the "%" key and read 196.4g of starter)

That 196.4g of starter is comprised of flour + water + yeast? (what is the ingredient composition and amounts used to make the starter?)

That's as far as I can go without knowing what the composition of the starter is.

Also, note the discrepancy in calculated amount of starter. Maybe I'm missing something?

Dough Clinic / Re: I need help with MATH to correct a dough formula

Don:

Actually it is a sugar, but about 200 times sweeter than sucrose and for all purposes it is non-caloric. Unlike some of the other "artificial" sweeteners stevia has a high tolerance to heat so it survives normal baking temperatures quite well. The only impact that you will see from adding stevia to your pizza dough is increased sweetness.

Dough Clinic / Re: Stevia in the dough?

IronJ;

After I responded to your posting I went to the kitchen to stir a crock pot of chili that I was making with all the peppers I had to pick to avoid the frost last week, then I got to thinking about a pizza in the crock pot, the thought that crossed my mind was how will you be able to develop top color on a pizza being baked in a crock pot? If you put the lid on to retain top heat you will also retain moisture/steam and probably make something more like a wet pasta than a pizza, take the lid off and you don't have any top heat at all. Maybe cover with perforated foil to reflect heat back onto the pizza while still allowing steam to escape, but then will the escaping steam lower the "top" temperature to a point where it would still be all but impossible to develop any kind of top bake?

It would be an interesting project.

Dough Clinic / Re: Deep Dish Dough in Slow Cooker

Sue;

I'm located in Manhattan, Kansas, about 350-miles north of you, or exactly 400-miles north of St. Paul, Arkansas. My wife and I are planning to take a long weekend trip down to St. Paul next summer, then with a little luck I hope to make it back down again in November to do some deer population control work. I've got pictures that I've taken in the Boston Range that will absolutely take your breath away, I can't imagine what it must be like in Wisconsin.

Dough Clinic / Re: Flour

Sue;

No, but I used to have some very good friends living there, Efton and Fay Smith. About 2-miles west (towards Green Forest) of Alpena and about a mile south. Efton was born on Barley Mountain (you could see it from their farm) and bought the farm when he and Fay were married (a long time ago). Both passed away a good number of years ago at the nursing home there in Harrison. Folks at the feed store might remember him. I deer hunted all over that area and still continue to hunt down around St. Paul and Combs. Beautiful country!!! You should be in just about full color right now?

Dough Clinic / Re: Flour

That finished crust has what I would call a bread like cell structure that could be caused by any of the following;

- 1) Excessive mixing time (too much gluten development at the mixer).
- 2) Stiff or non-extensible dough that resists oven spring. Increase dough absorption to the 63 to 65% range to see if that improves things.
- 3) The appearance of the raised edge/rim suggests a stiff or under hydrated dough. With sufficient dough absorption your baking temperature is high enough to reapply "pop" the dough during the first few seconds of baking if you have sufficient latent heat in the deck surface (what is the oven deck made of and how thick is it?)

What method are you using to form the pizza skins from the dough balls? Also, you might want to allow the dough to warm to at least 50F/10C before opening it into skins.

Dough Clinic / Re: Airy, puffy rim

Oh WOW! This is a new one on me. Slow cookers/aka crock pots I know from past experience seem to be all over the board with regard to temperature on the "high" setting. The maillard browning reaction doesn't take place until the surface temperature gets up to 350F so I don't think we will get any crust color that way so we will need to turn to caramelization which is achieved through the use of sugars in the dough formula. The sugar can be any type of sugar from lactose (whey) if you don't want the sweetness associated with sugar, or any other sweetener aside from the artificial stuff which doesn't contribute to crust color. How much to add? Going out on a limb here, but I would guess that 5% would be a reasonable starting point. Time, time, time, it will take a fairly long time to bake any kind of pizza in a crock pot and all of that time might really dry the pizza out. If it does, an old trick is to add about 3% rehydrated mashed potato to the dough to help it retain water. Watch for any meats and especially the cheese to oil out. Give it a try and let us know what you find.

Good luck!

Dough Clinic / Re: Deep Dish Dough in Slow Cooker

TBM;

Take away/carry out pizzas are not quite as problematic in the soggy/limp issue as delivery pizzas are, the reason being is that the delivery pizzas are placed in some type of delivery bag/moon bag to retain temperature for delivery where as carry out pizzas are either placed into a bag or into a box which is a lot less detrimental to overall pizza quality than those insulated bags which simply become a glorified sauna for the pizza. Boxed pizzas have vent holes in the box to allow the pizza to "breathe" and bagged pizzas allow the steam to pass through the bag thus

effectively reducing the sogginess issue, unless of course the sogginess is a result of excessive oil being released from the toppings, that becomes a whole different issue requiring at minimum some type of raised platform (ripple sheet, plastic mat) under the pizza to at least partially address the problem. There are at least three different types of crusts that come to mind from your description;

1) Thin crispy crust. This is made from a low absorption dough, typically around 40%. The dough is given significant cold fermentation (several days) to develop flavor and improve the potential for crispiness. This is similar to the type of crust that was so common back in the 50's and to some extent the early 60's. The dough must be opened using a dough sheeter/roller as it is just too tough to open by hand, at least by my hands.

2) Cracker type crust. This type of crust is made something like a long flake (flaky) pie crust where the ingredients are just barely incorporated, not even enough to form a "dough" as we know it, but instead a "shaggy" mass. Using a planetary mixer the mixing time is only around 2-minutes at low speed. The "dough" is scaled, pushed together to form pucks (just like you would do when making pie dough), then best when individually wrapped in stretch film and placed in the fridge to cold ferment for a minimum of two days before opening using a dough sheeter/roller. Just like #1 above a rolling pin just doesn't cut it with this type of dough as you generally end up over working the dough and destroying the unique finished crust properties.

3) Par-baking. Either of the two above crust types can be par-baked for a truly crispy crust that is excellent at retaining its crispy eating characteristics, additionally, just about any type of crust will demonstrate a significant improvement in overall crispiness and retention of crispiness when par-baked. I have a good friend here in Manhattan, KS who owns A.J.'s New York Pizza, it is a slice and whole pie operation and all of the pizzas are made using a par-baked crust which we make ourselves. I live 30-minutes fro the store and when I get home with a pizza it has those same properties that you have described, the pizzas are boxed in a thin, corrugated box with vent holes opened and a sheet of parchment paper under the pizza in the box. Sure, the pizza has cooled down somewhat by the time I get it home, but the texture of the crust far outweighs the temperature (still nice and warm but not hot). Now you know why it is my favorite pizza place.....ever. If you want to know more about A.J.'s you can go to their web site at <www.ajsnypizza.com>.

Dough Clinic / Re: Amazed by this pizza crust:

I can't speak to the manufacturer or the performance of the mixer but the design is sound and it has been in use for a good many years in Europe, Asia, Africa, Middle East and Latin America. The one pictured has a bowl cover to reduce dusting when the mixing sequence is first started which is a nice feature to have.

Prep Equipment / Re: dough mixer good or bad quality?

P;

One of the things that I've seen done in situations like yours is to "deck" the pizza. Leave it on the pan until the toppings are just short of being done, then remove the pizza from the pan and place it directly on the deck to finish baking (usually less than 60-seconds). The time the pizza will need to be decked will depend upon your oven temperature. If you can accept a longer baking time you might also be able to do the entire bake in the pan but at a lower temperature.

Dough Clinic / Re: First time Electric proofer buying. Help!

That is a "sweet" oven! The dough formula I provided should work well in the oven.

Dough Clinic / Re: Dough

P;

I think a proofer/oven is different from what you are referencing. A proofer/oven operated as a proofer with your desired temperature and relative humidity and then after a prescribed length of time operating under those conditions, the proofing phase turns off and the heating elements come on so the unit operates as an oven. These are popular in Europe, but not so popular here in the States.

Are you referencing a warming cabinet? A proofer has humidity controls in addition to temperature controls whereas a warming cabinet only has temperature controls (dry heat). I can't imagine what advantage this might offer over holding the par-baked crusts at room temperature. They won't rise anymore as the structure of the dough is fully set and drying the crusts out doesn't serve much benefit to the finished pizza as the crust will be reheated and dried when the pizza is given the final bake. One of the biggest consumer complaints of a pizza made on a par-baked crust is that of exceptional dryness especially as the pizza begins to cool. The wholesale pizza industry has addressed the problem through the addition of specific gums and fiber to the dough formula to help retain water in the finished (par-baked) crust. The ideal par-baked crust to have is one that has essentially the same moisture content after the finishing bake as the same pizza made using raw dough.

Dough Clinic / Re: First time Electric proofer buying. Help!

Based on the information you provided (dough based on 10-pounds of flour for use in a brick oven). By brick oven I'm assuming that you mean a gas fired, deck oven? Will also assume you want to bake on the deck as opposed to on a screen, disk or pan and that you will be using a planetary type mixer.

Here is a starting formula:

Flour (strong bread or pizza flour 12.8 to 13.7% protein content): 100% (10-pounds)

Salt: 1.75% (2.8-ounces)

IDY: 0.375% (0.6-ounces)

Oil: 2% (3.2-ounces)

Water: (70 to 75F) 68%/variable (108.8-ounces/6.8-pounds)

Procedure:

Put water in mixing bowl, add salt, flour and IDY.

Mix at low speed just until the flour is hydrated (about 2-minutes) then pour the oil into the dough.

Mix at low speed or medium speed just until the dough is smooth.

Desired finished dough temperature: 80 to 85F.

Take dough directly to the bench for scaling and balling.

Place dough balls in plastic dough boxes, wipe the tops of the dough balls with oil and cross-stack in the cooler for 2.5-hours.

Down-stack the dough boxes or lid for 24 to 48-hours cold fermentation.

Remove dough balls from the cooler, leaving them covered and allow to warm to 50F before opening into pizza skins. Dough will be good to use at room temperature for 3-hours.

Open dough into pizza skins by your preferred method, place skin on lightly dusted peel and dress top the order, take directly to the oven for baking.

Any unused dough balls can be opened into skins and placed on pizza screens and stored in a wire tree rack in the cooler (cover with a food contact approved plastic bag to prevent drying). The dough can be held like this for use later in the day.

To use pre-opened skins, remove from cooler as needed, invert the skin off of the

screen onto a lightly dusted peel, finish stretching out to full diameter, dress and bake.

Dough Clinic / Re: Dough

Sue;

Off topic, but what part of Arkansas are you located in? I'm familiar with N.W. Arkansas, especially Alpena, Rudd, Metalton, Huntsville, St. Paul, and Combs.....Just curious. I know there's a lot more to Arkansas than that little piece of Arkansas real estate.

Dough Clinic / Re: Flour

Peter;

As you know, when dealing with volumetric portions the weights of those portions can be all over the board due to the technique employed in portioning the ingredient. This is why I think it is best for Sue to portion the ingredients by her method, using her portion containers, and whatever else might influence the weight of the portion. Once we have those portion weights we can convert the recipe to a formula in bakers percent. If you add up the total bakers percent and divide by 100 you can use this number to determine the flour weight needed to make the new dough size. In this case the dough size would be calculated as total dough weight divided by 55 (number of pizzas presently made from the dough) times 4 (the number of pizzas she wants to make), then divide this new dough weight by the total bakers percent of the dough formula to find the amount of flour needed to make the new (smaller) dough size. Once we have the new flour weight we can use bakers percent calculations to find the weight of the other dough ingredients.

Dough Clinic / Re: Sue's Pizza Dough

Sue;

I'll toss my hat into the ring too. Your dough recipe cannot be accurately reduced in size as it is presented. What I would ask you to do first is to provide us with the weights of each ingredient which you are presently portioning volumetrically, once we have those weights the recipe can be changed into bakers percent, once converted into bakers percent the formula can be accurately manipulated into size you want. If you want the formula sized for a specific number of pizzas we will also need to know the dough weight for each pizza as well as the number of pizzas you want to make from the dough.

Dough Clinic / Re: Sue's Pizza Dough

Not really, there might be minuscule differences in weight for a given volume of flour but for all practical purposes, all flours of a given type will weigh the same per given volume. The only volumetric differences in weight that are normally, and correctly, considered are between scooped, sifted and packed.

Dough Clinic / Re: Flour

JPB;

I normally consider them as part of the mixing process as they do aide in gluten development.

Dough Clinic / Re: Bench rest too long !!

Actually, you don't need to give up on that great flavor for the consistency gained by taking the dough balls to the fridge sooner, just allow for more cold fermentation time. Some posters here will allow their dough balls to CF for a week

or more which by nature would develop great flavor and also provide a reasonable level of consistency. This is where the fun part of experimenting with pizza comes in.

Dough Clinic / Re: Bench rest too long !!

JPB;

As the dough ferments and the yeast produces carbon dioxide and alcohol (acids too but that's another story) within the air nuclei created during mixing, those nuclei expand and effectively create dead "air" spaces which we all know is a great insulator. The entire dough expands so it is really just one big insulated mass, as we place the dough back into the fridge it is all but impossible to effectively cool the mass due to the insulating properties of the expanded cell structure, and keep in mind too that as long as the dough is fermenting it is also generating heat (heat of fermentation) which unless extracted from the dough will continue to drive fermentation. Placing a dough ball back in the fridge will chill only the outer portion of the dough ball which might temporarily improve the handling property of the dough during the shaping process, but to put it back in the fridge for another day will just result in another day of fermentation.

If the dough is managed properly for extended cold storage/cold fermentation the dough is placed into the fridge and left exposed to the cold air as soon as possible after mixing (we recommend within 20-minutes) at which time there is little fermentation taking place so the cell structure is still very dense (cut a just mixed dough and you will see what I mean) this dense dough has poor insulating properties so it is easily chilled to 40 to 45F at which temperature fermentation is well controlled and a relatively long (several days) refrigerated shelf life can be expected without the dough becoming excessively gassy. On the other hand, allow the dough balls to bench rest for an hour or more before placing them in the cooler/fridge and fermentation begins to take off after about 20-minutes so by the time the dough balls actually go to the fridge they have developed pretty efficient insulating properties and cooling the dough through to the core of the dough ball becomes problematic if not impossible so long refrigerated shelf life is not possible. The kicker in this case is that as the dough continues to ferment in the cooler/fridge the cell structure continues to enlarge making the dough an ever increasingly better insulator which makes it even more difficult to thoroughly cool, it's a spiral that creates a dough with a fairly short shelf life (unless you really want a strong fermentation flavor, which in some cases is not a bad thing) but due to the effects of the acids formed during fermentation and the enzymes present in the yeast the dough will feel wet and sticky and may collapse when placed in the oven.

Dough Clinic / Re: Bench rest too long !!

Pizza Garage;

Not to worry, as long as you have yeast or a cultured leavening system in the dough you're in good shape. It's when the finished dough temperature is above 90F and you don't have commercial yeast or a cultured leavening system that the gate can be left open for unwanted bacterial growth which can result in at the very least a "different" flavor profile than expected in the finished crust. This is not so much of a problem when the finished dough temperature is below 90F. There is a reason why laboratory incubators are set to operate in the 90 to 100F range, it promotes the growth of a broad spectrum of bacteria. The addition of our added leavening allows for selective microbial population of the dough resulting in the anticipated dough performance and flavor profile.

Your rest period appears to be more of a hydration period for the flour, and when combined with a short mixing time and cold fermentation period results in bio-

chemical gluten development which results in a well developed gluten structure but unlike mechanically developed gluten is very soft and relaxed allowing for good expansion properties (oven spring) in the oven promoting a very open, light textured crumb structure. This is a procedure that is very similar to a home made dough process that I used to teach to local farm wives. Stir all the ingredients together in a bowl using a wooden spoon (this prevents the dough from being over mixed), remove the spoon and scrape the dough out onto a lightly floured surface, place the dough into an oiled container (the mixing bowl works well) and allow the dough to hydrate for about 30-minutes (time not critical) then turn the dough out of the bowl and knead just a couple times, place the dough back into the oiled bowl, lightly cover and allow to ferment several hours or until you're ready to use the dough for making bread or pizza crust. I have a copy of it posted in the PMQ Recipe Bank if you'd care to see it.

Sounds like you're on your way to making some great deep-dish pizzas!

Dough Clinic / Re: Is there anything wrong with this mixing and resting procedure

Putting a fermented dough ball back in the fridge really doesn't do much for the dough except to allow it to continue fermenting. The reason for this is due to the open cell structure of the dough which insulates the dough and inhibits any significant temperature change, thus allowing it to continue fermenting. If the yeast level is high the dough can/will respond accordingly during the bench time by fermenting at a faster rate due to the higher yeast level, hence in that case bench time tolerance would be less than for a dough made with a lower yeast level, then too, a dough made with a higher absorption level will become noticeably softer with extended bench time than a dough made with a lower absorption. Without full knowledge of the ingredients used, dough formulation, and dough management parameters used it is really difficult to assess accurately what might have happened.

Dough Clinic / Re: Bench rest too long !!

Also, what can you tell us about the flour that you have available to work with. Assuming you have access to a walk-in cooler? How do you plan to hold your dough? Do you have dough boxes? How long do you want to hold your dough in the cooler? What type and size of dough mixer do you have to work with? Ohhhh, so many questions.

Newbie Topics / Re: I need a good dough recipe ASAP!!!!

That reach in looks pretty tight with those dough boxes which probably makes offsetting them (substitute for cross stacking when using a reach in cooler) difficult and probably not as effective as one might like it to be. This would lead me to think that bagging the dough balls in individual food bags and placing them on aluminum sheet trays would work better for you. Just lightly oil each dough ball, drop it in a food bag and twist the open end into a pony tail, tuck the pony tail under the dough ball as you place it on the tray. Whatever your minimum cold ferment time is, divide that by two and down-stack the trays in the cooler at that time then allow to cold ferment until the normal time is achieved. This should give you a more consistent cold ferment.

Dough Clinic / Re: Consistency problems

LB;

If you will e-mail me at <thedoughdoctor@hotmail.com> I will be glad to send you a copy of my Dough Management Procedure that I've developed for pizzeria

application. Can you tell us something about your store concept too?

Dough Clinic / Re: Please help

75 to 80F is a good temperature to shoot for. Your mixer is indeed a spiral mixer. What is the bowl capacity of your mixer? The reason why I ask is because spiral mixers are very tolerant of dough size, meaning that you can mix a dough that is rated for full mixer capacity or 50% of mixer rated capacity without the need to adjust the total mixing time. The minimum size dough that is recommended for spiral mixers is 25% of rated capacity. Since pizza dough is very under mixed to begin with, it is doubtful that you are under mixing the dough. The best way to describe a fully/properly mixed pizza dough is to say that it is mixed just until it begins to take on a smooth, satiny appearance, at that point the dough is fully mixed. This is a lot different from what you might be used to doing with a bread dough which is mixed to a much greater level of gluten development and extensibility. One thing that you said struck a chord with me, you said the problem you are having looks "like a fat ring". I've seen that problem literally hundreds of times and if it is the same thing that I'm thinking it is, the problem is due to collapse of the crust (insufficient bake time). Without making any other changes, bake the pizza as long as you can, even a few seconds will help, and let us know if you see any improvement.

Can you send a picture of the problem you are experiencing, just to make sure we're on the same page.

Dough Clinic / Re: Consistency problems

Question, with your spiral mixer, why are you mixing your doughs for different lengths of time? Also, what is your finished dough temperature?

If the dough temperature is too high for your dough management procedure the yeast could possibly consume all of the sugar added to the dough formula in turn producing more acid (a by-product of yeast fermentation) which in turn would hinder crust color development, but this would give the problem across all of the crusts made from that specific batch, which you say is not the case, so we can probably take that off of the table for now, inconsistent crust browning as well as limp/soft areas in the crust are more consistent with the way the dough is opened into skins than anything else. Areas that are overly thin do not brown as well as thicker areas of the crust and a double whammy they quickly absorb moisture from the top of the pizza making the problem even worse.

Dough Clinic / Re: Consistency problems

Lydia;

Most of the wonderful aroma coming from the dough are produced by the live yeast doing what they do best feeding and generating carbon dioxide and alcohol, a process we refer to as fermentation, once baked, all yeast has gone through the thermal death point of roughly 145F so at that point all yeast in the dough is dead. The dead yeast that I was referencing as a reducing agent is a commercial product made by the yeast companies for producing a softer, more relaxed dough consistency. It is sold in a dry, powder form somewhat resembling vital wheat gluten, but it has just the opposite effect upon the dough.

What you have described sounds like nothing more than a gas bubble forming in/on the dough, trust me when I say this, when a dough is broken down (slack/runny) it can be poured out of the mixing bowl. The gas bubble would explain also why it developed so fast. You say that you are using liquid soy lecithin in place of oil and eggs, exactly how much lecithin are you adding based on the flour weight?

By the way, don't fret the barometric pressure thing, bakers don't begin to make

formula adjustments until there is a difference of 2,500-feet in altitude, and even then the adjustments are very small, but when we start looking at a difference of 5,000-feet the adjustments are rather extensive and when you get to a 10,000-foot difference things begin to get a little problematic with all the changes that need to be made.

Ask the power company to put a monitor on your incoming power line. This will continually monitor the line for any surges or drops in power over a period of a week or more. If they don't find anything out of the ordinary the problem is most likely inside your home so it will be time to call an electrician to have things checked out, probably not a bad thing to do anyway as you said you are having other electrical issues too.

Off-Topic Foods / Re: Barometric Pressure HELP -- What's my boiling point?

Lydia;

Gas or electric stove? I'm in agreement that in all probability it isn't the humidity, barometric pressure or your specific altitude that is giving you fits. With those beans, a loss of gas pressure or voltage coming into your home could cause those problems of inconsistent cooking times. Try this, pick out a pot, any pot will do. Put 2-cups of your coldest tap water into the pot (be sure to use a thermometer to measure the water temperature after you have poured it in the pot), then place the pot of water on your range and turn the burner to the highest setting, watch the pot as it heats up and make a note of the time that it takes to come to a rolling boil, repeat this on several different occasions and see if there is a significant difference in the time that it takes for the water to come to a full, rolling boil. If you find a significant difference you will need to discuss this with your utility company to see if there is a problem with the gas or electric coming to your house. If your range is gas you might also be experiencing a problem with the gas regulator.

As for a dough that is perfectly good and easy to handle and within 4-minutes turns into a slurry, the only thing that I can think of that would do that in that short of a time is a reducing agent like L-cysteine/PZ-44, glutathione/dead yeast, or a proteolytic enzyme (the most common one that we encounter in the home is papain (this is the enzyme found in pineapple and papaya) this enzyme aggressively hydrolyzes protein and can turn a dough into a slurry in just a couple minutes. This is why both pineapple and papaya are served after a meal to help digestion.

Let us know what you find out.

Off-Topic Foods / Re: Barometric Pressure HELP -- What's my boiling point?

Danny;

If you opt to pre-hydrate the IDY I would suggest that you hydrate it in just a couple ounces of 95F (measure with a thermometer) allow it to hydrate for 5-minutes, then add it to the mixing bowl along with the cold water (no fear of harming the yeast as it is now already hydrated. I use the cold water rinse out the yeast container too. By putting all of the water in the bowl first you will significantly reduce the overall mixing time. Try this in your spare time:

Put the water in the bowl along with the hydrated IDY, add the salt and any sugar (honey), add all of the flour and begin mixing just until the flour is completely hydrated, then add the oil and mix until the oil is incorporated. If you are using a mixer, mix the dough about 5-minutes more at low speed, if mixing by hand, allow the dough to rest for 30-minutes, then knead until the dough begins to look smooth, check the dough temperature (80 to 85F) or whatever temperature you find works best for YOU. 80 to 85F is a good temperature but some like to use a colder temperature. Whatever temperature you use, the important part is to keep that temperature CONSTANT for all of your doughs, all of the time. Take the dough

directly to the bench and cut/scale into desired weight pieces, form into individual balls, wipe lightly with salad oil and place into individual containers or a dough box. Place into the fridge uncovered for 3-hours, then cover until ready to use. To use the dough, remove from the fridge, leaving the container(s) covered, allow the dough to temper AT room temperature until the dough reaches at least 50F. You may want to experiment with this temperature too as it will vary with your procedures. Open the dough balls into pizza skins and dress as desired.

Dough Clinic / Re: Help in the Hot and Humid days!

Carl;

No, it's not the same as re-ball the dough piece. By re-ball the dough you effectively re-orient the gluten structure making the dough somewhat stronger. This is why we never re-ball the dough just before we open it into pizza skins, to do so will make the dough tough and elastic making it more difficult to shape without excessive dough memory.

Dough Clinic / Re: Bench rest too long !!

I can see a couple of options;

1) After the normal bench time you could have proceeded to make the skins and place them on something (pizza screen for example) or a dinner plate, with some dusting flour and immediately placed them in the fridge. That would have slowed down the fermentation rate sufficiently fast to allow the skins to be held for several hours.

2) Depending upon your flour strength you might have re-balled the dough every two hours or so, as necessary, this doesn't stop or slow fermentation, but it does a lot to re-strengthen the dough, in this case possibly enough for you to pull it off, but if you are using Caputo or all-purpose flour there may not have been enough protein or the protein might not have been strong enough to hold up through all that fermentation abuse (acids and enzymes will take their toll on the flour proteins).

Dough Clinic / Re: Bench rest too long !!

Danny;

Two things that I would advise against doing, don't add the IDY to the cold water, in addition to potentially harming the yeast you can also leach out glutathione from the yeast which will have a softening/weakening effect upon the dough much like L-cysteine/PZ-44. It is recommended that you either hydrate the IDY in a small quantity of 95F water before adding it to the dough, or if using a mechanical mixer add it into the dry flour or add it right after you add the oil. Covering the dough containers will only trap heat inside the container resulting in weakening of the dough due to over fermentation or excessive heat build up, it also traps moisture in the dough resulting in a very sticky dough when you go to use it. A better approach might be to lightly oil the dough balls then leave the containers open for about 3-hours in the fridge, then cover for the remainder of the cold fermentation period. This also adds to the consistency of the dough for more effective dough management.

Dough Clinic / Re: Help in the Hot and Humid days!

Danny;

It is not the humidity that is causing your problems. Commercial bakeries can be cold and dry or very hot and humid, and they never make any adjustments to the dough absorption based on temperature or humidity.

Without a lot more information on your dough formula and dough management

procedure it is impossible to say for sure what might be happening, but here are a few culprits;

- 1) You volumetrically portion your dough ingredients as opposed to weighing them.
- 2) You are using oil in the dough as opposed to shortening and you are mixing it with the water at the time of addition.
- 3) You are not tracking and maintaining a consistent finished dough temperature.
- 4) Your finished dough temperature is too warm for the dough management procedure you are using.
- 5) You are placing your dough/dough balls into a tightly sealed container when you place them in the fridge.

If you can provide more specific information it will help me to provide more specific direction.

Dough Clinic / Re: Help in the Hot and Humid days!

Pizza Boy:

I concur with Got Rocks. I like to go for consistency whenever I can.

Dough Clinic / Re: When making 4 dough balls.

I like to use equal parts of corn meal, semolina flour and regular flour for my peel dust, I open the dough on the bench/counter top and place it on the peel (wood peel) for dressing, then give it a shake as I take it to the oven just to ensure the dressed skin is loose on the peel, then peel the dressed skin onto the stone for baking. I use a metal blade peel for my oven peel used to remove the baked pizza from the oven.

General Pizza Making / Re: Best way 2 prepare & slide pizza onto a pizza peel (paddle) ?

Works fine, finished crust is not quite as crispy as is possible when oil is used, but not much not to like about it. One of my personal favorites is to use bacon grease which my wife saves in a cup near the stove after making bacon. I even use it in the dough too, in fact, I even like to use it when I make home made bread, and for a special treat, I use it like butter on dark rye bread sprinkled with a little Kosher salt. Like a good friend of mine always says "Everything goes better with beer and bacon." Bacon grease included.

Stones/tiles/steel, Pans & Accessories / Re: Blue Steel plus Lard

Two options come to mind:

- 1) Increase the oil content to the 3 to 4% range. Oil is a tenderizer so it helps to make the finished crust more tender eating.
- 2) The other option is to allow the formed skin to rise more between opening the dough ball and dressing it to bake. This added proofing stage will give you a more tended eating crust characteristic.

Dough Clinic / Re: Lighter airier crust

If they are both the same weight they should perform similarly.

Stones/tiles/steel, Pans & Accessories / Re: Steel vs Aluminium (Aluminum)

The best way to freeze dough balls is to mix the dough as you normally do, then immediately after mixing scale and ball the dough, flatten the dough balls so they look something like a hockey puck (1.5 to 2-inches thick) lightly wipe the "dough puck" with oil and place in the freezer. Allow the dough to remain in the freezer unwrapped for at least 2-hours, three is better, then place into a plastic bread bag

for storage. To close the bag, twist the open end into a pony tail and secure with a twist tie. The dough will keep in the freezer for 3 to 4-weeks. To use the dough, remove from the freezer, remove the twist tie from the package and tuck the pony tail under the dough ball as you place it in the refrigerator for 24-hours. Remove the dough ball from the fridge and place at room temperature for 60-minutes, then place back into the fridge for 24 to 36-hours. To make a pizza skin, turn the dough out of the bag by inverting the bag (if you oiled the dough ball it will come out easily), into a bowl of dusting flour and proceed to open the dough in your normal manner.

The "cheap" way to freeze dough balls is to just flatten the balls into a puck shape, oil and place into individual bags and place in the freezer. Expect 10 to 15-days frozen shelf life by this manner. To use the dough just transfer to the fridge for 24-hours then place at room temperature until the dough reaches 50 to 55F and open into pizza skins by your preferred manner.

Dough Clinic / Re: Freezing dough balls

I think you answered your own question in your last sentence. 450F is most decidedly on the cool side, especially if you are not using some type of baking surface aside from the pan (which, by the way, should have a dark anodized finish or be well seasoned). It would help if you had a pre-heated steel plate (0.25" thick) or a tile/stone deck to provide sufficient latent heat to properly bake the bottom of the pizza. The amount of sauce applied to the dough can also impact how the crust bakes, I normally start with 3-ounces of sauce for a 12" diameter pizza and slowly work up from there if I need to. For cheese start with 4-ounces and work up from there. It looks like the type of crust that you are trying to make is what I would describe as a thin crispy. While the dough absorption is 52%, when considered along with the amount of flour that is being incorporated into the dough post mixing, I'm betting that the actual dough absorption is at least 5% or more lower so you are getting very little oven spring making it even more critical to have a good strong bottom heat in your oven to get a decent bake.

On a separate note:

Since you are using ADY rehydrate it in 100 to 105F water (not 85F) and allow it to hydrate/activate for about 10-minutes or until it begins to bubble. Then to improve your process you might try the following; Add the water to the mixing bowl along with the activated ADY, then add all of the flour followed by the salt and sugar, mix at low speed until all of the flour is hydrated then add the oil and mix for one more minute at low speed, now you can mix your dough for an additional 5-minutes or so until it begins to look smooth, now you can handle your dough as you presently do from that point on.

Dough Clinic / Re: Problem with Bottom Layer of Crust

Literally translated: yeast + emulsifier. Many times the yeast will be combined with ascorbic acid to counter the "negative" effects (dough softening) of the small amount of glutathione resulting from the drying process and probably a little too from the rehydration of the IDY. Performance wise I would expect this yeast to exhibit normal fermentation properties while producing a slightly softer, more extensible dough characteristic.

Dough Ingredients / Re: Saf Pizza yeast

Hondabbg:

Am I correct in assuming that you are freezing a "dry" mix as opposed to dough? If you are freezing a dry mix as my assumption is, and if after making a dough and subjecting it to a period of cold fermentation the dough balls flatten excessively, the

only thing that immediately comes to mind is that you might be using water that is too cold to make the dough, for example ice water as opposed to water at 70 or 75F or a little warmer. Now, if you were using ADY (active dry yeast) that would explain everything as it does not like to be included in a dry mix and the poor rate of rehydration in the dry mix allows glutathione to be leached out of the yeast for quite some time after the water is added to make the dough.

Can you provide us with your complete dough management procedure (everything you do to/with the dough from mixing to baking)? There might be something in the dough management procedure that is causing the problem too.

Dough Clinic / Re: Freezing yeast

In their commercial IDY's SAF has a green label yeast which, if I remember correctly, is developed specifically for use in making frozen dough. This IDY might be related to the other commercial green label IDY. If anyone can get a sample of it I'd sure like to see how the package ingredient deck reads

Dough Ingredients / Re: Saf Pizza yeast

You don't mention what kind/type of yeast that you are using so I will assume it is IDY (instant dry yeast) as it is the only one that you can effectively use in a dry mix as proposed. In this case the yeast is not yet hydrated so it has much better stability in the freezer. Many years ago I did a study using IDY subjected to different storage conditions to see just how robust it actually was. When the yeast was stored in a freezer (unopened package) we terminated the test after two years and found it to be essentially as good as it was when we started the test. We also looked at the yeast when it was incorporated into a dry mix the yeast still had a very decent shelf life of nearly 90-days before the activity fell off to 75% of what it was when the test was started. Based on my findings a good friend of mine who was working as a formulator for a commercial dry mix manufacturer began using IDY in their dry mixes with a 60-day refrigerated (not frozen) shelf life. In short, you should be able to make a dry mix using IDY and hold it under frozen conditions for at least 90-days, and depending upon what you are willing to accept as a finished product, possibly longer.

Dough Clinic / Re: Freezing yeast

That very well could be your problem. Try taking the dough directly from the mixer to scaling, balling and refrigeration to see if that helps.

Dough Clinic / Re: Slowing down fermentation

Pie Eye;

It might be in the way you are managing the dough. The steps that you have taken are the correct ones for slowing down the rate of fermentation, but if there were another factor involved this would explain the results you have seen. The factor I am referring to is the rate that the dough is being cooled down at. For example, we see the same dough failure after 48-hours in retail pizzerias when the boxes of dough are not cross stacked in the cooler, or when the dough balls are allowed to set out at room temperature for an hour or more before being placed in the cooler. Failure to cross stack the dough boxes traps air in the box creating a dead air space around the dough balls which is an excellent insulator then add to that the fact that fermenting dough typically gains about 1F in temperature for each hour it is allowed to ferment (heat of fermentation) and you can see how difficult if not impossible it is to regulate fermentation. By cross stacking the dough boxes the heat is allowed to escape for the first three hours in the cooler which allows the dough temperature to drop to a temperature where fermentation can be controlled.

In the other case where the dough balls are allowed to ferment at room temperature for an hour or more before being placed in the cooler the dough becomes less dense (more open and porous) making it a better insulator so now when the dough is placed in the cooler it is again much more difficult to cool internally to a point where fermentation can be effectively managed and shelf life in the cooler is significantly reduced. So, what can you do? Immediately after mixing your dough scale and ball it, then wipe the dough ball(s) with oil and place it in a container in your fridge BUT DO NOT lid the container, instead, leave it unlidded for about 3 or 4-hours, then apply the lid and you should be good to go for three or more days in the fridge. What I do is to place the oiled dough ball into individual plastic bags (bread bags) but DO NOT seal the bags closed, instead, twist the open end of the bag into a pony tail and tuck the pony tail under the dough ball as you place it on the fridge shelf. The plastic bag is such a poor insulator that it allows the dough ball to cool naturally just as it would if in an uncovered container, but now you don't need to come back to it later to cover. Those bagged dough balls should be good for the better part of a week if made with a sufficiently strong flour (13% protein content).

I hope this helps.

Dough Clinic / Re: Slowing down fermentation

Steve;

Your pan looks like something from Lloyd Pans. I'm guessing that it is a proprietary pan made for someone with a specific need. You might direct an e-mail along with a few pictures to Paul Tiffany at Lloyd Pans <ptiffany@lloydpans.com> to see what he has to say. I know that other pans of this type are designed so the pizza can be fully baked in the entire pan, when the pizza is removed from the oven the pan is placed on an elevated platform to support only the center section, the outer ring then falls away making it easier to remove the pizza from the pan. I've only seen this done with deep-dish pans since a shallow pan like yours is so easy to remove the pizza from, but you never know. I'd ask Paul to see what he has to say.

Stones/tiles/steel, Pans & Accessories / Re: What kind of pan is it and how is it used?

The ingredient percentages (bakers percent) in the dough are based on the total flour weight, so as long as the flour weight remains constant you should not need to change the salt or any other ingredient due to a reduction in dough absorption.

Dough Clinic / Re: salt level

Oops! That should have read to slice the tomatoes about 3/16-inch NOT 6/16.
Blame it on old age.

(Moderator note: fixed in original)

Sauce Ingredients / Re: best way to use fresh tomatoes

Essen 1;

My comments were referencing the Montague deck ovens.

Shop Talk / Re: Montague Hearthbake ovens

As many of you know, fresh tomatoes are my "go to" excuse for pizza sauce. I never use sauce when I can use fresh, vine ripened tomatoes. Thin slice the tomato about 3/16-inch thick, place on absorbent towels to pull the excess moisture from the cut slices. To use, brush the pizza skin with a very light application of olive oil (this creates a moisture barrier between the fresh tomato and the dough) I then apply

fresh sliced or minced garlic (about a tablespoon for a 12-inch pizza) then a few fresh basil leaves and cover with the tomato slices, apply cheese and other toppings as desired. At my end of the table you will also find cut slices (media luna) of fresh tomato as one of my requested toppings, they're that good. :)

Sauce Ingredients / Re: best way to use fresh tomatoes

For bright steel pans try American Metalcraft <www.amnow.com> the bright steel pans can be seasoned to bake equally as well as the blued steel pans. Another option is to check out some used bakery equipment suppliers as commercial cake pans can be had in tin plate steel with a dark colored "bake-prep" finish which is usually a very dark green in color you can usually fine these in sizes from 7-inch up to about 12-inches in diameter, usually in rounds but I have also seen them in a square format.

Stones/tiles/steel, Pans & Accessories / Re: PAPROD no longer carrying blue steel pans

I've worked with them a number of times and never experienced any problems and the restaurants that

I've opened that had them have never reported any problems.

Shop Talk / Re: Montague Hearthbake ovens

If you go with grinding your own organic flour remember that you will need to start with organically grown wheat.

Shop Talk / Re: Organic Pizza in NYC

From your description it sounds as if the dough might be over fermented to the point where it is becoming "bucky" (exhibits too much elasticity). To see if this is the problem try opening the dough four or five hours sooner. If that works try reducing the finished dough temperature by about 10F from where it's at right now. That will effectively slow fermentation allowing you to use the same time but get less fermentation within that time.

Dough Clinic / Re: Dough tears when stretching

When using ADY, it should be hydrated in approximately 5-times its weight of water at 100 to 105F. The amount of water is not as critical as the temperature of the water. Water that is too hot can kill the yeast while water that is too cold can pull glutathione out of the yeast cell as they rehydrate thus severely impairing their ability to ferment as well as producing soft, sticky or inconsistent dough texture. IDY on the other hand does not need to be rehydrated IF the dough will be mixed by machine for more than 4-minutes. If the dough is mixed for less than 4-minutes, or mixed by hand, it should be pre-hydrated. To hydrate IDY it is recommended that you use 95F water (temperature is much more important when using IDY). Water that is too cold will extract a significant amount of glutathione from the yeast with the same results as indicated above for the ADY. When using compressed yeast it can be added directly to the mixing bowl just like IDY if a machine is used to mix the dough BUT if the dough will be mixed by hand, it should be suspended in a portion of the dough water (temperature is not critical if the water temperature is between 45 and 105F) to ensure proper distribution throughout the dough mass.

General Pizza Making / Re: Tough Dough

Wood dough boxes as well as wood bagel boards are essentially a thing of the past, at least from a commercial point of view. There are a number of reasons for this,

they tend to splinter and guess where the splinters end up? They develop cracks and joint gaps which make them impossible to clean properly, the porosity of the wood can trap bacteria (good and bad). Some time ago I came across an article showing that with reference to the bacteria concerns, wood might actually be better than the materials used to replace it, ain't that always the case? With that in hand, try to convince the local health inspector....lotsa luck! Some of the better dough boxes are from WRH Industries, Ltd. (Paul Bartley) <pbartley@wrh.net> or <www.wrh.net> for their web site. In addition to making the large deep and shallow dough boxes they also make what they refer to as a half size dough box which is small enough to fit onto a home refrigerator shelf. They also sell a special plastic scraped that has the same radius as the box making for easy cleaning and dough ball removal without fear of damaging the box.

Prep Equipment / Re: Marsal Wooden Dough Boxes

Peter;

I'm, in total agreement with what you have said, I would like to add the following; The soft, sticky dough is an excellent indication that a good portion of the yeast has been severely damaged by the very slow freezing process (home freezer combined with a warm dough temperature). This very slow freezing rate is extremely deleterious to yeast quality in the dough. The soft sticky nature of the dough is most likely being caused by the release of glutathione (think of "dead yeast" as a dough reducing agent much like L-cysteine/PZ-44) from the yeast. Then, as you state, there is not enough viable yeast present in the dough to support active fermentation. A good suggestion for anyone making dough to freeze is pre-hydrate the yeast (both ADY and IDY) in a small portion of 100F water, then use all cold/ice water to make the dough. A good temperature range for dough which is to be frozen is 65 to 70F, then rather than trying to freeze the dough as a dough ball, flatten the dough balls so they look something like a hockey puck, this reduces the cross section/thickness making the dough easier and faster to freeze. I like to lightly oil the flattened dough ball and then wrap it in stretch wrap or bag it as I place it in the freezer. The last work that I did at AIB was to find the best way to slack-out/thaw frozen dough. I found that the dough performed best when slacked out in the refrigerator for about 18-hours, then removed from the refrigerator/cooling unit for about 1-hour (70F ambient/temperature, time may vary with ambient temperature) until the dough reaches 50 to 55F, it is then placed back into the fridge for use on the following day. The reason for all of this manipulation is that as you have indicated the frozen dough has little if any fermentation time, so once it is slacked out it is much like a cold 50 to 55F dough coming right off of the mixer, then, that extra day in the fridge allows the dough to cold ferment for about 24-hours (time not critical), from that point on the dough is handled in a pretty normal manner which for me is to remove the dough from the fridge and allow it to temper at room temperature to 50 to 55F before beginning to open the dough into pizza skins.

I hope this adds a little wood to the fire.

Dough Clinic / Re: Dough does not rise after freezing

Normally when the finished crust is too tough it is an indication of insufficient fermentation which can result from any of the following as it pertains to your dough formula:

- 1) The ADY not being per-hydrated, or not pre-hydrated correctly.
- 2) Flour too strong.
- 3) Finished dough temperature too low/dough too cold after mixing.
- 4) Using a sheeter to sheet the dough too thin.

5) Insufficient dough weight for the diameter being made.
6) While the dough absorption looks ok for this type of crust, increasing the dough absorption may yield a lighter textured, and slightly more crispy finished crust. If you are trying to make a Chicago style thin crust, I've personally never seen a Chicago thin crust that was crispy, in fact it is characteristically limp and much like eating pizza toppings on a piece of wet pasta. The only part of the pizza that even comes close to resembling crispy are the four corners of the party cut pizza. With that said, if you par-bake the crust and use that for the base you can have a Chicago style thin crust pizza that is reasonably crispy, even when dressed Chicago style.

General Pizza Making / Re: Tough Dough

Since your "00" flour is un-malted the addition of diastatic malt makes sense, however you are now getting color at a lower temperature than what the flour is intended to be used at. At your low baking temperature you could probably get away using a domestic bread type flour with about 12% protein content. If the new flour is malted you won't need to add any additional malt, and it is not recommended. Using a malted flour you will be able to bake the pizza longer to achieve a crispier finished crust. Also remember that if you are adding the malt for flavor, use a non-diastatic form of malt. I'm thinking that the diastatic malt that you are adding is resulting in a faster crust color development, hence a shorter bake as you are most likely baking to crust color. Using a malted flour and no added sugar, milk, or eggs in the dough formula will allow you to bake the pizza for the longest time to develop the crispiest texture without excessive crust color development.

Dough Clinic / Re: Crispy crust

Jersey Pie Boy:

Before you can even begin to address oven spring issued you have to be able to control your dough management through dough temperature. If your dough temperature is consistent and you process the dough the same way every time, for example, mix, directly to the scale for portioning and balling, then into containers and into the fridge (maintained at a constant temperature) you should have good dough management, meaning that your dough will perform in a predictable manner time after time (you must also hold up your end of the bargain too by being accurate with your scaling weights). With dough management under control, here are some things to look at with regard to oven spring;

Fat: increases oven spring potential by providing better dough lubrication and gas retention.

Water: Increasing the water content of the dough will allow for a more fluid dough which will exhibit greater oven spring.

Yeast: Contrary to popular belief, yeast does not have as much impact upon oven spring as one might think, so just increasing the yeast a little will have minimal impact upon oven spring.

Oven Temperature: Can have a major impact upon oven spring as it provides for rapid vaporization of water as well as expansion of the leavening gas and alcohol before the dough begins to set.

I could probably go on and write a book on oven spring, but these are the main drivers that we typically adjust to achieve the oven spring we're looking for.

New York Style / Re: Explosive dough at 48 hrs and tame at 72 hrs. Any Ideas?

Actually, they don't look too bad for three days. Can you provide us with your dough formula and dough management procedure? This would help in making a

determination if you will need to make any changes and where the changes might need to be made.

Dough Clinic / Re: Pizza Dough balls not maitaining shape

Depending upon your actual dough formulation, you should be able to mix a dough based on as much as about 4,500 grams (2.5 Kg) or almost 10-pounds of flour weight. With an average total formula percent of about 170% (sum of all ingredient percentages) you should be able to make around 17-pounds of dough in a single mix. Remember, pizzas doughs are best when only mixed until they have a smooth appearance. The beater attachment which I saw in the photo will work well for blending ground meat. Like I said, you will be the envy of every pizza maker, or baker for that matter, on the block.

Prep Equipment / Re: Welbilt 20 Qt Mixer

If you would care to share your dough formula and dough management procedure we might be able to recommend some changes that would improve the way the dough opens into a pizza skin, then you might not need to pre-stretch.

Shop Talk / Re: Small One Man Wife Operation Question: Can I pre-stretch the dough?

Don;

They don't do it by design, it is a fairly common problem that many new operators have. Liability is a major concern of all pizzerias. When a person walks into a major chain store and orders a pizza, then bites into a slice immediately after it is brought to the table and screams out in pain as the hot cheese burns the roof of the customer's mouth. Yes, the customer won the suit on the grounds that they were never cautioned that the pizza was very hot (please don't go there) as we have become a society where we do not take responsibility for our actions, and everyone else is responsible for our own stupidity, now you know why whenever you go out to eat and the food is brought to your table the first words that you hear is, ready for this??? "Be careful, it's very hot". The waitresses have been so trained to say this all the time that once when my Asian salad was brought to our table I responded "Oh, really?". So is the life of a pizzeria owner/operator.

Dough Clinic / Re: cheese floats on top vs being fused

Evan;

You might also want to post your question at the PMQ THINK TANK which is visited and moderated mostly by pizzeria operators/owners much like yourself. You can find them at <www.pmq.com> you will find the T.T. as a drop down under the Forums header. You will need to register and log in but it is well worth it and the best part is like here, it is all free.

Shop Talk / Re: Help with pizza pricing

I see the reverse spiral dough mixing arm in the photo, it also looks to be nearly, if not new, when you consider the cost of a much smaller mixer, if you can get it for around \$1,000.00 or so, it would be a good investment. Just make sure you will have a dedicated power outlet for it as most of these mixers will require dedicated 120-V, 20-amp service. You will certainly be the envy of all the other pizza makers on the block! :)

Prep Equipment / Re: Welbilt 20 Qt Mixer

I've had some experience with them from my years at AIB. The mixer is also known as a "Varimixer" in reference to the fact that you do not have fixed speeds (1,2,3,4,

etc.) instead, you have a variable speed mixer that is controlled by a lever on the side of the mixer. So as to be able to mix a dough or batter consistently you will need to place reference marks on the side of the mixer allowing you to mix at the same speed each time. The mixer that we had was quite durable as we had it for a good many years. Think of it as a CVT as opposed to a 4-speed, manual shift transmission. Also, because it is a belt drive as opposed to a direct gear drive, I would not suggest that you get overly aggressive trying to mix doughs so large so as to heavily load the mixer. Make sure it comes with the reverse spiral dough mixing arm.

Prep Equipment / Re: Welbilt 20 Qt Mixer

P.S.:

With regard to getting the edge to settle down a bit after 24-hours, what was your finished dough temperature? Remember, without temperature control you cannot have effective dough management. This is especially critical when you are managing the dough as you are. In looking at your dough formula I notice that the ADY is a bit high at 0.65% and the salt is low at 1.3% combined with the high dough absorption this might be causing the problem you are experiencing. By lowering the ADY to 0.5% and increasing the salt to at least 2% you will get improved control over the fermentation of the dough through better regulated yeast activity (unregulated yeast activity + a soft dough = potential for excessive oven spring).

New York Style / Re: Explosive dough at 48 hrs and tame at 72 hrs. Any Ideas?

Absolutely! Too much sauce will make the cheese slide around as if it is on a skating rink. In pizzerias where there is a special concern about the problem due to liability. We have seen it so bad that as one takes a bite out of the pizza the cheese just slides right off. To a lesser extent, the application of excessive oil on the pizza skin prior to sauce application can also cause this problem, but not to the extent that excessive sauce does.

Dough Clinic / Re: cheese floats on top vs being fused

Keep in mind that you also develop a different fermentation profile between warm (room temperature) and cold fermentation conditions due to the different types and amounts of acids formed during the fermentation process. A good place to see some of this difference is in many of the artisan breads sold today as compared to white pan bread. The white pan bread is made using a warm fermentation process (either a straight dough or sponge-dough process) while many of the artisan breads are made using some form or other of a cold fermentation process (excluding those made from a sourdough starter).

General Pizza Making / Re: Bacteria fermentation

When using a rolling pin be sure to keep your thumbs on TOP of the handles, not under them. This will give you better control over the rolling of the dough and also be sure NOT to allow the rolling pin to roll off of the edge of the dough, roll to the edge then stop and roll from a different direction. Pie pins are a bit easier to work with in that they are easier to manipulate on the dough and there is not so great a chance of rolling over the edge of the dough.

Dough Clinic / Re: Whats better ?? Hand stretched dough or rolled dough

Looks great! :)

Dough Clinic / Re: Thanks Tom!

I see two possible solutions, one is to reduce the weight of the dough that you are putting into the pan, the other is to simply reduce the time you are allowing the dough to rise in the pan. Typically, these doughs are allowed to rise for between 45 and 75-minutes depending upon the exact dough formulation, finished dough temperature and room temperature. As you don't have the dough temperature and your room might be warm, there is a possibility that you are allowing the dough to rise in the pan too long, maybe reduce the final proofing time to something closer to 30-minutes to see if that gives you the finished crust thickness you're looking for. The old PH pans used to have a mark stamped in the side of the pan about 1/4 to 3/8-inch above the bottom of the pan, this was a reference mark that they used to allow the dough to proof up to to determine when the dough was ready to use (that's from back when they used to make their dough at the store).

Dough Clinic / Re: Crust too thick and dry but rich in flavour

Willy;

As you need help right away, please call me at 785-537-1037 and I'll be glad to help you.

New York Style / Re: [HELP] Pizza dough doesn't rise

You can also use a rolling pin or pie pin to open the dough to about 2/3 to 3/4 of full diameter and then finish opening the skin up to full diameter by hand tossing. Using this method you do not degas the dough as you would if you were to open it completely by rolling it out to full diameter. I used to teach this method in our seminars and it worked very well for those who were either new at opening the dough entirely by hand (toss challenged) or for those who continually had problems getting thin spots in the skin as a result of poor technique. I always found it surprising that after this method was mastered most would begin opening the dough entirely by hand. I've helped open a number of stores where this technique was employed and it works very well. I even use it, especially when I'm making calzones where I don't want to have any thin spots in the dough.

Dough Clinic / Re: Whats better ?? Hand stretched dough or rolled dough

One way to store refrigerated dough for making pizza skins in the least space is to make them off site where you can hold it as a dough ball for 24 to 48-hours, then partially open the dough balls (1/2 to 3/4 finished diameter, lightly oil the skins placing a piece of parchment paper between the individual skins, you can stack as many as 10 high and store in your truck cooler. I had a good friend (Otis Gunn) now deceased who operated his pizzeria (The Pizza Wheel) out of his specially built trailer. He had a small spiral mixer for mixing the dough and at night he would mix, scale, ball the dough and place into dough boxes which were stored in the cooler under his prep table. If you size your pizzas so you can get away using not more than 10-ounces of dough per dough ball you can get 12 dough balls in a box so you will only need storage for 8 to 9 dough boxes. If you go into the archives at the PMQ Think Tank you will find some discussion on pizza trailers which would relate to a pizza truck.

Dough Clinic / Re: How to store dough balls on food truck

The lactic acid forming bacteria are the most common associated with fermentation as we know it. Any time you allow the dough to remain at a temperature that will support fermentation by bakers yeast the lactic acid forming bacteria will also be active, so in addition to using a sourdough starter, or any kind of a pre-ferment for that matter, allowing the dough to ferment at room

temperature will also allow for at least some lactic acid formation in the dough, the problem is that when the dough has had sufficient time to develop enough lactic acid for flavor, the affects of yeast fermentation have taken their toll on the flour proteins (gluten) resulting in a soft or weak dough. When you allow for the lactic acid formation in a small portion of the flour and then add it to the remainder of the flour the unfermented flour is sufficiently strong to produce a good, manageable dough. This is why there is such a pronounced flavor impact when a sourdough starter is used to totally or partially leaven the dough.

General Pizza Making / Re: Bacteria fermentation

When made with fresh yeast the best time to freeze dough is IMMEDIATELY after mixing, mix, scale, ball and freeze then lightly oil the dough ball, wrap in stretch wrap, place back in freezer. The dough will remain good to use for about 3-weeks. To use, remove from freezer and place directly into the fridge to thaw for about 24-hours, remove from fridge, unwrap, and place in lightly oiled bowl, drape with a piece of plastic and allow to temper AT room temperature until the dough reached 50F, you can then proceed to open the dough into a pizza skin in your normal manner.

The same process is used when the dough is leavened only with a starter except the dough should not be stored for more than 10-days in the freezer.

Dough Clinic / Re: freezing question

Dough made with short fermentation time such as an emergency dough or dough made using limited fermentation time such as a dough that is mixed, fermented and made into pizza all during the same day will usually exhibit toughness in both the dough (snap-back/memory) and the finished crust (chewiness) due to the lack of fermentation which has a softening or weakening effect upon the flour proteins owing to the effects of acids and alcohol formed during fermentation as well as enzymes which are present in the yeast and when you allow time for these to work on the proteins in the flour you get improved dough extensibility, reduced chewiness in the finished crust and since much flavor of the crust results from the denaturizing of flour proteins during baking, when the proteins are exposed to the acids, alcohol and enzymes during extended fermentation you get more denaturing of the proteins resulting an improved finished crust flavor.

I hope this explains some of what you are seeing.

Dough Clinic / Re: Flour water salt yeast book issue

Munish;

If you follow the formula provided by Peter, adjust the water temperature to give you a finished dough temperature of 80 to 85F/ 27 to 29C, then immediately after mixing divide the dough into your desired weight pieces and form into balls, wipe the dough balls with salad oil and place into individual plastic bags. Twist the open end of the bag forming a pony tail and tuck the pony tail under the dough ball as you place it in the fridge. Allow the dough balls to cold ferment for 48-hours, then turn the dough ball(s) out of the bag into a bowl of flour and using a rolling pin carefully open the dough ball up to just slightly more than the diameter of your pan, generously oil each pan and place the flattened/shaped dough into the pan, set the panned dough aside and allow to proof/rise for between 45 and 70-minutes or until the dough rises about half way up the side of a 1.5 to 2-inch deep, dark colored pan. This should give you a risen dough thickness of about 13 to 15 mm. The dough is now ready to be dressed and baked. By the way, your flour protein content is at what I would consider to be the high end to make a really good deep-dish pizza. A good flour protein content for this application is 11.4 to about 12.5%.

Dough Clinic / Re: Complete newbie...dough like rubber, shall i bake or start over

Justin;

That's a mighty fine looking pizza!

When it comes to docking the dough you will want to use a "real" dough docker, with blunt plastic tips on the docking wheels as opposed to some of the supposedly dockers with long pointy tips. With that said, docking the dough doesn't eliminate the bubbles, what does is to "tack weld" the dough together to help control the size of the bubbles. If you look at a saltine cracker you can see this very clearly. Also, the docker holes are closed at the bottom where the dough has been compressed by the docker pin(s) thus locking it together. If you dock only the center section of the pizza skin you will typically get a thinner center section in the crust with a more pronounced edge, if you dock the entire pizza skin, from edge to edge, the edge will still raise, but not as much and the finished pizza will have a flatter appearing profile.

Dough Clinic / Re: Effect of docking on the cornicione

The very first thing that I would suggest is that the "recipe" be converted to a "formula" which is based on weight measures rather than volumetric portions. To do this just portion out each ingredient three times into a single container (one container for each ingredient) then weigh each ingredient, subtract the tare weight of the container and divide by three. This will give you a pretty accurate weight measure for each ingredient, once you have done that, divide the weight of each ingredient by the weight of the flour and multiply by 100. By doing this you have successfully converted your dough recipe into a dough formula based on weight measures and presented in bakers percent. Please post these numbers for us to look at.

Some things that jump out at me at first glance:

105F water is very hot for a refrigerated dough, more common is something in the 70 to 75F range.

Use instant dry yeast for now, and just add it as it is (dry) to the flour.

The salt level might be a bit too low, when you have the formula in bakers percent I will be able to determine if this is the case.

Here is a good starting point for making your dough:

- 1) Put water (70 -75F) in bowl first.
- 2) Add salt and sugar (no need to mix).
- 3) Add the flour and IDY and mix just until you don't see any dry flour in the mixing bowl.
- 4) Add the oil and continue mixing as normal for about 10-minutes.
- 5) When the dough is finished mixing, pour just a LITTLE oil down the inside of the bowl to coat the dough.
- 6) Check the finished dough temperature, you are looking for something in the 80 to 85F range.
- 7) Turn the dough out of the mixing bowl, it should come out much easier now that you've oiled the dough a little.
- 8) Scale the dough into desired weight pieces and form into balls.
- 9) Place dough balls into oiled containers and place UNCOVERED in the fridge for 3-hours, then cover the container(s) for storage or lightly oil each dough ball and place into individual bread bags, twist the open end to form a pony tail and tuck the pony tail under the dough ball as you place it in the fridge (no need to leave open or remember to cover with this procedure)
- 10) Allow to cold ferment for a minimum of 18-hours before using the dough, the

dough may go as long as 4 or more days in the fridge before use.

11) To use the dough, turn it out of the container or bag into a bowl of dusting flour, then pin the dough out to about 75% of the diameter you want, finished opening the dough by hand stretching to full diameter.

12) Dress and bake as desired.

Please keep us posted on your progress.

Dough Clinic / Re: Having trouble with dough?!?

Which "00" flour are you planning to use?

Dough Clinic / Re: Flour substitution

My own personal preference is for the WRH dough boxes <www.wrh.net>, they have an excellent seal, are super durable, come in a variety of colors which may help you to identify the day of manufacture, they can also provide lids for the top box in a stack plus they make a special scraper designed specifically for removing dough balls and scraping their boxes clean. You will need to oil the dough balls no matter what you do or it will stick to anything you use to cover it with. The amount of oil used to oil the tops (only) is very small, so I wouldn't worry about it. Since you can scrape the box clean after use, and it never goes into the public area of your store, you should be able to get away with washing once or twice a week. Your inspector will make the determining call on that, sometimes it is better to beg forgiveness than to ask permission. Another neat thing about the WRH boxes is that they have cleats molded into them to facilitate cross stacking in the walk-in cooler, then when down-stacking the top quarter inch of each box nests into the box beneath it making for a tight seal, then just lid the top box of the stack. Instead of buying special dollies for the boxes, I have seen where a box is fitted with wheels to allow the stack to be moved around, I have also seen plastic frame moving dollies used too. The wood dollies will not pass inspection.

Dough Clinic / Re: Dough Storage - Dough tray vs sheet pans

Note:

Those were supposed to be question marks in my reply, not sad faces! Just learned something new here, multiple question marks = sad faces, go figure?

General Pizza Making / Re: Room for improvement?

And your problem is???????????????

That's a pretty good looking pizza just as it is. :)

While the oven spring looks awfully good to me, if you still want more, you might experiment with increasing the dough absorption in 2% increments, this will result in a softer dough that will tend to exhibit more oven spring during the first minute or so of baking.

If you want to change the presentation a little without changing anything else you might try sprinkling about an ounce of shredded Parmesan cheese around the edge just before you place it in the oven. This typically gives an attractive appearance and adds some depth to the overall flavor profile of the pizza.

General Pizza Making / Re: Room for improvement?

I'd go with the corrugated boxes as they are better insulators than the thin single ply cardboard boxes. Most have the steam vents punched, all you need to do is to open them. You're right, nothing good ever happens to the pizza from putting a pizza in a box. I look at it as the lesser of two evils.

Stones/tiles/steel, Pans & Accessories / Re: Pizza boxes

Chris;

Your fermentation time is ok as is the yeast level, so I'm putting my money on deleting the oil for now. If that fails to work, reducing the fermentation time will increase the toughness/chew of the finished crust too.

Dough Clinic / Re: Chew

In addition to dough formula, dough management procedure can also play a significant role in the textural properties of the finished pizza. Since we don't have any information on the dough management procedure at this time, I would recommend as a first action to eliminate the oil from the dough formula, this should toughen the finished crust. Your dough absorption looks ok. As for dough mixing, it will have very little, if any impact upon the textural properties of the finished crust unless your dough management procedure calls for a very short fermentation time.

Dough Clinic / Re: Chew

If you blend the vital wheat gluten into the flour no special handling requirements are needed, just store the flour in a manner that will retard oxidation and insect growth. I like to store my flour in smaller plastic bags that I place in our chest freezer, like this it will literally keep for years.

Dough Clinic / Re: Vital Wheat Gluten - Storage

There is a good reason why "flour" as we know it in baking is not used in making baby food. Sort of the same problem we encounter with honey and infants.

Chitchat / Re: Safety of sourdough starter in vicinity of baby feeding equipment?

Keep an eye out for a Hobart A-120 (12-quart) or A-200 (20-quart). They are a common fixture in many restaurants and food service facilities so they come up pretty often. Both are 110-V so power will not be a problem. Both mixers are very sturdy and should give excellent service if you can find a good one. Be prepared to pay between \$1,000.00 and \$2,000.00, but for a piece of equipment that will be put into commercial duty the cost is well worth it. You don't want your mixer to break down right when you need it most. Just be sure to get a reverse spiral dough arm and a flat beater with your mixer. If it doesn't have either one, you can buy them from Hobart or Northern Restaurant Equipment might have the attachments as well as the mixers. A stainless steel bowl is preferred over a tin plate bowl but it's not a deal breaker if the tin plating is in good condition. I've occasionally run across a Hobart 30-quart mixer (floor model). These seem to be the "white elephants" as nobody seems to want them. The last one that I saw at an auction went for \$300.00 last summer. Watch the auctions!

Prep Equipment / Re: I'd need a commercial grade heavy duty small dough mixer (about 10qt)

Nope, not "mold" as it takes upwards of four days after baking for it to appear as the baking process destroys any mold that might be present. Instead, the problem appears to be due to the crust lifting off of the bottom of the pan creating a thermal break between the dough/crust and the hot pan. The most common cause is due to baking in a pan either without oil in the pan, or not enough oil in the pan. The oil creates a bridge between the dough and the pan thus eliminating the thermal break, allowing the entire bottom surface to color up much better. Occasionally we find the problem is due to the dough being too tough or too dry. When this is the case the dough creeps in the pan and in doing so lifts off of the bottom of the pan

with the same end result, in this case the solution is to make a softer, more relaxed dough, or change over to a perforated pan which will not allow the pockets to form under the dough.

Dough Clinic / Re: need help

Yep, butter, margarine, or Butter Flavored Crisco at 5% or more would do wonders while improving the flavor at the same time. Think of it like this, the difference between a hamburger bun and French bread is about 13% sugar and 3% fat, both sugar and fat are what we call "tenderizers". Are you using a Dutch process cocoa for the greatest flavor and color impact? Don't get too upset if you don't achieve a strong cocoa flavor in the crust as the problem is that cocoa develops its best/strongest flavor in an alkaline environment, usually pH 8.0 and higher, while a dough is slightly acid as is the finished crust.

Dough Clinic / Re: Dessert Dough how do I make it less chewy.

Clark;

The process will work the same regardless of the type of yeast used. I don't like to add the salt and/or sugar to the water containing a yeast suspension as it can, in some cases adversely impact the yeast activity leading to inconsistent fermentation of the dough. If you are using IDY you can just blend it into the flour along with the salt and sugar and then add the water as you have proposed. When blending the dry ingredients into the flour don't get carried away, just a couple revolutions is all that is needed

Dough Clinic / Re: Need the Dough Doctor God again

Your photograph looks a lit like the Chicago style cracker type dough formula that I developed many years ago. I have the formula and procedure posted in the PMQ Think Tank. It is really pretty easy to make but it does require a dough sheeter/roller to form the dough balls/pucks into a pizza skin. At home you can get away using a pie pin or rolling pin but if you use a rolling pin do not use the handles, instead, roll the dough with your hands placed over the top of the barrel and pushing down with great effort. it's a workout if you are going to make very many. The dough formula is not critical in my opinion so you might want to start out using a formula that you're familiar with and make a few slight modifications.

- 1) Reduce the total dough absorption to not more than 50%, depending upon your flour 45% might work better.
- 2) Use any type of yeast at the normal level, but it MUST be suspended in the dough water.
- 3) Put water (80F) in mixing bowl.
- 4) Suspend the yeast in the water by stirring until completely suspended, then immediately add the salt and sugar (if used), followed by the oil (I personally like to use 5% oil in this dough formula), then add the flour and begin mixing at low speed just until the dough takes on a very crumbly appearance. Yes, there will still be a lot of dry flour present and it will be hard to call it a dough. In reality, it looks a lot like a pie dough in the making. The dough is not properly mixed. DO NOT OVERTMIX.
- 5) Take the "dough" to the bench and weigh out about 12-ounces for a 12-inch diameter finished crust.
- 6) Form the dough into a puck shape as you would if making pie dough, pushing it together from the sides until it roughly takes on a puck like appearance, then wrap each dough piece in stretch wrap and place in the fridge to cold ferment and fully hydrate over night.
- 7) On the following day bring the dough out from the fridge and allow to warm at

room temperature until the dough reaches 50F, then lightly flour the dough puck (you will notice that it looks better now) and begin rolling the dough out to about 1/8-inch thickness or a little less, dock the dough well and trim to 12-inches in diameter, brush lightly with olive oil and dress the skin to the order. Bake at 550 to 600F.

Cracker Style / Re: Cracker crust help

Adding liquid milk to the dough to replace all of the water or a portion of it will contribute some lactose to the dough formulation. Lactose (milk sugar) is not fermentable by bakers yeast but does significantly improve the browning characteristics of the dough, hence since we typically bake to color, it will shorten the baking time all things being equal. There is a little interaction of the milk proteins and calcium content of the milk with the flour proteins (gluten) but the result is only a stronger, tougher dough.

General Pizza Making / Re: key to soft pizza crust--soak in oil?

What I might do to salvage the dough is as follows:

Add a small amount of high gluten flour to the dough, then add just a pinch of sugar, knead this into the dough or mix it into the dough just until you achieve a smooth dough consistency, immediately scale and ball the dough, lightly oil the dough balls and set aside to proof at room temperature until the dough is soft and pliable, which usually takes an additional 1 to 2-hours, then open into pizza skins by your normal manner. The other option is to divide the dough in half and incorporate each half into a new dough much in the same way as you would incorporate a sponge. Once incorporated into a new dough handle and process in your normal manner.

New York Style / Re: Question on what to do with overblown dough

A warm overnight fermentation is really pretty "iffy" due to the potential for such a great amount of variation in fermentation resulting from differences in finished dough temperature as well as room temperature. With excessive fermentation comes weak dough that can collapse under the weight of the topping ingredients, development of "off" flavors, the formation of excess acids (by-product of fermentation) can greatly inhibit crust color development which is further compounded by the fact that the yeast has metabolized most, if not all of the sugars. So, what's a person to do? Emergency dough is always an option, or you can make a dough using only 0.25% compressed yeast, 50% absorption and only 50% of the total flour called for in your dough formula. Mix the dough as cold as possible and place it into a suitably sized container and lightly cover to prevent drying. Allow to ferment for up to 24-hours or overnight. After the fermentation period mix the fermented dough with the remainder of the flour, salt, sugar, oil/fat, and the normal amount of yeast called for in the formula, mix the dough just until it becomes smooth, then scale, ball and lightly oil the dough balls, set the dough balls aside and cover to prevent drying and allow to ferment once again until the dough balls are soft and extensible which normally takes between 1 and 2-hours at room temperature. From that point on handle the dough balls just as you would with a normal dough.

Dough Clinic / Re: over night warm rise recipe

COOL!

How about springing for another \$60.00 or so for a 12-V starter, like they use on the Briggs & Stratton 12 to 17-H.P. riding lawn mower engines. Mounted directly to the frame and replacing the hand crank it could be operated off of a marine

battery all day long making a hard job even easier.

Prep Equipment / Re: I built a manual dough sheeter

Conventional pocket type and rotary drum dividers cannot handle dough that is much above 67% absorption without excessive problems due to stickiness, there are dividers and rounding systems available that can handle dough that is made with high absorption but to the best of my knowledge all of the dividers are rotary extrusion type dividers (Google Reiser V-Mag extruders) in conjunction with a rounding table with diagonal rounding bars specific to the size/weight of the dough piece. As you might guess, this is some pretty costly, high speed, high volume equipment that is intended for large wholesale manufacturers.

Dough Clinic / Re: Dough divider and rounder

Benny;

The first thing you will need to do is to convert your dough "recipe" to a "formula" based on bakers percent. Once you do this you can accurately manipulate the size of the dough up or down without any other formula changes. To begin, portion out your ingredients into three different containers as if you were going to make three different doughs, now WEIGH each of the triplicate ingredients and divide the sum by three to find the average weight for the ingredient. But why not just weigh all three into a single container and just weigh that? We have found that since this is not the normal method used to portion the ingredients the results tend to be different from when the ingredients are portioned one at a time. Once you have determined the average WEIGHT of each ingredient (including the water) we can begin converting the ingredient weights into bakers percent. Flour is always 100%, to find the percent of each of the other ingredients divide the weight of each ingredient by the weight of the flour and multiply by 100. You have now converted your recipe to a formula based on bakers percent. Weigh several of your dough balls to find the average dough ball weight that you use. Now, multiply the average dough ball weight by the number of dough balls needed to find the total dough weight needed to make those dough balls. Add up the total of the percentages in your formula and divide that number by 100. Divide the total dough weight by this number (generally around 1.67) and you will have found the weight of flour needed to make the specified number of dough balls. Using your calculator, enter the flour weight then press "X" followed by the ingredient percent that you want the weight for then press "%" and read the ingredient weight in the display window.

Remember, the ingredient weights will be in the same weight units as you gave the flour weight in (ounces, grams, pounds, kilograms, etc.). As for a mixer, I would probably suggest something like a Hobart 60-quart mixer. For agitator you will want to have a flat beater for mixing/blending sauce and a dough arm (reverse spiral design) and if possible a pastry (sweet dough) mixing attachment as this will allow you to better replicate your present mixing procedure. Check with Norma here on this web site for suggestions on dough storage. Also, make sure you know all of the laws and regulations that you will need to follow. Best of luck to you.

Dough Clinic / Re: Dough Management

JPB;

If the dough is so sticky that you need to use all that dusting flour and it won't come off after forming the pizza skin, I'd be inclined to reduce the dough absorption until I got a better handling (less sticky) dough. Keep in mind that you can improve the way a soft dough handles by putting a little oil on your hands and on the bench top too.

General Pizza Making / Re: Sauce is red..Crust is Gray

The length of time it will take for the dough to rise from refrigerated temperature to 50 - 55F will vary with both the room temperature and the size/weight of the dough ball. This is why I use a thermometer to establish a base line and then you can go with time after that until the room temperature changes drastically or you change the dough ball weight.

Dough Clinic / Re: Help with dough! Too sticky too elastic

Another thing to look at is the ash content of the flour. Flour with an ash content above 0.6% will have a decidedly dull appearance to it which can translate into a gray colored finished crumb structure. The appearance of brown flecks in the dough would indicate the presence of bran which in turn would indicate a high ash content in the flour. To test this you might see if you can find a flour with an ash content of 0.57 or lower. You might Google your flour to see if the manufacturer/miller has the flour specifications posted on line.

Aside from this, the excessive use of dusting flour can also result in something of a gray crust color. Some things that I've done in the past to address poor crust color are to brush the edge of the dough with water immediately before placing it in the oven, or you might also try brushing it with a little oil to see if that helps.

Occasionally, I've found that creating a moist atmosphere in the oven helps with crust color problems too, here I place a cake pan with a little water in it about 5-minutes before I put the dressed dough skin in the oven, be sure to remove the pan of water just before you close the oven door.

General Pizza Making / Re: Sauce is red..Crust is Gray

If using bread bags, or any type of bag be sure to lightly oil the dough ball just before dropping it into the bag, this will eliminate the stickiness. Also, I recommend allowing the dough to come up to only 50 to 55F before opening the dough balls into pizza skins, the dough can get a little out of hand if you allow it to come up to room temperature, whatever that might be. The thing to remember is that the dough cannot be opened into pizza skins immediately after re-rounding it into balls, it must be allowed sufficient time to relax after balling or the dough will fight you to the bitter end through out the entire forming process.

When plastic bread bags are used, and the bag is pulled down into direct contact with the bag, or something close, the dough will cool down without developing condensation in the bag (this is one reason why I don't like to use Zip-Lok bags, because this is nearly impossible to accomplish when using them. The dough will be very relaxed when you are ready to use it so if you just invert the bag over your dusting flour the dough ball will drop out of the bag into the dusting flour and be ready to immediately begin opening into a pizza skin.

I hope this helps,

Dough Clinic / Re: Help with dough! Too sticky too elastic

I have two possible solutions;

1) After re-balling the dough lightly oil the dough ball and place it back into the bag and allow it to ferment at room temperature for about two-hours, then turn the dough out of the bag into a bowl of dusting flour and proceed to open the dough into pizza skins. The two hour period may need to be adjusted longer or shorter for best results.

2) Immediately before you place the dough ball into the bag (first time) lightly oil the dough ball, then allow to cold proof as you presently do. When you are ready to open the dough ball into a pizza skin turn the dough ball out of the bag into a bowl of dusting flour then proceed to open the dough up into a pizza skin by your

preferred manner. Note: This procedure does not call for re-ball the dough. The only time I ever re-ball the dough is when/if it gets too over fermented, then I will re-ball it and allow it to ferment at room temperature until the dough has once again become sufficiently extensible to be easily opened into a pizza skin.

Dough Clinic / Re: Help with dough! Too sticky too elastic

After reforming the dough balls on the second day how long did you wait before beginning to open the dough balls into pizza skins?

Dough Clinic / Re: Help with dough! Too sticky too elastic

Hi Walter;

Glad to hear that you are making the big leap of faith. I'm sure you will enjoy Reno and your new location.

The basic rule is that no formula changes are typically needed at altitudes of less than 5,000-feet, so that puts you right on the cusp of needing to make some changes. Start out with no dough changes at all, if you see the dough drying out more than usual, increase your dough absorption by 3% and that should take care of that problem, if you find that you will need to make changes due to the altitude difference look at reducing the yeast level by 25%, no other changes should be needed. As for your ovens, yes, be sure to have the air-fuel mixture adjusted. As for baking, I would recommend baking at 25 to 50F higher oven temperature (deck oven) as the higher evaporative rate will have a cooling effect upon the pizza and the higher temperature will address that.

If you encounter any other problems, let me know.

Dough Clinic / Re: High Altitude Concerns?

Bill;

The pan that you describe has a surface area of 187.03-square inches. A good dough loading factor to start with for a thin crust is 0.0973-ounces of dough per square inch of surface area, so $187.03 \times 0.0973 = 18.198$ -ounces of dough for your pan size. I would just round it off to 18-ounces, from there you can adjust the dough weight as needed to give you exactly what you are looking for in finished crust thickness.

Here is a neat trick using bakers percent. Divide the total bakers percent of your dough formula by 100, then divide the total dough weight that you need by that number and you now have the total flour weight needed to make that dough size/weight, from there you can use your bakers percent calculations to find the individual ingredient weights to make the dough.

In addressing your cited problems, I would need to ask what the water temperature and finished dough temperature of both doughs was. Variations in water temperature/finished dough temperature could give the differences that you observed. The procedure that I always use is as follows:

- 1) Put water in mixing bowl (90F).
- 2) Put yeast in the water and stir to suspend the yeast in the water.
- 3) Add the flour followed by the salt and sugar (if used), begin mixing until the flour has absorbed the water, then add the oil and continue mixing until a smooth dough consistency is achieved.
- 4) Measure the finished dough temperature, it should be in the 80 to 85F range. Adjust the temperature of following doughs to achieve the target temperature. Note: Adjust the water temperature in 5F increments.
- 5) Take the dough to the bench and scale/ball immediately.
- 6) Lightly oil each dough ball and place into individual plastic bags (think bread bags). Twist the open end to close then tuck the pony tail under the dough ball as

you place it in the fridge. Note: I typically do not allow the dough ball to ferment at room temperature prior to placing it in the fridge as this has the potential to introduce a great amount of inconsistency into the dough after the refrigeration period.

7) After the dough has been in the fridge for 24 to 72-hours, remove the bagged dough ball(s) and set out at room temperature until the temperature of the dough reaches between 50 and 60F, then turn the dough out of the bag into some dusting flour, coat the entire dough ball with dusting flour then proceed to open the dough ball into a pizza skin by your preferred method.

Since you are using a solid bottom pan, very lightly oil the pan and fit the pizza skin into the pan, dress the skin as desired and bake at a minimum temperature of 500F. The use of a well preheated pizza stone under the pan should help the quality of bake.

Dough Clinic / Re: Need the Dough Doctor God again

The greatest problem with VWG is moisture, so if the box has a plastic or some other liner (it probably does) leave it in the liner, roll it down tight against the VWG and secure with a rubber band then place into a Zip-Lok bag and store refrigerated or frozen. Note: When you go to use it the next time be sure to bring it out of the refrigerator or freezer several hours prior to opening the bag as this will reduce the possibility of condensation forming in the bag. As always, when using VWG it is a good practice to immediately blend the VWG into the flour after scaling as this will help to prevent the VWG from "pilling" due to exposure to humidity/moisture or inadvertently adding the dough water in such a way so that it contacts the VWG in a direct manner. Once the VWG is blended into the flour there is no need to worry about this happening.

Dough Clinic / Re: Vital Wheat Gluten - Storage

You say that you are now weighing your ingredients more than you were previously. When converting from volumetric portions to weight measures did you portion out each ingredient at least three times and divide the total weight by three to arrive at the ingredient weight that you're now using? I've seen any number of previously good recipes go awry when they were converted to formulas based on weight rather than volumetric portions because the conversion was not done correctly. Realistically, I'm guessing that like was previously mentioned, you are now using a different oven, and as you've seen from reading posts here the oven can make or break a pizza.

Dough Clinic / Re: suggestions for making pizza dough

The recognized lowest recommended temperature to begin opening the dough into skins is 50F. Depending upon the strength of the dough and the absorption it will vary with different doughs. I have used 50F as a starting point myself but I almost always find that a higher temperature works better, usually something in the 60's.

Dough Clinic / Re: What is the ideal temp for opening up dough?

JVP;

The problem that you are experiencing is due to the way the water in the sauce is being carried. When you make the sauce fresh the majority of the water is contained in little "juice sacks" I don't remember the correct name for them, but think of them as little water filled balloons. When you freeze the sauce in your home freezer which is referred to as "static" freezing (high temperature, 0F and little or no airflow) the sauce is frozen very slowly allowing for the formation of large, angular ice crystals. These large ice crystals rupture those juice sacks

allowing the water to leach out making the sauce to appear thin. In a commercial facility the sauce is frozen at much lower temperatures of -30 to as low as -60F with airflow of around 600 linear feet per minute, this "blast" freezing allows for the formation of much smaller ice crystals which don't have as much of the deleterious effect upon those juice sacks as static freezing does. This is also why the ice cubes you get from your home freezer are opaque rather than nearly clear as as the commercial ice cubes you buy (it's all in the size of the ice crystals). I wish I had a solution for you but it's one of the laws of physics that can't be violated. Yes, you could add a thickener to the sauce to tie up the water released as a result of slow freezing but that will also change the mouth feel/texture of the finished sauce. We did some work many years ago in which we cooked the sauce prior to freezing. While this did not correct the problem it appeared to improve the look and texture of the sauce after it was defrosted and applied to the pizzas, the only down side was that the cooking step changed the flavor profile of the sauce slightly. You might want to try this to see if it will work in your specific application.

Sauce Ingredients / Re: I hate freezing my left over pizza sauce!

IDY is the best thing to come along yeast wise in nearly a century. ADY is not always as consistent as we would like to think it is, and it can be a bit finicky when it comes to long term storage. IDY can be added right into the flour without pre-hydration if you use a mechanical mixer (big advantage) but if you are mixing by hand it must be pre-hydrated in warm water (95F). We did a study many years ago where we re-hydrated the IDY in water at different temperatures. We found that it was most detrimental to re-hydrate it in water that was colder than 95F, and when we re-hydrated it in water that was only 5F warmer then recommended we also experienced a loss of yeast activity but not nearly as bad as what we saw at the lower water temperatures. As for storage of IDY there is a lot of confusion surrounding just how it is best to store it. The best way is to leave it in the original bag then after using what you need, fold the bag down upon itself to reduce the headspace in the bag and secure it with a rubber band. If the entire package will be used within two weeks it is best to store it at room temperature, otherwise opened bags are best stored under refrigerated conditions. Unopened bags can be safely stored in the freezer for up to two years, after that you will begin to see some deterioration of the yeast activity to the magnitude of about 25% over the next 12-months, after that you're on your own as we did not run the tests out beyond three years. Why store it at room temperature? The reason for this is because as you remove the IDY from the refrigerator you will get condensation forming on the yeast in the bag due to the temperature differential between room and refrigerator temperatures, moisture is the number one enemy of dry yeast when it comes to storage life. Since IDY is only at about 6% moisture content when the bag is first opened it tends to absorb moisture from the humidity in the air quite readily this is why it is recommended that the IDY be left in the original bag and just folded down tight upon the yeast (limits exposure to air and to condensation both of which are detrimental to the shelf life properties of IDY).

Dough Clinic / Re: What is the best Active Dry Yeast to use

Abouna:

It would help if you could provide your "recipe" as a "formula" in bakers percent as this would allow us to see if the formula is in correct balance. With that said, the problem may not be with your dough formula but instead with your dough management procedure., You show water at 95F being used to make the dough and then allowing it to rise (ferment) for two hours before taking it to the fridge for overnight cold fermentation. The soggy (not wet) but limp description you gave of

the crust suggests that the dough might be over fermented and is collapsing under the weight of the topping ingredients creating a thin center section to the crust with very poor, dense crumb structure. A quick way to see if this is the problem is to use only 1/4-cup of water at 95F to activate/suspend the yeast in, and adjust the temperature of the rest of the water to 75F, then manage the dough as you are presently doing. This will reduce the amount of fermentation that the dough receives, thus strengthening it so it will be better capable of supporting the weight of the topping ingredients. Please let us know if this give you improvement.

Dough Clinic / Re: Can't get good crust out of WFO. What are we doing wrong?

Mitch;

There is no hard and fast answer to your question but you are correct in that anything at or just slightly above 45F will negatively impact the refrigerated life of your dough, how much so is impossible to predict without experimentation with your dough in your cooler. Due to the higher temperature of your cooler the finished dough temperature is even more critical with regard to fermentation as it will take longer to cool down at the higher temperature and that could be a game changer out at three or more days. Remember my mantra, "you cannot have effective dough management without effective time and temperature control". You may need to experiment with even lower finished dough temperatures due to your higher holding temperature. Realistically, about the lowest dough temperature you will probably be able to achieve is between 60 and 65F. If you can consistently hit your finished dough temperature, get the dough scaled, balled and into the cooler in short order (not more than 20-minutes) and maintain the temperature (whatever it works out to be) in your cooler as consistent as possible you should be able to get five or more days shelf life from your dough balls while in the cooler.

Dough Clinic / Re: Final Dough Temperature impact on dough fermentation

It would also help to know what the finished dough temperature is (dough temperature immediately after mixing).

Dough Clinic / Re: cold fermenting fridge temperature

Yep, the MM-360's had them too. When you look inside of an air impingement oven and look to the top and bottom of the oven you will see stainless steel panels with holes in them, these are the "fingers" I'm referencing. Inside of each one of those panels is a removable sleeve that is designed to modify the airflow through each finger panel. You can even block off the airflow to any of the panels effectively making it a radiant heating panel. I'm surprised that you were not brought up to speed on knowing about the fingers as the conveyor must be removed and the fingers disassembled for cleaning about twice a year. Failure to do so can ultimately lead to blocked fingers (impeded airflow) and poorly baked pizzas. Typically, most air impingement ovens are set up with a full open finger profile across the bottom and some variation of full open and modified airflow across the top. When the fingers are removed and disassembled for cleaning it is all too common for the inserts to be installed into the wrong finger panel thus impacting the top bake. This is the reason why many managers now have a finger map taped to the side of the oven.

Dough Clinic / Re: Hearth Bake Disks...

I'm in total agreement as there are just too many variables which are all intertwined. My approach is to say that each of us knows what dough management procedure works best for them under their specific conditions, with that out of the

way all you need to do is to calculate your dough ingredient amounts and there is already a calculator for that, or like me, you can use bakers percent, probably doesn't take more than a couple minutes.

Dough Clinic / Re: Would be great to see someone develop a pizza dough App

Most pizza disks will warp when used in any type of deck oven, even the Hex Disk which is designed to emulate a pizza screen will warp. This warping creates some very real baking inconsistencies in a deck type of oven but in an air impingement oven there is no deck surface and the air impinges upon the disk without any problem even though it may lift a little off of the conveyor. Some people like to use a pizza screen in a deck oven (screens do not warp as disks do in a deck oven) when they do this they typically bake the pizza on the screen for all but a minute of the baking time, then the pizza is slid off of the screen and placed on the deck to complete baking for the last minute, sometimes less.

As for quality of pizzas coming out of an air impingement oven, if they are set up properly with the correct finger configuration for the type of pizza being made, and the right baking platform is used, they can produce some really great pizzas, good enough to win in some of the popular pizza competitions. The problem with air impingement ovens is that for some unknown reason supposedly intelligent people insist upon baking their pizzas as QUICKLY as possible, trading quantity for quality, additionally these ovens are also used to make any number of different menu items all at the same temperature and unless the oven has a split conveyor, at the same time as the pizzas are baked at.

Dough Clinic / Re: Hearth Bake Disks...

When the dough first comes off of the mixer it may be difficult to open into a pizza skin as the dough can be quite tough, if you find that to be the case portion the dough immediately after mixing and form into balls then set aside to ferment at room temperature until the dough can be more easily formed into a pizza skin and placed into the pan. I've found that this normally takes between 1 and 2-hours. I like to do this in the afternoon or evening prior to making the pizzas that way the dough can final proof overnight and be ready to go on the following day.

Sicilian Style / Re: proofing time for deep-dish, sicilian, al taglio pizza

With many of the sourdough starters that I've worked with over the years it has taken upwards of 8 to 10-hours to achieve the desired rise during the final proofing period. This is based on using just the starter for the leavening (no yeast).

As for your "thickness factor" 0.22 equates to almost 25-ounces of dough weight for a 12-inch diameter deep-dish pizza. I think this is pretty heavy as I normally use a "dough loading factor" / "thickness factor" of 0.14 to 0.15 which figures out to 16 to 17-ounces for a 12-inch diameter deep-dish pan. Normal proofing typically calls for the dough to at least double in height/thickness during final proofing, the remainder of the finished crust thickness is achieved through oven spring.

Sicilian Style / Re: proofing time for deep-dish, sicilian, al taglio pizza

We did this work while I was employed at AIB using the Gasograph Meter for measuring yeast activity through gas production, what we found was that to duplicate fresh (less than 5-days old) compressed yeast we had to use 50% ADY and 35% IDY based on the amount of compressed yeast (CY) used. Put another way, to replace 1-pound of CY you would need to use 8-ounces of ADY or 5.6-ounces of IDY. Based on these numbers I have always advocated using replacement values of 50% for ADY and 0.375% for IDY.

The thing(s) to remember about CY is that you must receive it fresh, not a week or two old from a small distributor's cooler if you are to get the anticipated shelf life from the CY. CY begins deteriorating about 10-days after it leaves the manufacturing facility, it must be stored between 38 and 42F, never frozen. Under these conditions in a home application you can expect to get about 3-weeks to "possibly" a month of decent life from the CY. If the CY is temperature abused, like forgetting to put it back into the fridge immediately after weighing out what you need, all bets are off the table with regard to shelf life. When CY has passed that critical line you might see mold growing on the yeast, the dough will not ferment as vigorously as it once had, and you might find some off flavors/aromas in the finished crust. Discoloration of the yeast is not necessarily a sign of deterioration nor is an ammonia smell. IDY on the other hand can have a VERY LONG shelf life, in a home baking application as long as a full year if handled correctly. Unopened bags of IDY will have a 2-year shelf life, once opened, leave the IDY in the original bag, use what you need and roll the bag down on top of itself to slightly compress the contents then secure with a rubber band. If you will use the entire bag within a week it does not need to be refrigerated, in fact it is better if not refrigerated, but if you will be using from the bag over a period of time as most home bakers do, place the closed bag in the fridge or in the freezer (yes, unlike CY, IDY can be stored in the freezer), BUT when using from the previously opened bag be sure to scale/portion out what you need and reclose the bag and place it back into the fridge or freezer as quickly as possible. This is done to prevent the formation of condensation on the yeast or in the bag. Moisture will dramatically reduce the shelf life of IDY.

Hope this helps.

[**Dough Clinic / Re: IDY to fresh yeast conversion**](#)

That's a great example of what we call "biochemical gluten development". When I used to teach pizza making to local families here in and around Manhattan, Kansas I told everyone attending to bring bowl and a wooden spoon. The bowl was for mixing the dough in and the spoon was for mixing the dough just like the handle of the spatula was used in the video. I told everyone to mix the dough using the wooden spoon just until you thought the spoon was going to break then stop mixing, from that point on we pretty much followed the same procedure shown in the video. No more arms like the village blacksmith from kneading the dough. The procedure works just as well for making bread and rolls too. One of the most commonly asked questions: Does it need to be a wooden spoon? Answer: Yes, with any other spoon there is a likely hood that you will over mix the dough. No harm done but just more work than necessary. Never did break the handle on one of those wooden spoons either. That's how dough was made before Mr. Hobart created his ingenious invention.

[**Newbie Topics / Re: ratio of flour to water**](#)

Ruu;

What you were using was a bromated form of Arkady Yeast Food. Or, you were using bromate tablets made by British Arkady. The tablets are essentially the same as those available from Cain Food Industries. You might ask them if they have an office on the east coast, or you can try Watson Foods (Google to get more information) I know they have a lot of the oxidation tablets too, and they are located on the east coast too.

[**Dough Clinic / Re: Highest Bromated flour**](#)

By attaching a couple of wire handles on then they also make a pretty decent

platform to proof your home made yeast raised donuts on. After the dough has proofed, just lower the screen with the donuts on it into the frying fat, turn the donuts to complete the frying process and lift the screen out by the wire handles, donuts and all, then transfer to a screen for draining off the excess oil.

Off-Topic Foods / Re: Pizza screen

Without a scale it is hard to "guesstimate" the the dough absorption, especially at 60% since 70% absorption will make quite a dramatic difference (softer dough). Whit that said though I've got a feeling that the issue might be with your particular flour. All flour is NOT the same, soft wheat flour, hard wheat flour, high protein, low protein, high starch damage, low starch damage, fine particle size and coarse particle size, any of these can/will impact the dough absorption, for this reason it is recommended that you determine the best absorption for your particular flour by the trial and error method, make doughs with different absorptions and see which one works best for you. Once you find the absorption that works well for your flour you can begin making different styles of crusts by increasing or decreasing the absorption to get the dough/crust characteristics you're looking for.

Newbie Topics / Re: ratio of flour to water

My own personal preference is a blend of equal parts flour, semolina flour and cornmeal. Whatever you use you want to use just enough to get the job done and not get carried away with it.

Dough Ingredients / Re: Cornmeal question

Ruu:

Staying with the G.M. brand of flours your best bet will be to use All Trumps which comes in at approximately 14.2% protein content. You won't find any flour containing more than about 15-ppm potassium bromate (if I remember correctly, 20-ppm is the legal limit for use).

As for the gluten, all vital wheat gluten is sort of a tan color, that's just the nature of the beast. I've never seen the use of added gluten turn the crumb of the finished bread to an off color when used at normal levels, typically between 3 and 10% based on the weight of the total flour. Keep in mind that each 1% vital wheat gluten that you add (based on the total flour weight) will increase the total protein content of the flour by 0.6%, so the addition of 2% VWG to All Trumps flour will give you roughly 15.4% protein content. Also, be sure to increase the dough absorption by an additional 2% for each percent vital wheat gluten added. As for dough conditioners, I am assuming that you mean dough strengtheners. There are numerous dough strengtheners available but you might have a problem accessing them as they are intended only for wholesale applications. In any case, you might contact Cain Food Industries, Dallas, Texas. They might still have their bromate tablets available, but if not, they have oxidative enzymes that are very effective at replacing bromate without the associated potential health issues of bromate.

By the way, the flour that you referenced contains 50 to 60-parts per million (PPM) potassium bromate. This is a level of bromate that has not been used in the U.S. since the late 1960's. The use of bromate has been banned just about world wide due to its potentially carcinogenic implications.

Dough Clinic / Re: Highest Bromated flour

P.B.:

In going to an extended cold ferment I would suggest reducing the IDY to something in the 0.375 to not more than 0.5% range. Adjust your water temperature to give you a finished (mixed) dough temperature in the 70 to 75F

range. As for fermenting the dough you will always achieve more uniform fermentation by cutting the dough into individual pizza weights and forming into balls which are then fermented as opposed to fermenting the dough in a large mass which can be all but impossible to cool efficiently.

Dough Clinic / Re: Converting from a same day dough to a 3 day cold ferment - questions...

It should work just fine for you.

Dough Clinic / Re: Mixers

Different cheese from different manufacturers can/will perform differently in different ovens due to differences in baking temperature, baking time, top/bottom heat balance as well as airflow characteristics of the oven. I'd suggest going back to whoever is trying to change you over and ask for a sample to work with to see how they compare in your oven specifically. No sample, no change.

Pizza Cheese / Re: Need some advice

Ralphy;

When making rustic breads you only need to have steam in the oven for the first couple minutes of baking, this allows for sufficient time to get the desired oven spring before the crust begins to set. We have successfully used pans of hot water in the oven while at the same time misting the dough immediately before placing it in the oven. With a little experimenting you will be able to figure out how much water to put into the pan (the larger the surface area the better) so it is completely evaporated inside of 5-minutes, this way you will not need to open the oven to remove the water filled pan. With a good stone hearth oven you can swab the oven deck with a wet mop as you put the bread into the oven to accomplish the same thing, but with anything else you will most likely crack the deck.

Shop Talk / Re: steam for small deck pizza oven

You're probably correct about the oven, it sounds like you don't have enough top heat. What is your baking time and temperature that you're using at present?

As for mixing, I'll assume you are going to hand mix the dough.

Put water (26C) in a bowl, add the yeast to the water in the bowl (assuming fresh/compressed yeast) and stir to suspend the yeast in the water.

Add oil to the water immediately followed by the salt and sugar (if you use sugar), no need to stir or mix.

Immediately add the flour and begin mixing. Mix for several minutes to get good distribution of ingredients throughout the dough. Turn the "dough" out of the mixing bowl onto a lightly floured surface and begin to knead the dough by turning and folding the dough. Knead the dough just until it looks smooth and feels somewhat elastic.

Divide the dough into desired size/weight pieces, form into dough balls, wipe the dough balls with oil, place into individual plastic bags twisting the open end to close and tucking it under the dough ball as you place it in the fridge.

Allow the dough to cold ferment in the fridge for at least 24-hours, 48 or more is better.

Remove dough from the fridge, allow to warm at room temperature until the dough reaches 10C, or you can just allow it to temper for 90-minutes before you begin opening the dough balls up into pizza skins.

Turn the dough out of the bag into a bowl of flour, dust all sides of the dough ball with flour.

An easy way to open the dough balls is to roll the dough out using a rolling pin to

about 2/3 of the desired diameter (this will not degas the dough) then finish opening the dough to full diameter by bench stretching.

Once the dough is opened to the desired diameter, place onto some type of baking platform (pan, disk, parchment paper, etc.), dress the dough as desired and bake at a temperature of at least 500F/260C.

This should get you started.

Dough Clinic / Re: Help from México „I'm new help me with my dough please

TRB;

I'm not a medical doctor, but I've stayed at Holiday Inns, so here goes, Since fermentation hydrolyzes starch into sugars for the yeast to feed upon and the byproducts of fermentation acids, carbon dioxide and alcohol plus the protease enzymes naturally present in the yeast all contribute to degrading the proteins in the flour, I would suggest fermenting your dough as long as possible. I can't say how long that is but when you have reached a point of too much fermentation the dough will exhibit collapse, may take on an acid or undesirable flavor and exhibit stickiness as well as poor volume/height characteristics in the finished crust. I don't know if this will also help, but many people report less intestinal distress when eating pizza made with only fresh green leaf basil as a flavoring (no dried basil, dried oregano or fresh oregano). Garlic doesn't seem to present a problem.

Dough Clinic / Re: The human hand VS technology.

TRB;

There is specialized laboratory equipment that does just that. measures the amount of gas produced in specific periods of time under controlled conditions. This is how we determine the potency of different types of yeast as well as the impact of storage time and temperature on yeast. When we used to make wine we used a gas trap and bottled the wine when the bubbles entering the trap reached a prescribed number per minute. When we were making distilled spirits we would allow the fermentation to proceed until all gas production ceased and then we'd take it to the still for distillation. It could be done with a dough since gas production is a function of the amount of fermentation having taken place. You would need to measure the gas produced by the yeast and then evaluate the dough for the characteristics you're looking for, once you have the characteristics you can then correlate that to the amount of gas produced and theoretically, if you were to ferment all following doughs to the same amount of gas production the fermentation should be close, HOWEVER it is well known also that the temperature of the dough also impacts the type of acids formed during the fermentation process thus also impacting finished crust flavor so all of those following doughs would need to be fermented at a like temperature, and since temperature is one of the main controlling features for yeast fermentation it might just be easier to control the dough temperature and then ferment to time, kinda takes us back to where we started.

Dough Clinic / Re: Storing dough in the fridge

DDT;

With 18-hours of fermentation time putting more work into the dough prior to scaling and balling will not have any impact upon the finished dough, but replacing a portion or all of the A.P. flour with bread flour will have the desired effect upon the finished dough skin.

Dough Clinic / Re: Oil or sugar???

TRB:

When using the rounder as described you would take the dough directly from the mixer to the bench for scaling and then immediately through the rounder, you would then allow the dough balls to ferment for the 4-hour period of time or whatever time you elect to ferment the dough.

Dough Clinic / Re: The human hand VS technology.

DDT;

If you like everything else but just want to get a little more color to the top of the crust I would suggest brushing the outer rim of the pizza skin with a very small amount of oil just before placing it in the oven for baking. Oil in the dough will not have much of an impact upon the crust color and sugar, while helping to give more top color to the crust it will also increase the bottom color even more and that may not be what you want.

Dough Clinic / Re: Oil or sugar???

If you leave the containers un-lidded for a couple of hours as you did you should have no problem with excessive gas pressure popping the lids off. Both methods work well, but because there is a difference in the rate of dough cool down between the two methods pick one and work with it.

Dough Clinic / Re: Storing dough in the fridge

TRB;

Thank you for being a loyal follower of my PMQ articles.

While there are machines from A-M Manufacturing that will automatically both divide and round (ball) the dough, the stand alone dough rounders are much more commonly encountered except in a commissary operation where the high speed and capacity of the divider/rounder (1,200 to 1,500 pieces per hour) can be effectively utilized. When using a dough rounder the dough is cut/scaled manually and tossed into the rounder where it is mechanically formed into a uniform round ball. As for degassing the dough, this is never a problem since the dough is rounded immediately or very soon after mixing, after rounding, the dough is then fermented for whatever your dough management procedure calls for. Do keep in mind though that there are some types of dough that cannot be rounded using this type of equipment, these are typically very high absorption, wet, slack, sticky doughs. If in doubt as to whether your dough will process through a divider/rounder or stand alone rounder contact the manufacturer to find out if the equipment will work with your dough.

As for special baking platforms for baking "mega-size" pizzas check with Paul Tiffany at Lloyd Pans <ptiffany@lloydspans.com> as they have baking platforms designed specifically for this. My pizza partner from when I was at AIB (Jeff Zeak) does Pizza Expo each year working in the XLT oven booth and one of the things he makes is a 72-inch diameter pizza, while he does this in an air impingement oven, it might also be able to do this in a deck oven too. I say MIGHT because in a deck oven, regardless of make, you will have hot spots requiring that the pizza be moved/rotated during baking to achieve a uniform bake and when the pizza pretty well fills the entire oven cavity it's a bit problematic in figuring out how you're going to rotate the pizza. This problem doesn't exist in an air impingement oven as the entire pizza is uniformly baked in a single pass.

Dough Clinic / Re: The human hand VS technology.

Mike;

Save yourself a lot of wasted energy by trying to perfect your pizzas at home in a different oven from what you will actually use. To get around the problem you are

experiencing with your commercial oven at home you will need to contact an electrician to determine what amperage draw the oven has. If your home has sufficient amperage you might be able to put the oven on its own dedicated line, or you may need to increase the amperage at your breaker box. The worse case scenario is that you would need to have a dedicated breaker box and have a new line run from the power source (pole?) to your home. A good working dough formula to begin with is as follows:

Flour (strong bread flour) 100%
Salt: 2%

Yeast (instant dry yeast IDY) 0.375%
Water: (about 70F) 60%

Oil: 2%

Procedure:

Add water to mixing bowl

Add salt

Add flour

Add yeast dry directly to the flour

Mix for 1.5 to 2-minutes to hydrate the flour then add the oil

Your target finished dough temperature is 80 to 85F

Immediately take the dough to the bench for scaling and balling

Place dough balls into plastic dough boxes and oil the top of the dough balls

Take to the cooler and cross stack for 2-hours then down stack and allow to cold ferment for 24 to 48-hours

To use the dough, remove dough balls from the cooler, allow to temper AT room temperature about 2-hours or until the dough reaches 50F before you begin opening the dough balls into pizza skins

If you will share with me how you plan to manage your slice operation I can provide additional input.

I hope this helps you get started.

New Forum Members / Re: I need help to make some killer pizza..

JVP123;

When I mix my doughs by hand (which I usually do at home) I like to suspend the yeast (IDY/ADY/CY) in a small portion of warm (95F) water, then stir until the yeast is completely suspended and pour into the cold water that I will use for making the dough. The addition of IDY to the flour or to the dough is recommended only if you are using a mixer as opposed to mixing by hand.

Dough Clinic / Re: IDY distribution problem i_g½.

JVP123;

IDY can be added directly to the formed dough without any problem just so long as the dough is still mixed for at least 5-minutes after the yeast has been added.

Dough Clinic / Re: IDY distribution problem i_g½.

In Mexico much of the flour is milled to a very high level of starch damage (about 16%) which can make it impossible to do an overnight cold ferment on the dough as the dough slowly turns into soup within a short time after mixing. Try this, mix a small dough and after mixing set it aside to ferment at room temperature, after 90-minutes come back to the dough and form it into dough balls. If the dough handles well it is an indication that the flour has a low level of starch damage, but if the dough is soft and extremely sticky your flour has a high level of starch damage. This is important to find out before making and recommendations as it will impact how the dough must be handled once it is mixed.

Dough Clinic / Re: Help from Mexico ,I'm new help me with my dough please

Brewman;

I think it would be safe to say that in most cases a dark colored pan will be better than a bright silver colored pan. The reason being that the silver color reflects heat away from the pizza while a dark colored pan absorbs heat. Additionally, all dark colored pans are not created equally, some are nothing more than some type of finish baked onto the pan, others have an anodized finish applied that is much more durable and then there is the premium pan, made by <www.lloydspans.com> which has a proprietary finish that is both bonded to the metal and has non-stick properties to boot. If you vigorously rub the finish on these pans with the edge of a quarter you will create a flat spot on the quarter but do no damage to the finish on the pan, that's the good news, the bad news is that like other premium things they are more pricey than other pans, but you'll never wear it out.

A good depth for a deep-dish pan is either 2 or 2.5-inches deep with the 2-inch depth being the more common.

Newbie Topics / Re: Chicago Deep Dish Pan: Anodized(dark) vs. Aluminum(silver)

Hate me if you want, but try using a bread bag or "food" bag (not a Zip-Lok bag). Just lightly oil the dough ball, drop it into the bag, twist the open end into a pony tail and tuck it under the dough ball as you place it in the fridge, if you want to stack them in your fridge to save space, put the bagged dough in your existing plastic container uncovered for a couple hours, then cover and stack. To use the dough just invert the bag to turn the dough out. I like to turn the dough out into a bowl of dusting flour that I will use to open the dough balls into pizza skins. The dough maintains a nice round shape and doesn't get damaged or stretched during removal from the bag. You can reuse the bags a number of times too.

Newbie Topics / Re: Ball to Bench Process

Bill;

I'm going to assume you will bake the pizza in a home oven, and the pan is dark colored.

To make a pretty basic pizza here is something to start with:

- 1) 9-ounces
- 2) 4.26
- 3) 9.372
- 4) 8.52

This should give you a pizza from which you can bench mark and then adjust the formula accordingly to give you the pizza characteristics that you want.

Dough Clinic / Re: Mr Dough Doctor

Additionally, if your dough management procedure calls for taking the dough directly from the mixer to the bench for scaling and balling the maximum time that the dough, regardless of size, should be processed (scaled, balled, and into the cooler) is 20-minutes. Failure to follow this guideline can result in inconsistent dough performance or even blown dough. Just as a point of reference, two of us can cut/scale, ball, box and put into the cooler a dough based on 50-pounds of flour weight (about 87-pounds/ 12-ounce dough ball weight/116 dough balls) just inside the 20-minute mark. We've done this for years to demonstrate to our students that it can be done, and no, we don't do this all the time for a living, we only do it once a

year during our annual pizza seminar. If you go to the PMQ web site at <www.pmq.com> there might be a video demonstrating how we do this.

Shop Talk / Re: How long does it take you to cut and ball dough

DDT;

It appears that you don't yet have your recipe in formula form (bakers percent). One easy way to convert any recipe into bakers percent is to weight each ingredient three times and record the weight of each weighing (be sure to tare the container first) after you have weighed each ingredient three times divide the total weight for each ingredient (sum of all three weighings) by three to find the average weight of each ingredient. Then assign 100% to the flour weight. Divide each average ingredient weight by the average flour weight and multiply by 100 to get the bakers percent for each ingredient. Your recipe is now a formula given in bakers percent. In this form you can very easily manipulate the size of the finished dough up or down in weight.

Dough Clinic / Re: Total dough ball weight

DDT;

To get you started here is the procedure:

- 1) Determine how much dough you want to make, in your case 3 dough balls at 326-grams each = 978-grams (to allow for some loss let's use 1,000-grams as the amount of dough needed.)
- 2) Add up the bakers percent for all of the ingredients you use in your dough (it will probably come in close to 170)
- 3) Move the decimal two places to the left on this number (170 = 1.70)
- 4) Divide the desired dough weight (1,000-grams) by 1.70 to get the total flour weight needed to make 1,000-grams of dough.
- 5) Now all you need to do is to enter the new flour weight (let's say 588.2, call it 583-grams) in your calculator then press "X" then enter the ingredient percent you want the weight for and press the "%" key. Read the ingredient weight in the display window. Repeat this for each ingredient and you have a new formula sized to give you 1000-grams of total dough weight.

Hope this helps,

Dough Clinic / Re: Total dough ball weight

Mike;

Just go back to the recipe I directed you to in PMQ (RECIPE BANK) and delete the oil. Main thing is to get the oven hot enough if you want the real deal.

Dough Clinic / Re: Beginner dough questions!

That's a great lookin' pizza! :)

Can you share the details of how you made it?

New York Style / Re: Cold fermented dough for the first time (pepperoni and shrooms)

Oops, thanks for catching that. I neglected to add the addition of the yeast. When making dough at home I normally add the yeast suspension to the water in the bowl immediately before addition of the flour, then begin mixing and all is good. It's important to begin mixing soon after you add the yeast suspension to the water, if not mixed fairly soon the salt and sugar in the water can have a potentially negative impact upon the yeast activity. While I'm thinking about it I guess you could also add the yeast suspension to the water first and then add the salt and sugar (if used) just before you add the flour and begin mixing. Either way should be

fine.

Dough Clinic / Re: Pizza Crust Questions

When mixing the dough by hand, or by machine for less than 5-minutes it is recommended that IDY be pre-hydrated in a small quantity of water at 95F. There is a distinct possibility that the yeast level was either insufficient or did not activate very well (most likely a combination of the two) to become the dominant micro-flora in the dough, this would allow for some other bacteria to become dominant resulting in the development of a "funky" aroma and equally impressive taste were you to proceed with making a crust out of the dough.

Just an educated guess.

Dough Clinic / Re: An experiment that failed impressively

Mike;

I've got a home made dough recipe posted in the RECIPE BANK on the PMW web site <www.pmq.com> click on Food & Ingredients, then the Recipe Bank drop down, use "pizza dough for your search, scroll down to Home Style Pizza Crust. You will want to make the following changes:

- 1) Replace the flour shown with Caputo-00
 - 2) Increase the water to 10-ounces.
 - 3) After step #5 divide the dough into desired weight pieces, oil each dough piece and place into individual plastic bags (bread bags work great, food bags work great too, but not Zip-Lok bags) twist the open end of the bag into a pony tail to close then tuck the pony tail under the dough ball as you place it in the fridge. The dough will be ready to use after 24 to 36-hours. To use the dough, remove it from the fridge and allow it to temper AT room temperature for about 90-minutes, then turn the dough ball out of the bag into your dusting flour and begin opening the dough into pizza skins by your preferred method.
 - 4) If you prefer to use sea salt it can be substituted at the same level as shown. This should get you started on the path to experimenting with making pizza.
- Remember, your mistakes will taste just as good as your successes.

Dough Clinic / Re: Beginner dough questions!

PPG;

If you go to the Pizza Marketing Quarterly (PMQ) web site at <www.pmq.com> and go into the RECIPE BANK you will find a complete formula/recipe for a basic home made pizza that has a very good track record. There are many different types of pizza that you can make, but this is just a good basic recipe than can be modified as necessary to provide specific characteristics in the finished crust that you may be looking for. Generally any good bread flour will work well, and as for the type of yeast to use, any type of baker's yeast will work well for you if used according to package instructions. When making pizzas at home by machine you can use instant dry yeast (IDY) by adding it dry to the flour, but if you will be mixing by hand it is best to pre-hydrate the IDY in warm (95F) water for about ten minutes just as you would active dry yeast (ADY). The same can be said for compressed yeast (fresh yeast). When staging the ingredients into the mixing bowl I like to add the water first, then add the salt and any sugar to the water (no need to stir), this is followed by the flour. Begin mixing the dough until it looks something like wet oatmeal, then add the oil and continue mixing. Another way is to put the oil into the water, then add the flour and immediately begin mixing. I like the first method, but a lot of people like to use the second method, experiment to see what works best for you.

Dough Clinic / Re: Pizza Crust Questions

In addition to Lloyd's Pans, American Metalcraft also catalogs the cutter pans in 14" (top dia) <www.amnow.com> (page 229 of their new, 2015 catalog).

Newbie Topics / Re: Cutter Pan Size

We have been making what we simply call a dessert pizza for a good number of years now, like yours it is a giant leap above what many think of as a fruit or dessert pizza. Here is how we make ours;

16-ounces of cream cheese

8-ounces of powdered sugar

Blend above until smooth.

Add 2-whole eggs and blend in until smooth.

Add 16-ounces of sour cream and 16-ounces of ricotta cheese and mix until smooth.

Mix the above until smooth, the mixture should have the consistency of mayonnaise or very soft butter, if it is too stiff or firm, add cream to thin the mixture to the correct viscosity. Prepare a crust as follows:

Using a regular pizza crust, brush the surface with melted butter, then generously sprinkle with a cinnamon sugar mixture edge to edge.

Prepare apples (just about any kind works well) by slicing and removing the core but leave the peel on, place into a bowl of water to which lemon juice has been added to prevent the apples from browning.

Prepare bananas by slicing about 1/4-inch thick and placing in the same lemon juice water as the apple slices.

Slice kiwi, and strawberries (mango and fresh (not canned) peaches are great too). Other toppings that we add are blueberries, black berries, raspberries red and green grapes, pineapple pieces, coconut, and lightly toasted pecans. From this point on use your imagination. Remember, all of these do not need to be used, time on the pizza, just choose some that will make an attractive presentation with regard to color.

Spread the cheese mixture on the prepared pizza skin about 1/4-inch thick (no thicker), then add the desired toppings and bake as you would any regular pizza. When the pizza comes out of the oven set it aside to cool for several minutes then apply a drizzle of powdered sugar-water icing and serve. These pizzas can be served hot, cold, reheated or hot with a scoop of ice cream. A good friend of mine makes them a little differently, he uses well drained fruit cocktail to replace the fresh fruit and finishes the pizza with a drizzle of sweetened condensed milk right out of the can.

Just don't use pie filling on a pizza.....ever!

New York Style / Re: pizza with fruit (grapes, apples, etc.)

In addition to making your pizza on a piece of parchment paper you could also make it in shallow, dark colored anodized pan (American Metalcraft:

www.amnow.com), then allow the dough to proof for whatever time you feel is appropriate, transfer to the oven to bake for a few minutes (dough will continue to rise for the first few minutes in the oven) and as soon as the dough has "set" slide the pizza out of the pan to continue baking on the oven hearth.

Prep Equipment / Re: Would a Marble board work better than a peel?

Steelplayer;

The citric acid in the soda is an acidulant, meaning that it will acidify the dough to some extent which is usually a good thing where yeast is concerned as yeast is a acid loving micro-organism so it will most likely improve the yeast performance to some extent. Soda, on the other hand is an alkali so it will raise the pH of the dough (higher number) which will typically slow or in some cases even stop the

yeast from fermenting.

Dough Ingredients / Re: Ginger Ale in Dough?

The by-products of combustion while corrosive are actually pretty mild when compared to what happens when we introduce a yeast leavened product into the mix. In commercial ovens this used to be a primary concern until we learned how to address the problem. A number of years ago I was in a bakery that was cited for having rust on the inside roof of their oven, to correct the problem they lined the entire oven with stainless steel but neglected to consider that it would be cooler behind all that stainless, the acids condensed behind the stainless and within 18-months completely rusted out the superstructure of the oven, it was a 200-foot long tunnel oven and when the superstructure gave way the oven folded in the middle and with the conveyor still running it was flopping on the floor like a fish out of water, quite a sight to see.

Hearth Ovens / Re: metal chimney decaying / fragmenting on the inside

When I use fresh mozzarella cheese, I drain it well, and pat it dry, then I like to peel it like an orange and place the pieces on the pizza. The pieces are fairly thin and excess moisture is easily evaporated off during baking.

General Pizza Making / Re: Does some cheese burn more easily than others?

Peter;

One way we have looked at using various liquids in dough (wine, beer, soda, etc.) is to look at the total solids content of the liquid in question and divide the weight of those solids by the total weight of the liquid portion then multiply by 100, this gives us the percent (true) of solids, with this number we can adjust the liquid to provide any amount of liquid or solids needed for the dough. In this case, looking at sugar we have 12-ounces X 28.4 = 340-ml/grams (close enough for making dough). Since we know the sugar content is 33-grams we divide 33 by 340 X 100 = 9.7%, or for every 100-grams of soda that we add we will also be adding 9.7-grams of sugar (again, close enough for dough), so if we want to limit our sugar contribution to 5% based on 16-ounces of flour (22.72-grams) we would need to add 234.22-g/ml of the soda to the dough with the remainder of the dough absorption coming from tap water.

Just another way of looking at it.

BTW: the easy way to find the amount of soda needed to provide a specific amount of sugar (in this case 22.72-grams) is to divide the weight of sugar needed by 9.7 (grams of sugar provided by 100-grams of soda) and multiply that number by 100 (22.72 divided by 9.7 = 2.342 X 100 = 234.22). To test that answer (I'm old school) simply find 9.7% of 234.22 (234.22 X 9.7 (press the percent key) and read 22.719 (the amount of sugar we want to add to the dough)

Dough Ingredients / Re: Ginger Ale in Dough?

Most likely what you are looking at are lumps of un-hydrated flour or possibly even oil soaked flour. This is a common experience with dough that is mixed by hand, especially when it is minimally mixed. To get around the problem I normally just mix/stir the dough a little longer, and to prevent the flour from getting oil soaked I like to hold the oil back until after I have the flour and water well incorporated, then add the oil and continue mixing a few more minutes to incorporate the oil.

Dough Clinic / Re: dough issue

Jamieg:

The acids mentioned are the by-products of yeast fermentation which are generated and released during the baking of the pizza. Additionally alcohol is also released which is also corrosive to metal. As there are different types of stainless steel I would suggest that you discuss the best type to use with an engineer that is familiar with working with commercial oven stacks. You might try contacting R.T. Bundy in Urbana, Ohio to see if you can talk to one of their engineers. You might even be able to buy a length of whatever is recommended from them, or they might be able to direct you to a supplier. The advice to fully insulate the stack pipe is spot on, by insulating the stack you will be able to prevent much of the condensation which concentrates the acids and alcohol which is the real culprit here. Just be sure to use an insulation that is approved for use in high heat applications.

Hearth Ovens / Re: metal chimney decaying / fragmenting on the inside

Noirma;

The very thin format is just another way of saying a very thin crust of no particular type. In the work that we were doing the dough was sheeted to about 9-inches in diameter and then hand stretched the rest of the way out to 12-inches. The dough weight that we were working with was 7-ounces but our goal was to see if we could get that down to 6-ounces and still be able to produce it in a typical pizzeria. Yep, the Salt for Life is the one that you can get at Walmart. It is still my "go to" salt when I'm trying to achieve a significant reduction in sodium content while still maintaining a decent flavor profile in the finished product.

Chitchat / Re: Pizza = healthy Food?

Hi Norma;

If you look at a formula (like the chocolate chip cookie formula mentioned) in true percent as opposed to bakers percent you can easily see what happens to the sugar level when you reduce or eliminate the fat from the formula. The biggest problem experienced with pizza is the fact that we just eat too much of it (portion wise). If we would just limit ourselves to just one, or two slices at the most of a 10 or 12-inch pizza (cut into 8-slices) there would be very few health concern about pizza in general. Before my retirement we were working on developing a more healthy pizza presentation that would appeal to the masses. This pizza was based on a multi-grain crust that was made with 35% of a multi-grain blend (flour, multi-grain blend, Salt for Life (70% less sodium than regular salt), olive oil, yeast, and water. The crust was made on a very thin format. The toppings for a 12-inch pizza included 1.5 fresh tomatoes sliced 3/16-inch thick and placed over the pizza skin, a few fresh basil leaves, and only 3.5-ounces of fresh Mozzarella cheese (torn/pealed like an orange). For additional toppings we were working with some vegan meats (Tim Smith at <tsmith@beyondmeat.com> you've got to try their product to believe it, as well as various poultry toppings and of course, vegetables. I was just recently working for a pizza chain that specializes in a "healthy" pizza presentation, we couldn't get a multi-grain blend while I was there so we made our own from various grains that we found at the local supermarket, after soaking, they were added to the dough about half way through the mixing time to preserve the integrity of the grains. Finished crusts were higher in fiber, lower in carbs and had a great flavor and appearance.

Chitchat / Re: Pizza = healthy Food?

Hummm, meats and tomatoes. For meats just let your imagination guide you (beef, pork, chicken) for processed meats like pepperoni you will need to search out one that you like (people seem to be all over the board with pepperoni). Ditto for tomato, but one of my personal go to's is a can of whole plum tomatoes, drain the

juice off or save it for your next pasta sauce, using your hands, tear the tomatoes apart into medium size pieces, place these pieces of tomato on the skin instead of a traditional sauce (do not go for 100% coverage) I find that when I do this I can get a crispier pizza than I do with a traditional sauce. When tomatoes are in season locally, get some vine ripened tomatoes, slice about 3/16-inch thick and place on sheets of paper towel or any absorbent towel to remove excess moisture, place the slices on the pizza skin instead of sauce. If you want to add any flavoring such as garlic and basil, put diced or crushed garlic on the skin and then add a few fresh basil leaves followed by the tomatoes, this is a hard to beat base for a great pizza.

General Pizza Making / Re: Ingredients

Angus;

You might also be blessed (not in a good way) with flour having a high level of starch damage. When a dough is made using a high starch damage flour the absorption is initially high, but upon fermenting/resting the dough just continually gets softer and more sticky. To determine if this is the case, reduce your total dough absorption to 56% (177.48-grams) and mix the dough as you are presently mixing it. The dough should be slightly dry and easier to handle, then place the dough into a lightly oiled container, drape it with a piece of plastic to prevent drying and allow it to ferment for 90-minutes, turn the dough out onto a lightly floured surface and see if the dough continues to handle well or if it has become softer and much more sticky (this indicates that you have a high starch damage flour). If this is the case you will need to use a lower dough absorption and limit your total fermentation time (mixing to oven) to not more than 60-minutes. If the dough does not become appreciably softer and stickier, try this:

- 1) Mix the dough just until it comes together.
- 2) Place the "mixed" dough into an oiled container and allow it to ferment for 60 to 90-minutes, then turn the dough out of the container onto a floured surface and knead the dough just until it becomes smooth.
- 3) Divide the dough into desired size/weight pieces and place each piece into an oiled container or oil each piece and place into individual plastic bags, twist the open end to close the bag and tuck the pony tail under the dough ball as you now place it into the fridge to cold ferment.
- 4) Remove a dough ball from the fridge after 24-hours, allow it to warm at room temperature to about 50F/10C and open into a pizza skin.
- 5) Dress the skin and bake.

Repeat this for several days if the dough remains fairly easy to handle. This will give you a good idea of how long you will be able to hold your dough in the fridge to further develop flavor.

Newbie Topics / Re: Problem with pie (flour, oven?)

When it comes to ingredients you really don't need very much, and that which you do need is readily available at most supermarkets, or if you make a run to a club store you can get 6-months to a years supply to work with.

The ingredients that you will need are:

Flour: Buy some different flours at first to see what works best for you. All purpose and bread flours are the most commonly used, but if you need a high protein flour to work with most restaurant suppliers will sell you a 50# bag, or just look for Pillsbury Bread Flour (about 12.2% protein content) at your local supermarket.

Salt: Sea salt, Kosher salt, non iodized table salt (the choice is up to you).

Sugar: Only if you really need it (table sugar, raw sugar, honey, molasses, non-diastatic malt powder or syrup) your call.

Yeast: Most of us like to use instant dry yeast (IDY) but many use active dry yeast

(ADY) or compressed yeast (CY). Again, your call, use the one that is most readily available to you.

Water: I think it would be safe to say that most use just plain tap water, but if bottled water makes you feel better, go for it. Just try to stay away from distilled/deionized water as they don't contain the minerals necessary to making really great dough.

Olive oil: I normally use just plain old Pomice oil, but any run of the mill olive oil will work just fine (save the really good stuff for use as a dipping oil). If you can't get olive oil Canola oil or any vegetable based salad oil will also work.

While you're at it, snag a small bag of semolina flour from the supermarket too (you can use it to make a flour blend consisting of 25 to 50% semolina flour with the remainder your regular flour to make some truly great pizzas)

Remember, it isn't so much the ingredients that you use, but rather how you combine them to make your dough and how you end up baking your new creations.

Above all else, enjoy experimenting!

General Pizza Making / Re: Ingredients

It would help if you had your dough recipe given if weight measures or in bakers percent as that would allow us to determine if your dough is in correct balance.

Also, with the way you are adding the yeast, I assume it is IDY (instant dry yeast) as opposed to ADY (active dry yeast, which needs to be hydrated before use) With that said, I think all your dough needs is more fermentation. As long as your dough is mixed to a smooth consistency if has sufficient mixing. Remove the dough from your bread machine as you presently are, form it into a ball and place it into a suitably sized container that has been lightly oiled. Lightly drape the bowl with a sheet of plastic to prevent drying, and set aside to ferment for 2.5-hours. Turn the dough out of the bowl, cut into the desired number of pieces, reform each piece into a ball and place on a lightly oiled counter top or sheet pan to proof for about an hour, or until the dough can be easily opened into a pizza skin. Open by hand and not with the use of a rolling pin as this will give you a much better finished crust. Dress as desired, bake until lightly browned.

Let me know if this helps.

Dough Clinic / Re: Dough is too dense and chewy.

Also, keep in mind that when using a type of flour with unknown quality attributes you may have to experiment with your dough (under your specific kitchen conditions) to find the fermentation time that works best for you. Back when I used to do a lot of new crop flour testing we would occasionally come across a flour made from a wheat variety that had extremely poor tolerance to fermentation. This resulted in a dough that looked good right up until it was fermented, then after as little as 3 or 4-hours fermentation (80F) the dough would show signs of collapse and would not recover.

Don't be afraid to experiment, and unless something goes catastrophically wrong you can always eat those failures and no one will be any the wiser, it's the success stories (pizzas) that we all like to share with others. I think it would be very safe to say that we have all eaten our fair share of less than stellar pizzas in search of the perfect pizza.

Dough Clinic / Re: Problems with Toms PMQ NP dough

I had a lot of the very same questions already asked so I'll wait to hear more about your exact procedure as well as times and temps. Keep in mind the time and temperature are the two factors that must be controlled for effective dough management. Do you ball the dough immediately after mixing? For use in a home

fridge as opposed to a commercial walk in or reach in, you should probably be targeting a finished dough temperature of around 60F. Also, those pans look like they might store a lot of latent heat thus slowing the cooling of the dough, to correct for this you might place the pans in the fridge or even the freezer for half an hour before putting the dough ball into it. Wipe the top of the dough ball with salad oil and do not cover it when you place it in the fridge as this only serves to trap heat in the dough. After the dough reaches a temperature of 45F you can proceed with covering pans to prevent drying. I know everyone here has heard me say this many times before, but you might want to give this a try to see if it works for you. Immediately after mixing scale and ball the dough, wipe the dough balls with salad oil and drop into individual bread bags, not Zip-Lok. Twist the open end of each bag into a pony tail and tuck it under the dough ball as you place it in the fridge. Now you can just place the dough into the fridge and forget it until you are ready to use it. To use the dough, turn it out of the bag allowing it to drop into a bowl of dusting flour, turn the dough ball over to make sure it is fully dusted, then proceed to open the dough ball in your normal manner.

Dough Clinic / Re: My dough balls overflow so much in the refrigerator

Lookin' good!!!

Sprinkle on some shredded Parmesan cheese before baking for a great added flavor and eye appeal. I like to cut mine in half and then cut one half into strips (cross ways) about 1.5-inches wide for dippin' bread, the other half I cut in half for making two Paninni sandwiches. This gives my wife and I an appetizer and a meal all from one 12-inch focaccia.

Your's looks as good as any that I've ever made, makes me hungry. :) :) :)

Thanks for sharing.

Focaccia Style / Re: First attempt at focaccia - no knead recipe

I'm guessing that the refrigerated dough is getting a bit more fermentation and as the temperature of the refrigerated dough is lower it will allow for more oven spring to take place resulting in slightly greater volume/height which translates into a more tender eating crumb structure. If you were baking both pizzas in an air impingement oven, such as is used by many pizzerias, where both would be baked at the same temperature for the same period of time you would most likely also find that the refrigerated dough was baked to a lesser degree than the dough that was not refrigerated, of course this is assuming that the oven was set up to bake pizza made with the non-refrigerated dough, if it was set up to bake the pizza with the refrigerated dough just the opposite would be true. The way I explain this to my students is by taking two identical containers and putting the same amount (weight) of water in each, the difference being that one container is filled with 40F water and the other with 100F water, we put both into the same oven, side by side for the same time and find that the container with the 100F water is always warmer than that with the 40F water.

Dough Clinic / Re: Pan dough extremely light and puffy after cooling then baking

Actually, high absorption and low protein content as well as unknown protein quality are all ear marks of Mexican flour. The high level of damaged starch is what gives the flour its unusually high absorption properties. Then, as the dough ferments over the next two hours as stated, it becomes soft and probably rather sticky as a result of the enzymes in the yeast breaking down a portion of the damaged starch, as a result, the hydrolyzed starch releases the water it was holding and we have a soft dough that can be very difficult to work with. The things

that I would do to help improve the situation are as follows:

- 1) If you can source some vital wheat gluten, add it to your flour at a level of at least 5% of the flour weight, this will result in about a 3% increase in protein content. Be sure to add 1.5-times the weight of gluten added as additional water. Add the dry gluten to the flour and stir in for just a couple of seconds.
- 2) No need to sift the flour.
- 3) Reduce the oil level in your formula to around 2%, this will help to reduce the tenderizing effect of the oil on the dough.
- 4) Put 80F water in the mixing bowl, add salt and sugar (no need to stir) add the flour and begin to mix, as the dough begins to form, add the oil gradually. As soon as the dough is formed and kneaded, divide into desired weight pieces and form each piece into a ball, wipe each dough ball with a little oil and place into a plastic bag, or place it onto a lightly floured surface (counter top) and cover with a piece of plastic to prevent drying. Allow the dough balls to proof/ferment for no more than 1-hour, then immediately begin opening the dough into pizza skins, dress and bake. This is the only way that I know of to get around the high starch damage issue.

Note:

You're kinda stuck using the high absorption, if you don't the dough will be too dry to do anything with.

Newbie Topics / Re: Gluten question

Pizza Garage;

I am unclear as to the meaning of your second paragraph, would you please explain it to me in greater detail, it seems as if something is missing there especially in the first sentence where panned dough in the fridge is removed from the proofer.....
Is the dough in the fridge already panned?

Dough Clinic / Re: Pan dough extremely light and puffy after cooling then baking

The type of pizza referred to as "free form" seems to be gaining in popularity, but I would not refer to this as a "stylish" or novelty type/shape of crust. Free form is where the dough skin is shaped roughly into a circle or into some form of a oblong. For a true novelty approach check out Lloyd Pans <www.llodypans.com> as they have a bunch of different shaped pizza cutters (like giant cookie cutters) like footballs, states, etc.

General Pizza Making / Re: Question on shaping "stylish" Pizza

Without knowing more about the dough formula and the flour used I can only take a "SWAG".

The flour was sufficiently strong, possibly even bromated, to recover during baking (oven spring) and because the dough was cold it had a lot more time to rise due to oven spring than the non-refrigerated dough. The difference in tenderness might be explained by the longer fermentation time the refrigerated dough got. Because the dough was probably at proofer temperature (100F) this was most likely pretty substantial.

Dough Clinic / Re: Pan dough extremely light and puffy after cooling then baking

There is absolutely no difference in the taste of crusts made from bleached or bromated flour as opposed to unbleached and/or un-bromated flour.

The bleaching process is only to make the flour whiter in color and the bromate is used to give the flour a little more tolerance to fermentation as I understand, most

bromated flours are only bromated to about 10-ppm (parts per million) of potassium bromate.

Dough Clinic / Re: Is there any difference in taste between bromated/unbromated flour?

If you mean how long can you ferment the sponge for, 18 to 24-hours is about the extreme maximum. A lot will depend upon the temperature that it is fermented at, the amount of yeast used in the sponge and the strength of the flour. An example of a long sponge ferment time can be seen in what is referred to as an overnight sponge - dough process used by some retail bakeries. In this case the sponge is made using only 0.25% yeast (compressed) based on the TOTAL flour weight, after 18 to 24-hours of fermentation the fermented sponge is brought to the mixer along with the dough side ingredients (with a normal yeast level (typically 1% compressed for pizza dough or 3% for bread dough) and mixed as needed for the product being made.

Bread bags (which can be purchased from any bakery supplier) are my preferred method for storing the dough balls, especially when we have a slack dough condition. In many cases we can save the bags for reuse after turning the dough out of it. As long as it doesn't go in front of the counter you should be able to reuse them for an entire week. As we strip the dough out of the bag we just toss the bag into a clean/sanitary white plastic pail or other suitably sized container and reuse just as they are.

Dough Clinic / Re: enhance flavor, crumb, and crust

You can also use Google or some other search engine to find a plethora of bulbs/bulb suppliers. I was just recently looking for a very specific bulb for my landscape lights and I found suppliers from Taiwan, Japan, China, USA and UK. For search words try high temperature bulbs or oven bulbs. By the way, the bulbs that I was looking for sell locally for just under \$10.00 each and I ended up buying mine for \$1.39. Ain't the internet great? :)

Pizza Ovens / Re: Oven Lamps for up to 500°C / 930°F in Europe?

Your process is a good one for small scale home use but it will be difficult if not impossible into a commercial concept/process. The sponge dough approach is a good approach and I have advocated its use many times, especially when the dough will not be balled and refrigerated in the "normal" manner. Allowing the dough to bulk ferment at room temperature is problematic as the temperature of the room can change resulting in variances in fermentation, even more importantly, what are you going to do with the dough if you experience a slow day? If you allow the dough to continue to ferment for another day at room temperature there will be a significant difference in flavor due to the difference in fermentation, and if you put it into the fridge it could take days to cool down sufficiently to slow the fermentation rate. By the way, I think you misstated the yeast amount as equal to the pre-ferment (50% of the flour + water = a lot of yeast) I'm guessing to say that you meant the dough side yeast is equal to the amount added to the sponge side? In any case, I would think that this process would be best served using a total yeast level of about 1% as compressed yeast. As for the poor performance of the dough in the fridge I think this might be due to an extremely low yeast level that would be used to control fermentation at room temperature. If you can develop your process on refrigerated dough balls you will be able to get a consistent flavor profile and the flavor might be more preferable as you get a different flavor profile from a cold fermented dough as opposed to a hot/warm fermented dough. Remember, in a commercial setting the name of the game is consistency.

A good starting point for you to pursue if you want to go to a cold ferment would be as follows:

- 1) Adjust the total yeast level to at least 1% compressed or equivalence in IDY or ADY.
- 2) Make your sponge just as you presently are.
- 3) Mix the sponge with the dough ingredients using cold/ice water in the dough side.
- 4) Use the old trick of pouring a little oil down the inside of the mixing bowl just before the dough is finished mixing to help get the dough out of the bowl.
- 5) Your target finished dough temperature should be in the 80 to 85F range.
- 6) Take the dough directly to the bench and turn it out of the bowl onto a lightly floured bench.
- 7) Work the dough on the bench a couple of times as you presently are to improve the handling properties of the dough.
- 8) Using oiled hands, scale the dough into desired weight pieces, round into a ball shape, oil the dough ball and place into bread bags (works great where a soft dough is used).
- 9) Twist the open end of the bag(s) into a pony tail and tuck it under the dough ball as you place it onto a tray (sheet pan).
- 10) Place the sheet pan with the bagged dough balls on a rack in the cooler and allow to cold ferment for 24 to 48-hours (you will need to test to see what works best for you).
- 11) Remove a quantity of dough balls from the cooler and allow to temper AT room temperature until the dough reaches 50F.
- 12) Turn the dough ball out of the plastic bread bag into a bowl of dusting flour and open into a pizza skin by your normal manner.
- 13) Place opened skin onto a dusted, wood prep-peel and dress the skin to the order, peel into a deck or stone hearth oven for baking.
- 5) After mixing the dough, allow to rest for 15-minutes

Dough Clinic / Re: enhance flavor, crumb, and crust

Chicago Bob;

You bring up a very good point. The terms of endearment "high gluten", "all purpose", and "bread" flour are just that, words. There is no set standard for protein quantity of flour in any of these termed categories, hence, what might be termed as a bread flour by one manufacturer could very well have a similar protein content and strength profile to a high gluten flour made by a different manufacturer. I have seen quite a few all purpose flours that had protein and strength characteristics right up there with a lot of what I would call bread flours.

Dough Clinic / Re: HG vs BF Question

I make these quite frequently at the request of my oldest son (they're his favorite). Pizza pockets, aka calzones are super easy to make, just roll your favorite pizza dough out to about 1/8-inch thickness, cut into circles or squares, brush the edges with a little water, add filling of creamy ricotta cheese, a little mozzarella cheese (to help bind the ricotta), followed by the fillings of your choosing. If you used a round dough piece, fold it in half over the filling and crimp the edges together first using your fingers, then follow up using a fork to get a good, solid crimp. If using a square piece of dough, fold it into a triangle over the filling and crimp as above. Using a scissors cut one or two vent slits in the top of each piece, then brush with whole egg and bake at 400 to 425F until golden brown, as soon as the pockets come out of the oven brush with garlic butter and sprinkle with powdered Parmesan cheese. You can "up the ante" a bit by sprinkling on some shredded

Parmesan cheese just before placing it in the oven. We also like to add a leaf or two of fresh basil to the filling for a great flavor and aroma. These are good for a party too as you can make them ahead of time and keep them warm in the oven until you're ready to serve them.

Other Types / Re: Pizza Pockets

What we found many years ago is that the higher the protein content of the flour the greater its potential for creating a crispier crust. You can get a first row seat to seeing this if you make fried chicken using flour. Make one or two pieces using a lower protein flour and the same using a high protein flour. In all of our tests we found that the high protein flour (13.2%+) resulted in a coating that was more than just crispy, it was hard and "flinty". To some extent the same thing happens in pizza crust BUT there are so many other factors that come into play that it is hard to make a definitive statement. Things that influence the crispiness of the bottom of a pizza crust: the dough ingredients (especially sugar, eggs or milk), amount of fermentation, absorption, thickness of the pizza skin, what the pizza is baked on, if a pan pizza the color, thickness and depth of the pan as well as the use of oil or shortening in the pan, the type and thickness of the material the pizza is baked on, the baking time and temperature, change any one or more of these and you run the risk of changing the crispiness on the bottom of the crust. here aren't nearly as many variables with the chicken.

This is why there is so much confusion over crispiness, there are so many variables that we can think we are doing the exact same thing to evaluate crispiness but in reality a variable has crept in to distort our findings. Add to that the subjectivity that is used to assess crispiness and you begin to get a feeling for what we are up against. By the way, when we evaluate crispiness in the lab we use a Texture Analyzer to make the distinctions so subjectivity is off of the table as a variable.

Dough Clinic / Re: HG vs BF Question

Here are some changes I might suggest to your dough formula;

Flour: All Trumps

Reduce the IDY to 0.25%

Reduce the honey to not more than 5%

Reduce the oil to 1.5%

Now you should have a dough that is better suited to acrobat dough spinning.

Also, be sure to let the dough warm to about 50F after the cold fermentation period before you begin opening it into a skin.

If you just want to open the dough further and easier, stay with your existing dough formula and add 1% or a little more PZ-44, it will do wonders for helping open the dough, I would probably want to combine this with a change to All Trumps flour (14%+) to give you the desired extensibility without tearing.

Dough Clinic / Re: Newbie looking for some help with a dough problem.

Bill;

You might try this;

After mixing the dough (use 85F water to make the dough) place it into a large oiled bowl, oil the top of the dough, cover with a piece of plastic and allow to ferment as long as possible, I like to use 6-hours as a starting point, turn the dough out of the bowl and press into the greased baking pan, cut off any excess dough. I would suggest pressing the dough to about 3/16 or 1/4-inch thickness in the pan.

Then allow the dough to proof/rise in the pan for about 45 to 60-minutes, then dress the dough and proceed in your normal manner.

If you don't have a formula, try this one for starters:

Flour 100%

Salt 2%

Sugar (if called for) 2%

olive oil 5%

Compressed yeast 1%

Water (85F) 55%

To convert percentages to weight measures:

Decide how much flour you want to use.

Enter the flour weight into your calculator press X and enter the percent you want the weight for then press the "%" key and read the weight in the display window. The ingredient weight will be expressed in the same weight measures (pounds, ounces, etc.) that you showed the flour weight in.

Example:

You want to use 2-pounds (32-ounces) of flour to make the dough.

32 X 2 press the "%" key and read 0.64-ounces

32 X 5 press the "%" key and read 1.6-ounces.

Etc.

Dough Clinic / Re: Hopefully you can help. Need a Dough Angel

And I bet if you follow Mitch's advice the dough will stretch out ohhhh sooooo easy. Just turn the dough out of the bowl into a container of flour or a floured counter top, flip it over so both sides are floured and have at it. I make my bread and pastry dough this way too.

Dough Clinic / Re: Pizza Dough Snapping / Retracting Back.

If you can share your best efforts to date with us (formula and complete procedure)it would help everyone in giving direction. Right now I'm thinking that if you haven't used a natural starter yet that might be a next direction for your testing.

Dough Clinic / Re: Dough is great...but lacks an aftertaste.

To substitute IDY (instant dry yeast) for the ADY in my suggestions above, I would recommend using 4-grams of IDY and add it dry (directly to the dry flour) before you begin mixing the dough. To go up a step in protein content, to something in the 12% range you might try using Pillsbury's Bread Flour. This flour was packaged for home use specifically where bread machines were being used. It works pretty well in pizza too, and it should be pretty easy to get as it is marketed nationally through most supermarket chains.

Dough Clinic / Re: Pizza dough seems heavy and tough.

I totally agree with all the answers, and TX is spot on with regard to freezing the flour. We have held it for years in the freezer without any significant loss of quality. Here is another trick that you can use too. Split up the flour into smaller batches, plastic containers (I just use plastic bags like gallon size Zip-Lok bags, label and date the bags for future reference) Place into the freezer for 6 to 8-weeks, if you're like us, freezer space is not all that plentiful (two chest freezers filled with frozen fruit, vegetables, cheese, and venison) go figure! Then, after the 6 to 8-week freezing period you can remove some of the bags for more immediate use (say, a

3-month supply) and store them in a convenient location at room temperature, then as you draw those down you just remove more bags of flour to replace them. Once the flour has been frozen for 6 to 8-weeks you can store it at room temperature for at least 6-months, after that the flour will generally show some signs of natural oxidation (think bromate) which might impact the way the flour performs as compared to fresh flour. The oxidation process is slowed so much under frozen storage conditions that the flour will perform as fresh for at minimum a year or more. This is based on someone not liking the performance of an oxidized (bromated) flour..... most of us will fail to see a problem here. But if it is a problem, just relegate the flour to making bread and rolls. We just pulled flour out from our freezer for Holiday baking that was dated as being just over two years old (that's why it's important to label and date each bag) and it performed flawlessly in making bread, sweet dough, calzones and pizza.

Neapolitan Style / Re: Caputo Blue Bag - Shelf Life?

Thank you for all the very kind words.

It was a pleasure to have the opportunity to work with the great PMQ staff in putting all of that material together into a great cover and story. A story from behind the scenes; When I came down to Oxford, Mississippi for the photo shoot and interviews I stayed a couple of days with my friend, Tom Boyles (PMQ Australia) and we got in a couple of days of squirrel hunting before beginning the real work at the PMQ office. Oh, by the way, there was talk at the office about making a squirrel pizza.

Pizza News / Re: Tom Lehmann (The Dough Doctor) featured in PMQ Pizza Magazine

OZ;

If I might, I'd like to suggest the following as a starting point for you.

- 1) Assuming you are using ADY (active dry yeast) increase the amount to 6-grams.
 - 2) Decrease the oil content to 12-grams.
 - 3) I don't know what your finished dough temperature is, but I would increase the temperature of the water to around 75F/24C.
 - 4) Decrease the amount of water added to the mixing bowl to 350 ml.
 - 5) Measure out 50 ml of water at 100F/38C and place in a small bowl, add the dry yeast to this water and stir in. Let hydrate for 10-minutes, then stir again and pour into the water in the mixing bowl.
 - 6) After stirring the dough cover it lightly with a piece of plastic or foil (not air tight) and allow to ferment for 3-hours, then turn the dough out of the bowl onto a lightly dusted surface and knead the dough for several minutes, just enough to ensure it's smooth.
 - 7) Divide the dough into desired weight pieces, form into balls, lightly oil, and place into individual containers, drape with plastic and allow to ferment at room temperature for 2 to 3-hours before using OR place the lightly oiled dough balls into individual plastic bags (bread bags work well) and twist the open end into a pony tail, tuck the pony tail under the dough ball as you place it into the fridge. The dough will be ready to use after 24-hours but it will keep for up to 72 or more hours in the fridge.
 - 8) To use the dough, remove from the fridge, and set on the counter, allowing it to warm to 50F/10C before using it.
 - 9) Turn the dough ball out of the bag into a bowl of dusting flour and proceed to open the dough ball into a pizza skin by your preferred method.
- I don't know if I'd freeze the dough balls for up to a month, but they should be good for at least two weeks.

To thaw a frozen dough ball, place it directly in the fridge from the freezer, allow to slack out/thaw at least over night but you can leave it in the fridge longer to fit your schedule. Remove dough from fridge and place on counter top and allow to temper TO 50F/10C (see #8 above) before proceeding to open the dough into pizza skins.

Let us know how this works for you. Once you begin getting a crust that looks more like what you want, you can begin experimenting with your formula and procedure/dough management procedure to further fine tune your finished crust.

Dough Clinic / Re: Pizza dough seems heavy and tough.

OZ;

So as not to have you start all over, it would help us if you could provide us information such as dough formulation and dough management (dough making and handling procedure) that you are presently using. This way we might be able to make suggestions/recommendations based on what you already have. Be sure to provide us information on your oven, the baking time and temperature as well as what your baking platform is (pizza stone, pizza screen, pan, and if a pan, what is the color of the pan).

Dough Clinic / Re: Pizza dough seems heavy and tough.

Here's my hat in the ring too.

Diastatic malt is the malt used by most bakers because the alpha amylase enzymes contained in it hydrolyze damaged and some native (intact) starch granules into sugar to support yeast fermentation and aide in crust color development. Think of it as a cheap source of sugar. Nondiastatic malt is not enzyme active, hence its only function is as a flavoring agent (think malted milk balls) and a source of sugar/sweetener but to achieve these goals the nondiastatic malt must be used at significantly higher levels than diastatic malt. In all of my work with Caputo and organic (unmaltered) flours we have found that the dough handles better and colors up better when we have added diastatic malt to the dough. This is especially so when baking in a home type oven where we don't have the temperature potential to develop the desired crust color within a reasonable baking time.

Dough Ingredients / Re: Diastatic Malt--The Pizza Bible

Trip;

Welcome!

Here is a good starting formula in bakers percent.

Flour: (any good bread type flour) 100%

Salt: 1.75%

Sugar: (only if you need it for crust color) 2%

IDY (instant dry yeast) 0.375%

Water (70F) 65%

Olive oil: 2%

Procedure:

Add water to the mixing bowl, add the salt and sugar(if used), then add the flour and put the dry IDY on top of the flour.

Machine mix the dough just until the flour has been hydrated, just a couple of minutes, then add the oil and mix for 1-more minute.

Note: If you will not machine mix the dough hydrate the IDY in a couple ounces of warm (100F) water and let set for 10-minutes, then stir/whisk and add to the water in the mixing bowl. Be sure to reduce the amount of water in the bowl by the same amount that you hydrate the yeast in.

After adding the oil mix the dough just until it clings together and forms a ball if

using a mixer. If mixing by hand, knead the dough for just a few minutes (4 to 5) then set aside to bulk ferment for 1-hour, turn the dough out of the bowl and scale into desired weight pieces, lightly oil each dough piece and place into individual plastic bags (bread bags work great). Twist the open end of the bag into a pony tail and tuck under the dough ball as you place it in the fridge.

Allow the dough to cold ferment for 24 to 48-hours (can go longer if you want).

Remove dough from fridge and allow to warm AT room temperature until it reaches 50F.

Turn the dough ball out of the bag into a bowl of dusting flour and open into a pizza skin using your preferred method.

Dress the pizza skin and bake.

This should get you started making pizzas, once you get started and are comfortable with what you are doing you can begin experimenting with the dough formula and management procedure to achieve the finished pizza you are looking for.

New Forum Members / Re: Newby.....

LBAR;

Actually, adding oil to the dough really can dehydrate it. Allow me to explain, oil can be used like water to adjust the viscosity of the dough, for example since oil is a liquid, a dough made with 55% water/absorption and 5% oil would have similar handling properties to a dough made with 60% absorption and no oil. Since the oil is replacing the water in this case it can be said to be lowering the water content (dehydrating) the dough. BUT if you mean that the use of oil in a dough causes it to lose moisture (dehydrate) faster than a dough made without oil, that is not correct. Should a pizza dough be made with or not? It all depends upon the type of crust that you are making, as many traditional crust formulas do not call for any oil at all (how traditional do you want your crust to be?). What does oil do in a dough? It helps to lubricate the dough for slightly improved handling/stretching properties and it helps to seal the dough for improved retention of leavening gas, especially during baking. What does it do in the finished crust? It helps to retain some of those wonderful aromas released from the pizza during the baking process for a more flavorful finished pizza, it will also add a unique flavor to the finished pizza depending upon the flavor profile of the oil being used, it can also help to produce a more tender eating finished crust (fat/oil is a tenderizer) and it can also improve the overall eating properties of the crust. People like fat, no doubt about it, and the more fat you put into a dough formulation (within reason) the more people will like the resulting crust. This is one reason why those frozen pizzas you see at the supermarket enjoy such a high popularity (some will contain as much as 16% fat).

Dough Clinic / Re: Is adding olive oil to a recipe a good thing?

It is normal for the skin to shrink a little when you shake it. it also shrinks when you peel it into the oven but you don't see it. Normal shrinkage is about 1/2-inch. If this is an issue for you the easiest way to correct it is to just make the skin about an inch larger in diameter than what you want it to finish up to be. If the shrinkage is really excessive, like an inch or more, your dough is too elastic and may need more fermentation time or more tempering time at room temperature between removing it from the fridge and opening the dough into a pizza skin.

Dough Clinic / Re: What are we doing wrong?

It appears that you are making a thick crust pizza. If it were me, I'd adjust the water temperature to give me a finished dough temperature in the 80 to 85F range, I would then divide it into desired size/weight pieces, lightly oil each dough piece,

drop each piece into individual bread bags, twist the open end to close and tuck the pony tail under the dough ball as you place it in the fridge. Allow the dough to cold ferment for 24 to 72-hours, remove from the fridge and allow to temper AT room temperature until the dough reaches 50F, then press into a greased or oiled pan, allow to proof/rise for 60-minutes, dress as desired and bake on a grid oven shelf as opposed to a pizza stone which can give the finished pizza an excessively dark bottom crust.

Note:

If you use shortening, butter or margarine the dough will be a lot easier to fit to the pan.

If you use oil in the pan you will probably need to press the dough into the pan, then set it aside for 20-minutes, or so, and press it again. This may need to be repeated 2 or 3 times.

Butter/shortening/margarine: Finished crust will be more bread like and have a dry feel to it but it will not be quite as crispy as it could be with oil in the pan.

Oil: The finished crust will have an oily feel to it but it will be more crispy Try them both to see which you like.

Dough Clinic / Re: Can a short rise be a long rise?

With some of the pizzas that I make I will actually open the dough into a pizza skin and place it onto my dusted peel, then give it a little shake just to settle the dough on the peel and reassure myself that the dough isn't sticking, then I will begin dressing the skin, and depending upon how long this takes me, I might give it another shake (you would be surprised at how many time I find the dough already sticking a little at this time, I then finish dressing the dough, shake it again to make sure it's still sliding on the peel and IMMEDIATELY take it to the oven.

Dough Clinic / Re: What are we doing wrong?

Thank You;

24-hours fermentation at room temperature is a heap of fermentation so we can most likely say that is not the problem here, so I'm going to go with a lack of salt in the dough formula. For optimum flavor characteristics in the finished crust you should have between 1.75 and 2.25% salt. This is based on bakers percent. To look at your dough formula in bakers percent divide the weight of the ingredient by the weight of the total flour in the dough formula and multiply by 100.

If your salt is already within this range, we will need to have more information on your dough formula and dough management procedure.

As for the lid being popped off of the fermentation container, here are a couple of things to consider:

- 1) Adjust the water temperature used to make your dough to give you a finished dough temperature of 80 to 85F.
- 2) Immediately after mixing, scale the dough to desired weight pieces, form into balls, wipe lightly with salad oil, and place into your fermentation containers without lids.
- 3) After the dough has been in the fridge for about 3-hours, place the lids on the containers and snap into place.
- 4) Allow the dough to cold ferment for 24 to 72-hours.
- 5) Remove container of dough from fridge (keeping it lidded) and allow to temper at room temperature until the dough ball reaches 50F.
- 6) Turn the dough ball out of the container into a bowl of dusting flour and open the dough ball into a pizza skin by your preferred method.
- 7) Dress and bake the pizza skin in your normal manner.

Dough Clinic / Re: Dough Flavor and Proof Technique

Mitch;

With a 20-degree lintner malt powder the normal dosage is only about 0.25% of the total flour weight. Excessive malt can/will make the dough sticky and difficult to work with. The acid content of your starter might also be at least partially responsible too. If the acid content is high in the starter the acid will degrade the flour protein (gluten) to the point where it is extremely soft and overly extensible, and if taken to the next level it will also contribute to a sticky dough consistency due to the break down of the proteins. With your starter you might not even need to use any malt, so I might suggest that your next test be made without any added malt, diastatic or non-diastatic to see if there is any improvement. After that, I would look at using a dough absorption of around 60% with the amount of starter reduced to maybe 1%, and the dough mixed just until the dough begins to pull off of the sides of the mixing bowl, this is recommended because depending upon the micro-flora in the starter you may not achieve the level of biochemical gluten development that you would normally achieve using yeast to leaven the dough. Please keep us posted on your progress.

Dough Clinic / Re: Dough too extensible after the mix - I feel like I know less today than ever!

Or worse yet, are you dressing all of the pizza skins at the same time before you begin baking? This could lead to the skins adhering to the bench/counter top if just flour is used under them. Moisture from the dough and or the sauce can penetrate into the dusting flour under the dough to cause it to stick. My own personal way of addressing this problem is to dress each pizza on its own prep peel using a blend of equal parts of flour/semolina flour/and fine corn meal as a dusting flour between the wood prep peel and the dough. If you don't want to go this route, try this dusting flour blend under the dough on your bench/counter top as opposed to your regular dusting flour to see if it gives you a better release. As Mitch indicated, information on your dough and dough management technique would greatly help as high absorption doughs are more prone to this problem than low absorption doughs. Doughs that are fermented for very long periods of time or those that are cold fermented in a covered container without being left open for the first 2 to 3-hours after going into the fridge can also pose problems due to their stickier nature.

Dough Clinic / Re: What are we doing wrong?

Joe;

When using GM All Trumps flour you should be able to use any where between 58 and 65% dough absorption without any problem. Actually, from the picture you provided, the dough ball looks pretty typical for 24-hours cold ferment. I see you are using the smaller size dough boxes, are you wiping the dough balls lightly with oil and leaving the box uncovered for at least 3-hours in the fridge before covering the box? What is your finished dough temperature? We normally like to see the temperature around 80F with dough management that looks like this: mix; scale; ball; place in box; wipe with oil; allow to remain uncovered in the fridge for at least 3-hours; cover and cold ferment for 1 to 3-days. To use the dough, remove from fridge, allow to remain in the box (covered) for 3-hours or until the dough reaches 50 to 55F, then flour the dough ball(s) and begin opening into pizza skins.

Regarding your Chicago type pizza, did you use oil rather than shortening in the pan (oil will provide a crispier finished crust). Did you remove it from the pan immediately after baking (leaving it in the pan causes the crust to become soggy). Did you bake the pizza for 35 to 45-minutes?

Dough Clinic / Re: what does a dough ball supposed to look like.

If it were me, I'd come clean and take my lumps (which you'll probably get). Since she thought it was gluten free but still got stomach issues after eating it she most likely has a gluten intolerance problem, but I would encourage her to discuss Celiac Disease with her doctor just to rule it out. Celiac Disease can be a much greater health risk than gluten intolerance, and will need to be addressed differently to avoid complications down the road.

Gluten Free / Re: What if a pizza isn't gluten?

Yep, a whole lot more top heat.

Dough Clinic / Re: pizza crust

Why not par-bake in the pan, dress and place back into the oven to finish baking in the pan? There might be a point where you will be able to remove the pizza from the pan to allow decking it for a minute or so.

General Pizza Making / Re: Gluten free in a cutter pan - your thoughts on how to cook it

You are trying to make a thick crust pizza right? The dough looks to be quite gassy, maybe it was left to temper at room temperature too long before you opened it into a pizza skin. At the time when you're opening the dough ball into a pizza skin it should be about 50F. Also it looks like it might be a bit too elastic/bucky at the time of opening possibly due to excessive fermentation. You might try heavily docking just the center portion of the dough (where you don't want it to rise as much) as this will control the rise in that part of the dough giving you a better defined crust edge. If it is not a thick crust that you are after, reduce the scaling weight to between 9 and 12-ounces for a 12-inch pizza.

Dough Clinic / Re: Extra puffy cornicione

Mel;

If you will go to the PMQ web site at <www.pmq.com> and go to the RECIPE BANK search for pizza dough and look for my hand made dough "recipe" which might serve as a starting point for you.

Welcome!

New Forum Members / Re: Making Pies

The progression in handling properties of a normally formulated yeast leavened bread or pizza dough goes something like this;

Tight and very elastic with insufficient fermentation

Extensible and slightly elastic with normal fermentation for the flour and dough formulation (this is the sweet spot)

Moderately tight but very elastic when the dough receives excessive fermentation for the flour and formulation (in baking lingo we call this "bucky")

As fermentation proceeds beyond this point the dough becomes increasingly soft but this can be overcome by reworking (re balling) the dough. When we make product from frozen dough that is beyond its useful (formulated) life we can get another shot at making a pretty decent product from it by reworking the dough.

The mechanism at play here is oxidation of the dough, as it is reworked we expose the dough to more oxygen which repairs some of the damage done to the gluten bonds resulting from excessive fermentation, all you need to do then is to wait for the dough to relax once again and have another go at it. This is even done in some pizzerias as a means of salvaging dough that has gotten long in the tooth.

New York Style / Re: My dough less extensible more elastic over time

Mac;

Chicago Bob is "spot on".

When hand stretching these low absorption doughs there is a tendency to stretch them too thin in the center section leaving the dough thicker around the edges.

After you have pretty well opened the dough try using a rolling pin to finish opening it as this will give you a more even dough thickness across the entire skin, then as Bob has said, spread the sauce out to within a quarter inch, or so, of the edge and finish dressing in the normal manner. This should help to control the crust dimension and thickness.

Thanks Bob, :)

Dough Clinic / Re: Extra puffy cornicione

Chicago Bob;

You NAILED IT!

Couldn't have said it better myself.

When we par-bake crusts, especially thin crusts they have more than a passing tendency to want to cross the line from pizza to pita. By putting about half of the sauce on the dough/pizza skin you accomplish a lot in terms of preventing this from happening.

Really enjoying retirement and keeping busy consulting and writing articles for Pizza Today and PMQ magazines. :)

Cracker Style / Re: Getting a crispier crust?

Can you share with us how you are forming your pizza skin? A lot of times the problem you are experiencing can be traced back to the forming technique used.

Dough Clinic / Re: Extra puffy cornicione

BYAMIT;

It appears that you are trying to make a cracker type crust. Try this: After balling the dough, very lightly oil the dough ball and drop it into a bread bag, twist the open end into a pony tail to close and tuck it under the dough ball as you place it into the fridge for about 24-hours. Remove the dough ball from the fridge and allow it to temper AT room temperature for about 2.5-hours, then turn the dough ball out of the bag onto a floured counter top and roll the dough out as you are presently doing. The fermentation should add a better crisp to the crust than you are presently getting. Another option is to continue as you are doing, apply about 1/2 of the normal sauce to the pizza skin and par-bake for about 2-minutes (time will be variable depending upon your oven) then remove from oven, apply the remainder of the sauce and dress as desired and place back into the oven to finish baking. Both methods should improve the crispiness but the first procedure will also improve the bite and the flavor of the finished crust.

Cracker Style / Re: Getting a crispier crust?

MARS86;

If you will send me an e-mail at <thedoughdoctor@hotmail.com> I will be glad to send you a copy of a Dough Management Procedure that can be used as given or modified to fit your specific requirements.

Dough Clinic / Re: PIZZA DOUGH ROLLER

Because it impacts the way the crust eats and it has a huge impact upon the crust in a DELCO operation where it contributes to a tough, chewy eating characteristic,

then too its an indicator of other problems which might be present. Is a gum line something to be concerned about in a home baking scenario? I can't answer that unless your crust gets soft/soggy soon after baking, isn't as crisp as we might like it to be, has an objectionably tough or chewy eating characteristic, then there might be a concern.

Neapolitan Style / Re: tips to avoid GUMLINE w/ neapolitan dough?

Not a problem.

The higher the dough absorption the softer and more fluid the dough becomes. Being softer/more fluid means that the dough will expand more readily during the fermentation process creating a larger dough ball with all things being equal. Like all things, it can be taken to an extreme where the dough will begin to lose the ability to retain gas or it will flow outward excessively (flatten). Going the other way, an extreme reduction in dough absorption will tighten the dough to an extent where it will exhibit sufficient resistance to expansion (we call this lack of extensibility) to inhibit the expansion of the dough due to internal gas pressure, hence we may no longer see as much expansion at low absorption levels. Any ingredient that impacts the dough extensibility will also affect the size of the dough balls after fermentation, for example, PZ-44 softens/weakens the dough allowing it to expand or stretch more easily, hence the judicious use of PZ-44 can result in a greater dough ball size due to internal gas pressure resulting from fermentation, conversely, any ingredient that will tighten the dough (reduce extensibility) such as oxidants (ascorbic acid, azodicarbonamide/ADA, bromate) can reduce the dough ball size by strengthening the dough to the point where it resists expansion due to the effects of the internal gas pressure. While increased absorption does impact the rate of fermentation with higher absorption values resulting in a faster fermentation rate, the impact is not so great to result in what you are observing, instead, it is just the affect of having a softer, more extensible dough that is expanding more readily due to the forces of internal gas pressure resulting from fermentation.

Dough Clinic / Re: Hydration levels impact on rise rate

A gum line is a layer of pasta like dough situated immediately below the sauce, typically about 1/8-inch thick. While there is ALWAYS a layer of pasta like dough under the sauce, it isn't this thick, and more importantly, when you tear the dough apart it cleaves cleanly, like tearing a slice of bread apart, when you have a gum line the crust "feathers" as you pull it apart. By this I mean it stretches as it is pulled apart before finally breaking/tearing. We call it the "dreaded" gum line because there are so many different causes for it, and until you correct the right cause it will haunt you forever. There is also what we call a false gum line, this occurs when you slice the pizza in the conventional manner and look at the cut edge you will see what at first appears to be a gum line but instead this is only compressed crust formed by the cutter as it passes through the dough. The correct way to check a pizza for a gum line is to either tear it apart, or tear a slice apart looking for the feathering as described above, but also for the appearance of baked crust all the way up to the sauce layer where you will see just a VERY THIN gray colored line immediately beneath the sauce, this is perfectly normal and not to be confused with a gum line. The other way to check for a gum line is to invert a pizza or slice and carefully cut it in half lengthwise (crust edge to tip) using a scalpel, or single edge razor blade (I use a special tool called a Scaritech #GR2002 from <www.scaritech.com> or you can find a similar tool from any supply house providing baking tools for artisan bakers. In this case you simply cut the inverted pizza/slice through the crust and then fold the pizza in half so the two topped

sections are facing each other, this will allow you to inspect the crust for the presence of a gum line (this is the method employed by the big pizza chains). To learn more about the dreaded gum line and its many causes and corrections go to PMQ.com and look for the article that I wrote on the subject in my column "In Lehmann's Terms".

Neapolitan Style / Re: tips to avoid GUMLINE w/ neapolitan dough?

Jeff;

Three things come to mind here, 1) What color is your deep-dish pan? Many of the CM pans that I see are just bright metal that do not bake very well. The pan should have a dark colored finish both inside and out. If your pan is bright metal you will need to season it before you can get a decent bake from it. 2) Your formula contains approximately 16-ounces of flour and 9-ounces of water plus roughly 4-ounces of oil. Possibly reducing the oil to 2-ounces might help a bit, or if you want to stay with the high fat content, try using melted or softened margarine as they do in Chicago. In either case, try adding the fat about half way through your mixing procedure rather than right up front as is commonly done. This delayed fat addition method works better when high fat levels are employed. 3) What is your total baking time? In Chicago these pizzas are baked at 500F for approximately 45-minutes. If you are baking on a stone this might result in an excessively dark bottom crust color, if that is the case, try placing a screen under the deep-dish pan during baking to create an air gap between the pan and the stone which will allow for the longer baking time without developing excessive bottom crust color.

Dough Clinic / Re: My soggy dough

Don;

If you maintain your fat temperature at 365F during frying you will get a longer life from it (more uses) before it begins to break down or rancidify due to oxidation which is accelerated at high frying temperatures.

Off-Topic Foods / Re: Deep frying: oil use, storage & disposal

I think BRADTRI has a good, workable solution. Continue to offer the existing crust/pizza since that is what the customers have come to expect, then also offer a "Manager's Special" which is your concept of a pizza. Track the pizza sales and let your customers decide what they like, remember, if you are not personally buying as much pizza as your customers are you don't have a vote in what they like or don't like. That's always a tough one for new operators to swallow.

Dough Clinic / Re: Taking over a pizza place

Brian;

You will be able to achieve more consistent results if you leave the lid off of the container(s) for at least an hour or so. One of the things that I've found is that when the dough is not properly managed the dough exhibits a pronounced tendency to over ferment so the knee jerk reaction is to reduce the yeast level until the fermentation is under control, but by doing this you can impact the flavor of the finished crust, crispiness, and porosity. Additionally there is also a tendency for the dough to not rise in the center producing a finished pizza with a thin or possibly soft center section, sometimes the complaint is that the pizza is crispy when it first comes out of the oven but quickly becomes soft or soggy, these characteristics have all been traced back to insufficient yeast level. If you are experiencing any of these issues, this might provide some insight, but if all is good, revert back to the old adage, "if it ain't broke, don't fix it"

Remember, there is no right or wrong way to manage a dough, there are just some

ways that are more effective and create fewer problems along the way than others. By the way, I just saw that Harbor Freight has their infrared thermometers on a special sale at less than \$20.00, what a deal!

New York Style / Re: How long out of the fridge before you bake?

Jeff;

Yes, you adjust the temperature of the dough as it comes off of the mixer by manipulation of the temperature of the water added to the dough. If your dough looks to be ready to use on Wednesday but you want to use it on Saturday, in all probability your dough temperature is too high so you would use colder water when making the dough. Also, if you are covering the dough by placing it into a tightly closed container when placing it into the fridge, leaving it uncovered (cross stacked) for a couple of hours before sealing it closed will also help to slow down the rate of fermentation. Can you freeze the dough? The answer is both yes and no, yes in that you can freeze the dough but it will take overnight in the fridge to slack it out (thaw it) and another several hours to allow the dough to warm sufficiently for shaping into a pizza skin and baking. Due to the damage to yeast cells during the freezing process you might find that the dough is a little softer and more extensible (not always a bad thing) after freezing and slackening out. No in that it probably isn't necessary if we're only looking a freezing it for a day or two, I think it is easier to just manage the dough for the longer cold ferment time. With all of that said, if while the dough is in the fridge you find that the dough looks to be ready to go sooner than you anticipated, there should be no problem in putting the dough into the freezer to either freeze it, or to super cool it. To super cool the dough place it into the freezer for about two hours (uncovered or open) and then transfer it back into the fridge until you're ready to use it then just manage the dough as you would any dough that you're taking out of the fridge, no special handling needed.

General Pizza Making / Re: How long to bulk ferment

Brian;

One way to think of a pizzeria is as a continual pizza party where the guests are paying good money for their pizza, and it is our number one objective to provide each guest with a consistent and favorable dining experience. This is why the refrigerated dough management procedure was developed and why so much research has been conducted to develop effective dough management parameters. A good and fast way to measure the dough temperature is with a non-contact infrared thermometer which are now available for around \$25.00 whereas a good dial/stem type thermometer might cost as much as \$20 to \$25.00 so it is really a toss up, but for convenience and speed, it is awfully hard to beat the infrared thermometer, which requires that you just point, shoot and read the temperature. Peter brings up a good point about the temperature of the home refrigerator, we have a new one and it holds right at 36F, but then there are only two of us, I'm sure the temperature would be different if our boys were young and still at home periodically taking inventory of the fridge. Commercial coolers or retarders as they are sometimes called, are required by law to operate at 34 to 40F, this is why you might see plastic strip curtains over the door of a commercial walk in cooler since it improves the operating efficiency of the cooler by about 10% as they help to provide a constant seal even when the door is opened. Commercial reach in coolers are not as efficient as the walk in coolers and this is why we suggest using a lower finished dough temperature for pizzerias using reach in coolers. Another good point to remember is that if you do not cross stack (ventilate/leave the lid off) the dough containers for at least a couple of hours after putting it in the fridge, the

dough will continue to ferment rather vigorously. As the dough ferments it also generates heat (heat of fermentation) at the rate of about 1F per hour, so, depending upon how long the dough has been in the fridge, where it was at in the fridge (top or bottom shelf), the actual temperature of the fridge, and a bunch of other factors, as Peter correctly stated, the temperature of the dough as you remove it from the fridge can be variable which will affect the dough tempering time between when it is removed from the fridge and when it is ready to be opened into pizza skins, and how long you might have to open any additional dough balls that will not be immediately opened.

As you can see, there are a lot of factors at play here.

New York Style / Re: How long out of the fridge before you bake?

The term comes from the use of the Alveograph, a laboratory instrument that essentially blows the dough into a bubble to the point of bursting. The "W" factor is much like the volume of the bubble formed (simplified). So, essentially, the greater the "W" number, the stronger the flour. While the Alveograph has been used for assessing the strength/quality characteristics of hard wheat flours, it was designed specifically for soft wheat (pastry) type flours. There is a long running battle over how significant the Alveograph results are when applied to hard wheat flours. Dr. Carl Hosney (Kansas State University) conducted a rather thorough study about 20-years ago looking at the Alveograph as it pertains to hard wheat flours.

New Forum Members / Re: Hi! What is a W Rating for Flour?

Peter:

Our research has shown that 50F should be the lowest temperature that the dough is opened into pizza skins at. The reason for using 50F is that it allows for the longest time to work with the dough that you have removed from the cooler. For example, when a pizzeria removes dough from the cooler it may remove several dozen or more dough balls at a time and when the 50F dough temperature is used the window of opportunity to use those dough balls is typically around 3-hours. If they were to use a higher temperature, say 75F the window of opportunity to use those dough balls, depending upon room temperature, might only be an hour or so, making dough projection a nightmare for the pizzeria. In a home setting where we are dealing with only a couple or a few dough balls at most, theoretically, just about any temperature could be used so long as you can handle the dough. If you are planning on a pizza party where you will be making quite a number of pizzas over a period of time, beginning to open the dough balls at a lower temperature might have some practical value.

New York Style / Re: How long out of the fridge before you bake?

We have found that it is much easier to effectively manage the dough and get consistent performance from the dough if it is taken directly from the mixer to the bench for scaling, rounding and then directly into the fridge. If you want to have more fermentation after your cold ferment period all you need to do is to increase the dough temperature off of the mixer by 3 to 5F increments until you get the amount of fermentation you want, and if you are getting too much fermentation, or the dough blows, just reduce the dough temperature in 3 to 5F increments until the desired results are achieved.

General Pizza Making / Re: How long to bulk ferment

A 50/50 blend of your Mozzarella (too salty) and Provolone would work just fine. Some pizzerias use 100% Provolone cheese on their pizzas and blends of Mozzarella and Provolone are commercially available.

Pizza Cheese / Re: Grande Whole Milk Mozzarella loaf really salty

If you find that the cheese is indeed too salty you can also try blending it with another Mozzarella cheese. That being the case, I'd try a 50/50 blend to start with and if it is still too salty then go to a lower use level as suggested.

Pizza Cheese / Re: Grande Whole Milk Mozzarella loaf really salty

And, if you can take it to the next step and freeze the flour for a minimum of 30-days you will find that the flour will remain bug free almost indefinitely when stored in a suitable container at room temperature, but that does not preclude the flour from oxidizing and the fat in the flour from turning rancid (a major problem with whole-wheat flour), which can have an influence on both dough performance and finished crust flavor. To get around this problem refrigerated storage of the flour is recommended after it has been subjected to frozen storage. When I was actively engaged in baking research we used to store the flour in the freezer for 45-days and then transfer it to the cooler for long term storage where we worked from the flour in our long term testing (sometimes over a year or more) without any observed variations in the performance of the flour. I agree, refrigerated storage of the flour doesn't hurt in the least bit.

Dough Clinic / Re: Flour Question

Some things to keep in mind about high protein flours like All Trumps (14+%) is that there is more protein available to be developed into gluten, so by mixing this flour for a longer time, at a mixing speed capable of developing gluten, you have the potential for making a stronger, tougher, more elastic handling dough than you would if using a lower protein flour such as King Wheat (about 11% protein content). When using a higher dough absorption with any flour you will effectively create a more fluid dough consistency which decreases the work being put into the dough by the mixer agitator so with all things equal, such as mixing/agitator speed, the higher absorption dough will not receive as much gluten development within any given time as the same dough made with a lower dough absorption. To some extent this can be overcome by increasing the energy put into the dough (increasing the mixing/agitator speed). Hence, if you were to mix a dough for 10-minutes having a dough absorption of 58% you would achieve a certain amount of gluten development, now if you were to increase the dough absorption to 68% and mix for the same length of time, at the same mixing speed you would achieve a lesser amount of gluten development, and then, if you were to mix that 68% absorption dough at a higher/faster mixing speed for the same length of time you would achieve a greater level of gluten development.

When using a mixer such as a Hobart 20-quart mixer (A-200/AS-200/AS-200-T) the mixing time will be dependent upon a number of factors, including flour protein strength/content, dough absorption, agitator design and dough size. When using either a 12-quart (A-120) or one of the 20-quart mixers I like to size my dough so I can mix it at 1st. speed for two minutes (+/-) add the oil, mix it two more minutes at 1st. speed, then finish the mixing at 2nd. speed which usually takes about 8 to 10-minutes. If you need greater dough capacity than this mixing procedure will allow for you will need to do all of your mixing at low/1st. speed which typically means that your total mixing time will be around 15-minutes. How much flour should you use in one of these mixers? That is impossible to say for anything but a factory new mixer as some older mixers which have had a tough life may not handle 2nd. speed mixing chores well at all, and if the thermal overload switch has been tripped many times it may trip out at the mere suggestion of mixing a dough at 2nd. speed. I've even seen them so bad that unless the dough was sized on not

much more than 2.5-pounds of flour it would not mix a dough for 15-minutes without tripping out the overload switch. As you can see, every mixer is a law unto itself.

These same issues also apply to every other size of mixer, and when you add the fact that some mixers are 3-speed and others are 4-speed, which is further clouded by the fact that some mixers are rated as heavy duty while others are rated as medium or light duty (all at the same bowl capacity) you can see why there is so much confusion over the amount of flour to use in sizing a dough for any mixer. The best advice I can give to anyone with a mechanical mixer is to not use a dough larger than YOUR mixer is capable of easily handling throughout the entire mixing cycle at whatever mixing speed you opt to use.

Dough Clinic / Re: Dough machine All Trumps

Jeff;

Over the years we have studied just how much pizza dough should be mixed for optimum dough performance and finished crust quality characteristics. All of our tests have shown that pizza dough should be under mixed. determining how much mixing the dough should receive is difficult to ascertain when you don't have a reference point in gluten development such as full development and then some as is the case with bread dough. What we have found is that if you mix pizza dough just to the point where it doesn't tear when you are rounding it you have sufficiently developed the gluten for most pizza applications. There is a method for assessing this level of gluten development and I demonstrate it in the AIB pizza class each year but it is too difficult to explain in text (but not difficult to do). I just returned from a visit at PMQ Magazine where we did a number of pizza videos and interviews. We did not get into all of the intricacies of mixing pizza dough due to time constraints but we are already planning on another video session in the near future and assessment of proper gluten development (dough mixing) is one of the topics at the top of the list. In short, if you are achieving just enough gluten development so the dough doesn't tear during the rounding procedure, your gluten development is probably about right.

Dough Clinic / Re: How important is a smooth skin?

Michael;

A good or great sauce doesn't need to be complicated at all. When I make a true sauce I use nothing more than the best crushed tomatoes that I can find locally. Before I apply the sauce I lightly brush the dough skin with olive oil, then apply some crushed or diced garlic, add a few fresh basil leaves and then add the crushed tomatoes. Great flavor, fresh taste!

My all time favorite is to prepare the dough skin in the same manner but instead of using crushed tomato I like to use sliced of ripe, garden fresh tomato and just lay them over the dough, no need to try to get full coverage, 60 to 70% coverage is about right. In the winter when I can't get ripe tomatoes my go to is Stanislaus 74/40 Tomato Filets, and if I can't snag a can of those, my next best option is to use canned whole plum tomatoes which I tear apart with my fingers, lightly drain, and use in place of the fresh tomato slices. This approach gives you both the texture of the tomato and in my opinion, more importantly, it gives you a burst of fresh tomato flavor as you bite into those thicker pieces of tomato which you just can't get from a typical sauce.

When it comes to cooking a sauce, I am a firm believer in never cooking a pizza sauce, pasta sauce yes, but pizza sauce, never. All of those great aromas you smell when the sauce is cooking are gone forever, you will never taste them on your pizza. I do believe in making my sauce on the day prior to use to allow the flavors

to release and meld, but the sauce will get all the cooking it needs when the pizza is baked. Very few pizzerias cook their sauce due to potential food safety issues as well as issues with the health department and the 4-hour rule (states that a product can remain at a temperature capable of supporting microbial growth for a maximum accumulated time of 4-hours (40 to 160F). This means that a sauce would need to be cooked to above 160 and then cooled to 40F or below all within a total accumulated time of 4-hours.

Sauce Ingredients / Re: Cooked vs Uncooked pizza sauce....

According to Hobart's recommendations the maximum dough size for their N-50 (an industrial version of the K-5-A with 1/6 horse power) is 2 Kg. or roughly 4.5-pounds of total dough weight at 60% dough absorption. This is about equal to a dough based on 2.75-pounds of flour weight.

Dough Clinic / Re: New Kitchen Aid Pro mixer

Using any type of mixer that we might use for mixing our doughs we cannot form a stable emulsion without the use of an emulsifier. As soon as the agitation stops the oil immediately begins to separate from the water and float to the top of the water where it comes into direct contact with the water, soaking into it with the earlier stated results. In order for yeast to propagate it needs a specific balance of nutrient (molasses is commercially used) and oxygen which is bubbled into the fermentation vats. I don't know if yeast cells can have multiple daughter cells at the same time, but I do know that in a dough system a bud can grow into a daughter cell and split, but it will not reproduce (bud) from that point on.

Dough Clinic / Re: new to using a mixer

JPB:

It's really hard to say what might have gone wrong when working natural ferments as you are. But the lack of extensibility would tend to indicate that there was a lack of fermentation, or possibly too much acid formation in the preferment. The excess acid content would greatly weaken the gluten structure allowing it to rip and tear easily during the shaping process. A lack of fermentation would create a dough that had limited extensibility and any attempt to open it much beyond 1/4-inch in thickness would cause it to tear.

Dough Clinic / Re: (re-post from wrong category) Extreme Inconsistent Levain Results

When you say the dough is lifting off of the deck during baking, is it lifting up around the edges or more as large white colored pockets throughout the center of the baked pizza? Many times if you are developing bubbles under the dough skin during the early stages of baking the pressure lifts a portion of the dough up off of the deck and with the air gap between the deck surface and the dough it doesn't get properly baked in that specific location. Normally though with this condition there is also a bubble evident on the top of the pizza too. If these bubbles are not present then we need to look at something else and in that case I would guess that the problem might be coming from inconsistent incorporation of the fermented portion of the dough (poolish). Since the poolish is heavily fermented it has a fairly high acid content and little or no sugars present. Combined, high acid and no sugar contribute to poor crust color development. Can you send a photograph of the bottom and top of your pizza so we can get a better idea?

Thanks,

Dough Clinic / Re: Dough acting strange.

By the way, great micrograph showing yeast cells. If you look carefully you can see individual cells and also budding cells as well as cells with daughter cells. The budding cells have what appears to be a small bump on it and the cells with a daughter cell have a more developed cell (still attached) that is called the daughter cell. With dough fermentation the budded cells will develop into daughter cells and then split off, but they will not bud to reproduce.

Dough Clinic / Re: new to using a mixer

A good many home bakers and some pizzeria operators report that the weather impacts the amount of water that they must add to their doughs, but research has shown that the weather, aside from temperature, has essentially no impact upon the dough absorption so we studied these claims and when we put the water and oil in the bowl together the oil almost immediately separated and floated to the top of the water, then when the flour was added it came into direct contact with the oil and the oil was absorbed into a portion of the flour thus negating that portion of the flour from producing gluten resulting in a difference in the feel of the dough which has been interpreted as a difference in dough absorption properties. In our testing we were able to reproduce the observations being reported, and when we developed an ingredient staging procedure to correct the problem we got consistent dough performance. This procedure which we call the delayed oil addition method is gaining wide acceptance in both the retail (pizzeria) and wholesale (commissary and frozen pizza) pizza industries.

When I'm teaching a class I ask how much gluten does flour contain? Answer: None. Flour contains proteins which when agitated in the presence of water forms what we call "gluten".

When flour is agitated in the presence of oil/fat it makes a rue used in making a smooth gravy because the fat or oil inhibits the ability of those proteins to form gluten, hence you get a thick gravy without stringiness. Something to keep in mind for later this month.

Dough Clinic / Re: new to using a mixer

Chaze;

It looks like you are using about 6-pounds of flour, with that flour weight in an A-200 mixer, I would not mix at anything but 1st. speed, and 15-minutes would be about right. As for adding the yeast, it all depends upon the type of yeast that you are using.

ADY: hydrate in a small amount of 100F water, allow to hydrate about 10-minutes and add to the water in the mixing bowl.

IDY: add it dry directly on top of the flour.

Compressed yeast: crumble it right on top of the flour just before you begin mixing.

Note: When you see me mixing a dough you will normally see me standing with my hand resting on top of the mixer, this is so I can monitor the temperature of the motor. If the motor begins getting hot, the dough is too big for your mixer, ditto if the mixer momentarily stalls during operation. If you allow the mixer to continue mixing until the thermal overload switch trips out the switch will get soft and begin tripping out at the slightest provocation, leading to a visit by your friendly mixer repair person.

When assessing the status of the dough during mixing, just look for that creamy color and the development of a smooth skin over the surface of the dough, they go hand in hand, this is your first indication that the dough has probably been sufficiently mixed.

Dough Clinic / Re: new to using a mixer

Chaze;

It all depends upon your dough size. When I mix pizza doughs in a Hobart A-200 series mixer (using a reverse spiral dough arm) I put the water in the bowl first, then add the salt to the water followed by the flour, mix at low speed for about 2-minutes, or until you don't see any dry flour in the bowl, then add the oil and mix for another minute at low speed. If your dough is sized with 1,000 grams of flour you can then mix at 2nd. speed for about 8 to 10-minutes to finish the dough (gluten is nowhere fully developed) BUT if you sized your dough on 1500 grams of flour or more, the advice to mix only at first speed was good advice. If you are mixing at 1st. speed, you should mix for roughly 15-minutes, again, this is nowhere full gluten development.

Dough Clinic / Re: new to using a mixer

Insta;

For a low hydration cracker type crust you should, ideally, have your water at a temperature that will give you a finished (mixed) dough temperature in the 80 to 85F range. It's impossible to say what that temperature is without knowing room temperature, flour temperature, and friction factor of your mixer, and if that isn't enough, keep in mind that as your room and flour temperature change so will you need to adjust the water temperature. The friction factor is a number that is calculated for each mixer that is used to take into account the gain in dough temperature as a result of friction during the mixing process. Once you have established a friction factor you need to remember that any change in dough formulation, mixing speed, mixing time or dough size can/will require you to recalculate the friction factor. The formula for calculating friction factor (FF) is as follows: 3 times the actual (final/mixed) dough temperature minus the sum of the flour, room and water temperature = FF.

For most people at this website a little experimenting will give you a good idea of what the water temperature needs to be, and if during your experimenting you end up with a dough or two that is colder or warmer than desired, don't sweat it, adjust the water temperature for your next dough and enjoy eating your mistakes. :) By the way, if you're still not glassy eyed, the formula for calculating desired water temperature for a specific dough temperature is as follows: 3 times the desired dough temperature (DDT) minus the sum of flour temperature (FT), room temperature (RT) and friction factor (FF).

Dough Clinic / Re: Ideal water temp for making pizza dough

Wow, if only you could have attended our annual pizza seminar last month, it was focused on exactly what you are seeking to learn, in fact, we had a person from India in attendance. Aside from looking at an Individualized Training option on pizza at the American Institute of Baking (AIB), my employer for nearly the last 50-years, I am not aware of any hands on training for the types of pizza you mention aside of that offered by the AIB. If you think you might be interested in looking at this option further, please feel free to contact me directly at
<thedoughdoctor@hotmail.com>

Shop Talk / Re: Looking for Training to be Pizza maker

H8;

I don't mind doing my pizza testing all by myself, or with immediate family members, it just leaves that much more pizza for me to enjoy as I can eat my mistakes and no one will be the wiser.

Dough Clinic / Re: Dough won't open after fermenting

Chaze;

Using AT flour, and assuming a walk in cooler, target a finished dough temperature of 80 to 85F. When making the dough put the water in the bowl first, then add the flour, salt, and sugar (if used) DO NOT add the oil. Mix for 2 to 2.5-minutes at low speed, then pour in the oil and mix for another minute at low speed. Change to #2 speed and mix for 8 to 10-minutes. The resulting dough should have a smooth, creamy appearance. Take directly to the bench for scaling and balling, then place into dough boxes, lightly oil the top of the dough balls, and take to the cooler, cross stack for 2.5-hours (variable) then cover, after 18-hours the dough will be ready to use, but will keep for up to 72-hours in the cooler. To use the dough, remove from cooler, keeping covered, allow the dough to temper AT room temperature for 3-hours, or until the dough reaches 50F, then begin opening into skins by your preferred method (if you will be forming the dough skins by pressing you will most likely need to add something like PZ-44 to control dough memory, and in fact, a lower protein flour would be better suited to a press formed dough.

Dough Clinic / Re: new to using a mixer

There is no way that you can transition from the K5-A to an 80-quart Hobart mixer with a "C" hook. It is a little bit better using the reverse spiral dough arm but then you must limit your batch size to not much more than 500-grams of flour weight. The A-120 or A-200 Hobart mixers can pretty well replicate the mixing performance of the 60 and 80-quart models if you use the reverse spiral dough arm and limit your batch size to 1000 and 1,500-grams of flour respectively. Anything bigger than that may stall the mixer or cause it to overheat, and that is never good for a mixer. My thoughts on the pictures, the dough ball and the dough skin really show signs of under development, or a very tough, bucky dough. The under mixed condition, as previously noted could be due to the lack of yeast, or conversely, a bucky dough is typically the result of excessive fermentation. The appearance of the dough in the containers looks to be under fermented to me. I would suggest doing a couple of simple experiments (that's the real fun part of making pizzas) to see if you can get a better performing dough specific to your unique circumstances. Keep us posted on what your discoveries are.

Dough Clinic / Re: Dough won't open after fermenting

Boxed pizza, aka delivery/carry out pizza is never as good as fresh made pizza. The problem is that the box becomes a sauna and the crust gets steamed creating a soft and usually somewhat soggy presentation. You will also want to hold the pizza up off of the bottom of the box to allow some steam to escape from the bottom of the pizza, for this you will need to use ripple sheets, Crust Savers or Dri-Pie mats. You should be able to Google any of these to find a potential source.

General Pizza Making / Re: Pizza boxes, tupperware, or transporting ideas?

The dough appears to be very weak, quite possibly due to the very low level of IDY being used. I have posted a formula and procedure for an emergency dough designed specifically to be used within a couple of hours after mixing, but does not hold up well in the cooler for more than the day it is made on. By increasing the IDY level to at least 0.375% or preferably 0.5% of the flour weight I think you might get better biochemical gluten development within the abbreviated fermentation time. I'd suggest looking for a finished dough temperature of about 90F, then immediately scale and ball the dough, lightly oil the dough balls and place into plastic bags or plastic containers (but do not lid the containers, instead, just drape a piece of plastic over them. Allow the dough balls to ferment at room temperature for a minimum of 2.5-hours, more if you can before you begin opening

the dough balls into pizza skins. Be sure to just turn the dough balls out of the bags or plastic containers without further working of the dough ball. I like to invert the container over a bowl with dusting flour, then make sure the entire dough ball is dusted before I begin opening it into a pizza skin. Let me know if this procedure gives better results than you have been getting.

Dough Clinic / Re: Dough won't open after fermenting

Mark;

I forgot to add, if you find that your dough is too tight to open easily by hand tossing, just begin increasing the dough absorption gradually until the dough is sufficiently soft to open easily, if you get the absorption too high you will find yourself putting your hand/fingers through the dough, so a little experimenting might be in order.

Tom Lehmann/TDD

Dough Clinic / Re: Tom, Does my mixer compare to yours

Mark;

The mixer that we used during our pizza seminar was a Hobart Legacy model with an 80-quart bowl and a reverse spiral dough arm. We mixed our doughs just until they had a smooth appearance which allowed us to round the scaled dough pieces without tearing the skin (this makes rounding faster and easier to accomplish which is important when you're rounding 80+ pounds of dough into dough balls weighing between 10 and 16-ounces). All of the doughs came off of the mixer between 80 and 82F, we had all of the dough balls ready to go into the cooler within 20-minutes of coming off of the mixer. Dough boxes were cross stacked for 2-hours, then down stacked and covered. The dough was ready to use on the following day after about 22-hours in the cooler. To use the dough balls we brought them out of the cooler and allowed them to temper at room temperature for 2.5 to 3-hours before beginning to open them into pizza skins. We had absolutely no problem opening randomly selected dough balls up to about 40-inches in diameter, in fact the students had fun doing it. Pizzas from these doughs came out great.

Note: we opened the dough balls up to 40-inches just to demonstrate biochemical gluten development. The correct amount of mixing for a pizza dough is just until the dough begins to take on a smooth, creamy appearance in the mixing bowl.

I hope this helps.

Dough Clinic / Re: Tom, Does my mixer compare to yours

Brooklyn;

The actual temperature of the water is only the means to the end, the end being the desired finished (Mixed) dough temperature. Most pizzerias work with a finished dough temperature of 80 to 85F when they have a walk in cooler or 70 to 75F if they have only a reach in cooler. Depending upon the weight of the dough balls, 1-hour cross stack time is very short, more typically it is between 2 and 3-hours.

If you want to e-mail me at <thedoughdoctor@hotmail.com> and ask me for a copy of the Dough Management Procedure I will be glad to send you a copy.

New Forum Members / Re: Dough Crisis... Someone please help!!!

Mitch;

Yes. The only time it doesn't work very well is when I'm working with a very high absorption dough, then it's just easier to do it entirely by hand.

Newbie Topics / Re: Why two rises?

An old baker's trick to clean up the flavor of the frying fat is to fry some potatoes in the fat after every few uses. If you can find a fat that is designed specifically for frying it will keep longer than other types of fat. The thing to look for is rancidity. Control the frying temperature of the fat to 365F to get the longest life from it.

Off-Topic Foods / Re: Deep frying: oil use, storage & disposal

I mix, scale/divide, ball, oil, place in bread bags, immediately place in refrigerator, allow to cold ferment 24 to 72-hours, some times more, then remove from the fridge, allow to warm AT room temperature for about 3-hours or until the dough reaches 50F, then turn the dough ball out of the bag into a bowl of dusting flour and proceed to immediately open the dough ball up into a pizza skin. My preferred method for opening the dough ball is to roll it out to about 10-inches in diameter, then bench stretch the flattened dough ball to full diameter (usually 14-inches). This method gives me all of the desired characteristics of a hand stretched skin but without the troublesome thin spots in the center.

Newbie Topics / Re: Why two rises?

If you can't find the dehydrated mashed potato flakes you can also use grated potato. Just fine grate raw potato and add it at about 5% of the flour weight, the only thing you can do to your formula/ingredients is to increase the fat/oil content to about 10% of the flour weight. You can go as high as 15 to 20% if need be, but start at 10% and see if you like what you see. Keep in mind that increasing the fat content will also give you a more tender (bread like) eating characteristic.

Dough Clinic / Re: Need a No-Knead Dough Recipe for Half-Baked Pizzas

CZ;

At 0.23% IDY you might be a little bit on the low side for optimal fermentation, depending upon your dough management procedure. I normally use 0.375% IDY in all of my doughs with great success after 18 to 24-hours in the cooler (they will keep for up to 3-days if necessary). We just completed our annual pizza class this afternoon and one of our demonstration doughs that the students worked with was made with a 12.8% protein content flour, 58% absorption, 1.75% salt, 0.375% IDY and 2% oil. The dough was mixed for 8-minutes at medium speed and came off of the mixer at 78F, it was immediately scaled and balled, then placed into dough boxes, cross stacked in the cooler for 2-hours, then lidded and left to cold ferment for 18-hours. On the following day the dough boxes were removed from the cooler and allowed to temper AT room temperature for 3-hours before the students began opening the dough balls into pizza skins. The dough balls all opened beautifully and two of them were opened to about 40-inches in diameter (16-ounce dough ball weight) by the students to demonstrate the effects of biochemical gluten development. Pizzas were all great by the way. If your dough balls are normally too elastic to open easily you probably don't have sufficient fermentation on the dough. To correct this you can do any of the following: Ferment the dough longer before opening into pizza skins; increase the finished dough temperature; or increase the yeast level.

Dough Clinic / Re: Dough won't open after fermenting

Since a 65% absorption dough is not an especially high absorption dough, you should be able to put the water in the bowl first, then add the salt to the water (no need to stir it in) then add the flour, yeast (if it's IDY) and start mixing at low speed until all of the water has been absorbed into the dough (you can't see any dry flour in the bowl) then add the oil and mix at low speed for 1 to 2-minutes, then, if possible, go to second speed to complete the dough mixing which should take

about 8 to 10-minutes at medium speed or about 15-minutes at low speed. Don't try to overly develop the gluten as it isn't necessary since pizza dough is best under mixed at the mixer, allowing biochemical gluten development during the cold ferment process to do the work for you. This will also make it a lot easier on your mixer too.

Dough Clinic / Re: new to using a mixer

I agree, 6% salt?? The taste of the crust should be pretty salty.

To achieve a softer crumb structure after the second bake you might try adding 2% dehydrated potato flakes (instant mashed potatoes) to the dough along with 5% additional water. If you like the results, adjust the amount of dehy and water to give you the finished crust characteristics you're looking for after the second/recon bake.

Dough Clinic / Re: Need a No-Knead Dough Recipe for Half-Baked Pizzas

Mcease;

Yes you can freeze your dough but it should not be frozen for more than two weeks at most. Freezing it for more than two weeks can/will result in a high probability of inconsistent dough performance after you defrost it and get ready to make your pizzas.

Just manage your dough as you normally do, but when you get to the point where you are ready to open the dough up into a pizza skin, re-ball it, wipe it with salad oil and drop it into a bread bag, twist the open end to form a pony tail and tuck the pony tail under the dough ball as you place it into the freezer. To slack-out (thaw) the dough transfer it to the fridge for about 24-hours, then bring it out to room temperature and allow it to temper to 50F/10C, then invert the bag allowing the dough ball to drop out onto a floured surface or a bowl of dusting flour, then open the dough ball up into a pizza skin by your preferred method.

Newbie Topics / Re: Flour

It's a quiz on a television program, not a "pizza test/quiz". It's like a test on Cuban culture by asking questions answered on the I Love Lucy show! Sorry if I dated myself there.

Chitchat / Re: QUIZ: How Well Do You Know Pizza?

What you are looking for is the Emergency Dough Formula and Procedure.

If you cannot find it, try this.

Using your regular dough formula:

Double the yeast amount.

Delete any added sugar from the dough formula.

Increase the temperature of the dough water by 15F.

Mix the dough just until it looks smooth.

Immediately scale and form into balls.

Place the dough balls into your dough boxes and lightly oil the top of each dough ball.

Stack the dough boxes nesting one box atop the other to seal closed.

Dough balls will be ready to use in about 3-hours and they will have a shelf life of about 1-hour, maybe a little more.

Tip: As dough balls begin to over age, open them into pizza skins and place on pizza screens, store on tree racks in the cooler (cover with a plastic bag to prevent excessive drying)

To use the pre-opened skins, allow to warm at room temperature for 20 to 30-minutes, dock well and use as you do your regular pizza skins.

I know, it's a pain, and it ain't the same as your regular pizzas, but it sure beats the alternative.

Dough Clinic / Re: HELP

Jim;

Do you ball the dough prior to putting it in the container?

We have found that in some cases if the dough is tightly covered immediately when placing the dough in the fridge we get the bubbles, but if you lightly oil the dough ball and place it in the container but DO NOT cover it until it has been in the fridge for 2.5 to 3-hours the bubbles do not develop. You might give this a try to see if it helps.

Dough Clinic / Re: Too much yeast???

Chaz;

The way to do it is to form the dough ball, lightly oil it, and then drop it into a plastic bread bag, situating the dough ball at the bottom end of the bag, then twist the open end to close the bag (I do this very easily and quickly by grasping the bag slightly above the dough ball and giving the dough ball a good spin with the other hand. This forms the open end of the bag into a twisted pony tail. The dough ball is actually laid upon the twisted pony tail as it is placed into the fridge. This method allows the bag to expand a little to accommodate the increase in size of the dough ball without blowing out the bag. Some time ago I provided a reader here with a number of commercial bread bags to use in making their dough (if that person is reading this you might possibly weigh in). I like to store my used bags in a plastic bowl (actually a soft spread tub) that I keep in the fridge and I reuse the bags more times than I care to admit to.

Dough Clinic / Re: In search of the perfect chewy crust

David makes a very good point about starting with a sourdough (if that is what you are looking for) formula and procedure that has a known track record, then once you have mastered that, you can begin to experiment and do all of the fun things with your pizza. As for your existing starter, I can't say anything about how much to use as that will vary with the age/acidity/microflora of the starter. Those characteristics of the starter are all controlled by the way you manage, feed and store your starter. I might suggest that you reduce the amount of starter to about 1/4-cup and see if that makes a difference, if the dough holds together at that level, begin increasing it until you see something that you don't like, then settle on a level for that specific starter, keeping in mind that different starters may work differently at different levels.

As for putting the dough into sealed containers, I personally, have never had good success doing that, the dough cools too slowly, condensation forms on the top surface of the dough, and it seems to be generally more sticky to work with when opening the dough into a pizza skin, instead, I like to use the bread bag technique as described.

Dough Clinic / Re: The blob...

RDY\$TRYL;

Without knowing a lot more about your dough formula and dough management and baking it is hard to say what you will need to do, but here is something to start with:

- 1) Use a stronger flour, like General Mills All Trumps (14+% protein content).
- 2) Delete and oil from the dough formula.
- 3) Start with a dough absorption of 65% and increase if necessary.

4) Don't worry about dough mixing, just get it mixed so it is fairly smooth, with a temperature of around 80F (Use 85F water if mixing by hand), then portion, ball, oil the dough ball and drop it into a plastic bag (twist the open end to form a pony tail and tuck the pony tail under the dough ball as you place it in the fridge), allow the dough to cold ferment for at least 36 to 48-hours, remove from fridge, allow to temper at room temperature to 50F, then open into pizza skins, dress and bake.

Dough Clinic / Re: In search of the perfect chewy crust

Was the dough rounded into a dough ball with a smooth skin after it was mixed and cold retarded?

If the properly rounded into a ball, then I would say that the dough is over fermented as it appears to be tearing itself apart. In some circles this is referred to as a "rotten" dough due to its appearance. This could have resulted from a number of things, dough temperature too high/hot after mixing, dough placed into a tightly covered container for cold fermenting, The "old" dough that you added might have been too old, or too much yeast was added to the dough.

More information would help.

Dough Clinic / Re: The blob...

It looks like you have plenty of fermentation time, so look at the salt level. Insufficient salt = bland flavor. the amount of salt to add to your dough is about 8-grams but anything between 8 and 10-grams should work well.

General Pizza Making / Re: Dough slightly bland, advice please

Dan;

I know that there are a lot of different ways to prepare/dress pizza skins and peel them into the oven, but for me, I like to table stretch the skins out in my dusting flour and then pick up the formed skin and transfer it to a lightly dusted wood prep peel (I reserve my metal peels for removing the finished pizzas from the oven) where I can make one last size/shape adjustment. I then dress the skin and peel it into the oven. Tip: After applying the sauce shake the dough skin on the peel to make sure it is sliding freely, then finish dressing the skin, and give it another shake just to make sure, you're now ready to peel the dressed skin into the oven. Please keep us posted on your progress.

Dough Clinic / Re: I'm cooking 24 pizzas Saturday in my Blackstone Patio Oven

Sonny;

Pizza show in Las Vegas in October? I'm not aware of any in L.V. at that time, but we are holding our annual pizza seminar at AIB in Manhattan, Kansas over the period of October 27 to 30, 2014, maybe that's the one you are thinking of? To get information on the course, go to the AIB web site at <www.aibonline.org> and click on the seminar options. We have been holding this class for well over 30-years now. This year, due to the number of new players entering the retail pizza industry the emphasis is on "back to the basics", and yes, Lloyd Pans will be there. The Las Vegas pizza show is Pizza Expo and the dates for that show are March 23 to 26, 2015.

Dough Clinic / Re: cooking on lloyds pans

Whole-wheat doughs are actually pretty easy to make once you know the trick.

The trick is in using a soaker, here is how it's done:

Use any whole wheat flour, but whole white wheat flour works the best from a flavor point of view.

Weigh 10-ounces of the flour into a suitable container; add 7-ounces of water and stir until it comes to the consistency of wet oatmeal, let this rest at room temperature for 30-minutes, then check to see if it has firmed up and taken on something of a dry appearance and feel, if it has, add another ounce of water and stir in, wait another 30-minutes before checking. If the dough feels tacky you are done with this part, if it feels dry, add another ounce and continue until you see the tacky dough we're looking for.

Divide the water weight by the flour weight and multiply by 100. Lets say 8-ounces of water resulted in the sticky dough we were looking for, 8 divided by 10 X 100 = 80%. Subtract 5% from this and you get 75% which is the correct absorption for your specific flour at hand.

Into your mixing bowl weigh out the amount of flour you want to use and then add 75% absorption to the flour, stir together at low speed to thoroughly wet the flour, cover and set aside to hydrate for 60-minutes, then add the remainder of your ingredient for your dough and mix just until the dough begins to take on a smooth appearance. Take the dough immediately to the bench for scaling and balling, cold ferment for 24 to 36-hours, remove from the cooler, allow to warm to 50F and open into pizza skins as you would any other dough. That's the only way you can make a decent whole-wheat pizza, or any other type of product from whole wheat flour. If you just add water and mix in the usual manner the dough will be under absorbed with poor handling properties and even poorer eating characteristics after baking. Don't worry if the whole-wheat dough feels a little tacky, this is normal for a whole-wheat dough, we go so far as to tell our students that if the dough isn't a little tacky the dough absorption is probably a little low and finished product quality will suffer.

General Pizza Making / Re: Any good whole wheat pizza dough recipes?

DDG;

The most important elements in making a great thin crust are probably going to be flour, water and fermentation. Normally, a strong bread flour with 12 to 13% protein content will work just fine, when it comes to water, sufficient dough absorption to give a soft, extensible and pliable dough are key elements, and then there is fermentation which is responsible for the development of the gluten in the flour, development of extensibility, as well as flavor and aroma in the finished crust. The water and fermentation combine to provide the open cell structure in the finished crust that promotes crispiness and tender eating properties.

When say a "steel" are you referring to baking on a steel deck surface as opposed to baking on a baking platform (pan)? If that is the case, a deck oven with a steel hearth is not as good as a stone hearth as the stone hearth will hold much more latent heat and provide a better overall bake. Use of a pan provides just that much more material that needs to be heated before the pizza can begin to bake. Baking platforms come into their own when using air impingement ovens (wire mesh belt). Some people like to mitigate the mess of dusting flour in the oven by baking on a screen/disk/pan for a portion of the bake and then remove the pizza to finish baking the last couple of minutes on the deck. This is referred to as "decking" the pizza and it works quite well. If you are using instant dry yeast (IDY) you can add it directly from the package to the flour in the mixing bowl, no need to hydrate/activate it, but if you are using active dry yeast (ADY) for best yeast performance you should pre-hydrate it in a small portion of warm (100F) water with just a pinch of sugar, no salt. Allow the yeast to hydrate for about 10-minutes or until it begins to bubble then stir well and add it to the mixer. It can be added to the dough water, or added right on top of the flour, either way works well. Cake flour is a lower protein type of flour that is also made from soft white wheat

varieties rather than from hard red or white wheat varieties, this means cake flour will not be as strong of produce as much gluten as a typical bread flour. There is also a high ratio cake flour that in addition to what has already been said about cake flour has been chlorinated to further weaken the gluten, brighten the color of the flour, and modify the gelatinization properties of the starch in the flour, additionally, the pH of the flour is also adjusted to approximately 5.2 to 5.4. This is all done to a high ratio cake flour so it can be used to produce high ratio (cakes with more sugar than flour) cakes like you would buy from your local supermarket or bakery. Now you know why those cakes are so tender, light, and sweet tasting. All purpose flour is just as its name implies, it is made for all purpose applications, it has a lower protein content than bread type flours but higher than cake type flours. All purpose type flours are also more brand specific than cake and bread type flours, for example bread can cake type flours seem to fall in a narrow specification range regardless of the manufacturer, but with all purpose flours I have seen them as low as 9% protein from one manufacturer to as high as 11%+ from another, this is why I tend to shy away from the all purpose flours unless I'm making cookies, biscuits, pastry or low ratio cakes (formulas where the sugar is equal to or less than the flour weight, think pound cake).

Dough Clinic / Re: In search of the perfect thin crust pizza that is both crisp and chewy

Mitch;

The bags work so well because when you invert the dough piece out of the bag you are inverting (turning the bag inside out) so gravity pulls the dough down as the bag is being pulled away from the dough. 63F for 2-days is an awful lot of fermentation and might very well be over fermenting the dough leading to break down of the gluten structure, when this happens the dough becomes quite sticky and difficult to handle or shape. In the early stages of break down the dough becomes what is called "bucky" in this case the dough has excessive memory/snap back and can be a real problem to open into a pizza skin, as the break down continues the dough becomes increasingly sticky but opens very well, so well that many people will complain that the dough tears while opening it into a pizza skin. Doughs that are fermented at high temperatures need to have very low yeast levels to help prevent over fermenting the dough, but the finished dough temperature can then be critical to the overall fermentation of the dough, just a few degrees too warm and you get excessive fermentation and if your dough is a little colder than normal the dough doesn't get sufficient fermentation. Cold fermentation is a great buffer to variances in finished dough temperature and as such it results in better dough consistency, performance and finished crust quality over time. One of the problems that I commonly see when very low yeast levels are used is where the center of the pizza doesn't rise well during baking, making for a dense center section that lacks the desired crispiness and is usually accompanied by undesired toughness due to the poor bake quality of the center section. The reason for this is because the heat from the deck is transferred right through the dough/crust to the sauce/toppings where it is dissipated as steam. This results in the bottom never getting as hot as necessary to achieve the best bake quality.

General Pizza Making / Re: Getting Dough Ball Out Of Container - Comparison of Release Agents

Mitch;

We have done a lot of experimenting over the years with different types of release agents. We found that you also have to take characteristics of the dough into account too. For example, a low absorption dough will release quite nicely using

nothing but flour, but the same flour with a high absorption dough is disaster. The amount of mixing can also have an impact upon the performance of the release agent being used, for example, a very under mixed dough will not release as well with flour as a more developed dough. Things that don't hydrate well (stay dry) like rice flour, corn flour, bran, etc. are all pretty decent release materials but they do show up on the surface of the finished crust unless you orient the dough ball so the bottom of the dough ball containing the release agent becomes the bottom of the crust. Plain old salad oil works as you indicated, but with time it is absorbed into the dough thus negating the release properties. Lecithin is added to the oil in commercial pan release oils to improve the cling of the oil to the vertical sides of the pan, without the lecithin the oil will just pool at the bottom of the pan. For me, when making pizza at home, or even in a small shop, I like to use bread type bags for storing the dough. Just lightly oil the dough ball, and drop it into bread type bag, twist the open end to form a pony tail and tuck the pony tail under the dough ball as you place it onto a sheet pan that will be stored in the cooler. This eliminates the need to cross stack and down stack the plastic dough boxes. To use the dough, just remove from the cooler, allow it to warm at room temperature for about 90-minutes, or until the dough reaches 50F, then just invert the bag and the dough ball plops out. I like to "plop" it out into a bowl of dusting flour that I will use to help open the dough up into a pizza skin with.

General Pizza Making / Re: Getting Dough Ball Out Of Container - Comparison of Release Agents

Be sure to have an Imo's Pizza, they are to St. Louis as Ray's is to New York.
Pizzeria/Restaurant Recommendations / Re: Pizza in St. Louis?

Pizzeoli:

You should also be paying close attention to the finished (mixed) dough temperature. To keep track of the dough inventory for FIFO rotation, many operators use different colored dough boxes, or you can just use a grease pencil to mark the date on the end/side of each box. If you will e-mail me at <thedoughdoctor@hotmail.com> I will be glad to send you a copy of a dough management procedure that works very well either as is or with some modifications in many retail store operations. In your case consistency is the name of the game and this dough management procedure is designed to provide you with the greatest level of dough consistency.

Also, be aware that the American Institute of Baking is once again offering its annual pizza seminar during the week of October 27th. To get more information on this course please go to the AIB web site at <www.aibonline.org> This year the direction of the course is "back to basics". A complete agenda is shown on their web site. This is a great course for any operator, but especially newer operators who want to learn more about pizza production and formulation.

Shop Talk / Re: For those who run a pizza business. How do you manage your inventory of dough? +

I sure have. You have to buy the tomato sauce from Kroger, but when I make pizzas at home I always use nothing but slices of fresh, ripe tomato right from my garden, its a real treat during the summer and early fall months when I can go out and pick my sauce right from the vine and have it on the pizza skin in less than 5-minutes. My surplus tomatoes are either dried or scalded and peeled then processed through the food processor and frozen (seeds and all, and if you leave a little skin on the tomatoes all the better, that's where the flavor is at). When I make my pizzas this way the only change I make to my dough skin is to brush it VERY LIGHTLY

with olive oil, then add my garden fresh basil and maybe a few oregano leaves, and chopped fresh garlic, then cover with the tomato slices (about 3/16-inch thick) then proceed with dressing the pizza in your normal manner. When using light amounts of cheese I find it beneficial to incorporate just a little Parmesan or Romano cheese for added depth and intensity of cheese flavor. You can also make a starter and keep it fed in the fridge so you don't even need to buy yeast if you don't want to. One other thing, did you know that you can grow basil as a house plant during the winter months so you can have fresh basil all year around? We put out surplus basil in the food processor with a little olive oil and mix it into a puree which we then place into plastic tubs and freeze, during the winter months we just scoop out some of the basil puree and thaw it for use as we would fresh basil, or you can blend it with some Parmesan cheese and either pine nuts or walnuts to make a pesto for use on pasta. It's amazing how well you can eat from your own garden, and it really doesn't need to be a very large one either, we have turned to growing everything in recycled containers lined up along one side of our drive way (tomatoes, peppers, egg plant, basil, and onions makes for an attractive drive way edging, the oregano and garlic is planted in a raised bed behind the house. We almost lost the oregano due to drought and cold weather last year, but it has recovered nicely this year). Norma also does a lot of home gardening and might be able to add something too.

Tom Lehmann/ The Dough Doctor

General Pizza Making / Re: Inexpensive, but delicious pizza

Marty:

Both methods will provide essentially full gluten development, the main difference is that with mechanical gluten development you end up with a very tough and elastic dough at full development, while with biochemical gluten development you end up with a very soft, relaxed and extensible gluten structure. We demonstrate this all the time to the students attending our annual pizza seminar by taking a 16-ounce dough ball that has been given biochemical gluten development, and with 3 to 4-people forming a circle we open the dough ball up into a skin that is roughly 30-inches in diameter, not sticky, and is clear enough to see details in your skin through. This is all but impossible to do with a mechanically developed dough as it tends to be too sticky to and tough to handle.

Dough Clinic / Re: Kneading All Trumps Flour

CZ;

Under kneading is definitely the best way to go, especially with All Trumps flour (about 14% protein content). Even when we use a large commercial mixer, under mixing is still the preferred way to go. This allows for what is commonly referred to as biochemical gluten development. By this method all you need to do is to mix/knead the dough enough to make a smooth dough, then allow the dough to ferment which will allow time for biochemical gluten development to take place. With biochemical gluten development you develop flavor through fermentation while developing the gluten but rather than ending up with a very tough, elastic dough as you would through mechanical gluten development, you get a very relaxed, extensible dough with a beautifully developed gluten structure, and with very little work on your part I might add.

Dough Clinic / Re: Kneading All Trumps Flour

Aspendos:

Your yeast level calculates out to 0.525% which I think is a bit on the high side. I normally use 0.25 to 0.4% compressed yeast when baking at home for use after two or more days in the cooler. You say that the dough is wet on the bottom, what

dough management technique are you using (how do you handle the dough from the mixer to the fridge?) Putting the dough into a tightly sealed container can result in a wet, sticky dough. My own preference is to remove the dough from the mixer, scale it into desired weight pieces, form into balls, lightly oil the dough balls and place into individual plastic bags, like bread bags. Twist the open end of the bag to close and tuck the pony tail under the dough ball as you place it into the fridge. When you are ready to use the dough ball, remove from the fridge and allow to temper AT room temperature for about 2-hours, then turn the dough ball out of the bag into a bowl of dusting flour and open into a pizza skin in your normal manner, immediately dress and bake.

Dough Ingredients / Re: fresh yeast

Keep in mind that Mohal is using SAY (instant dry yeast) which is concentrated about 3-times over that of compressed yeast, so on a compressed yeast level he is at about 4.5 to 5% compressed yeast, much too high for the type of fermentation he is giving the dough. There is a possibility that the dough is so over fermented that it is becoming slightly acid which inhibits crust color formation (just like it does in sourdough crust production) making it even more important to have the high temperature. With a lower yeast level (about 0.25% IDY) he may find that he can develop at least some crust color and an overall better bake.

Neapolitan Style / Re: The crust is always tough, no chars - I think pizza stone never works

That might be a way to do it. It's hard to tell anything about dough formulation unless ingredients are given in weight measures or in bakers percent, so for now, I think I might just try increasing the yeast a bit to see if that does the trick for you.

Dough Clinic / Re: Softer than usual crust...why?

JPB;

The more a dough rises, be it due to higher adsorption or more yeast the poorer the heat transfer properties and the greater the potential for a crispy/crispier finished crust. You can see this rather dramatically if you open the dough up into a pizza skin using a rolling pin/pie pin and then immediately dress and bake the pizza as opposed to another dough ball that is opened by hand and finished in the same manner.

Dough Clinic / Re: Softer than usual crust...why?

SLC;

Do you have any specific reason for using "hot" water when making your dough? Dough that is to be cold fermented is usually better when made with water at about 75 to 80F as this will yield a finished dough temperature between 80 and 90F. This is important as yeast performance becomes difficult to control once the dough temperature rises above 90F. While this may not result in a bad product, it can result in inconsistent results after the cold fermentation period, for example, at times the dough may seem to be softer than at other times (this is a result of excessive fermentation resulting from the high dough temperature), or the crust might have an inconsistent flavor due to the possible variations in fermentation, and possibly one of the biggest problems is in getting the crust to color up as it should. When the dough receives excessive fermentation it also contains more acid, which can impart a sour taste, but more commonly the acid build up in the dough inhibits the crust from developing color during baking. This is why sourdough products are always have such a light crust color. Lastly, high dough temperatures can promote the growth of other bacteria/yeasts/molds already present which may adversely

impact the flavor of the finished crust.

If you opt to reduce the finished dough temperature you might experiment with adding an additional day of cold fermentation to retain the strong fermentation flavor you are looking for. Also, keep in mind that different acids and amounts are formed during cold fermentation as opposed to warm fermentation. At the elevated water temperature you are using there is sure to be a significant amount of warm fermentation taking place before the dough is sufficiently cooled for cold fermentation to take place, for this reason there might be a slight flavor shift with the lower dough temperature and cold fermentation, typically, the shift is toward a less acid/sharp flavor, which many describe as a more mellow, flavorful fermentation flavor.

Dough Clinic / Re: Cold ferment and water temp

MTT;

Were the recipes/formulas shown in percentages or in weights? Hopefully they were not shown in volumetric measures. If shown in percentages use your calculator and enter the weight of flour that you will want to use. In your case I suggest working in grams (28.4-grams to the ounce/454-grams to the pound). I would suggest using 1000-grams of flour. This will give you enough dough to make any kind of pizza you want (thin, thick or deep-dish) and any dough left over can be used to make a few bread sticks to go with those pizzas. Enter 1000 in the calculator, then press "X" followed by the percent shown for the first ingredient, then press the "%" key and read the weight of that ingredient, in grams, in the display window. Repeat this for each ingredient and you're ready to begin scaling ingredients. As for weighing ingredients in small amounts such as grams or fractions of an ounce there are a number of very good and reasonably priced (about \$30.00) scale available on the internet. My scale is a KD-8000 and we use it all the time for weighing ingredients not just for making pizza, but for making preserves, jerky, and anything else where I need to weight something.

If the recipe/formula is only shown in weight measures, you will first need to change it into percentages. Here is how you do that, it's really quite easy; First enter the weight of the first ingredient then divide it by the weight of the flour and multiply by 100 and read the percent of that ingredient in the display window. Do this for each ingredient. Flour is always shown as 100%. Now you can follow the above procedure to make a dough based on any flour weight you wish to use.

Dough Clinic / Re: Recipe using 00 flour

Brad;

If you change over to a bulk ferment process you will get a different finished flavor profile since bulk fermenting doesn't give you the same temperature control/control over the fermentation process that fermenting the dough in individual balls does. There are lots of ways that you can make dough by the bulk fermentation process, but matching your present flavor profile, while potentially, would take a lot of experimentation to achieve. The variables would include, finished dough temperature (you will need to be very precise on this), the temperature of your refrigerator (remember, opening and closing the fridge will allow for uncontrolled temperature variations over the storage/fermentation period, yeast level, size of the dough, shape of the fermentation container, material that the fermentation is made from as this will impact heat conductivity hence rate of fermentation. If this is something that you will be doing on a fairly regular basis, You might look into purchasing a low cost refrigerator (no freezer compartment) and storing your dough ball in there as you are presently doing, if nothing else, this will buy you the time needed to conduct the experimentation needed to do the bulk

ferment process while retaining a similar finished flavor.

Dough Clinic / Re: Looking for advice in moving to bulk fermenting

Nate;

That bottom crust looks pretty typical for a deck baked pizza. Leavening gas from the yeast forces small portions of the crust up off of the deck to create the white mottling that you see. To achieve a uniformly brown bottom crust color try baking your pizzas on a screen or perforated disk, but be aware that you Will not get the same quality of bake even though the crust is uniformly browned.

New York Style / Re: Is air under the crust causing my bottom to cook uneven?

CK;

Sifted flour is exactly the same as unsifted flour with the exception of the density of the flour. A cup (or any volumetric portion) of sifted flour will weigh less than the same volume/portion of unsifted flour due the the difference in density resulting from sifting. In some applications, especially in making cakes, sifted flour is called for to prevent development of lumps of flour in the batter, in angel food cakes it is almost mandatory due to the fact that the flour is just folded into the whipped egg whites so there is no mixing to smooth out any flour clumps. In making bread and pizza doughs it doesn't make any difference so long as the flour is weighed, but do keep in mind if you are using a "recipe" that calls for X number of cups of sifted flour you should use sifted flour or the weight of flour that you are adding will be incorrect, same for unsifted.

Dough Clinic / Re: How do certain dough ingredients affect the dough and crust?

Nick;

A couple of things jumped out at me. 1) You mention that you had to add a little extra water to get the dough to bind. This might indicate that your dough absorption is still too low for optimum results. Additional water will give you a softer dough that is easier to p\open into pizza skins, but more importantly, it will allow the dough to spring during baking, creating a lighter textured crust with open/large holes which will help the dough to brown during baking. 2) your dough doesn't seem to be getting very much fermentation. To keep things simple you might just try allowing the dough to ferment for an hour or so after mixing, then portioning it for each crust, form each dough portion into a ball, lightly oil the dough ball and drop into individual plastic bags, no need to seal tight, just twist the open end to close and tuck under the dough ball and place into the fridge to cold ferment for a minimum of 24-hours, but you might find that 48 or more hours is better. To make your pizzas from the refrigerated dough balls, remove from the fridge and allow to temper at room temperature for about 2-hours, then open into pizza skins, dress and bake as you normally do. I just made several pizzas last week while on vacation following this procedure and the pizzas all came out great, good color, crispy, and great flavor.

Newbie Topics / Re: How to cook the perfect pizza in an oven at home

CZ;

When you first take the dough out of the fridge/cooler it is at approximately 36 to 40F. At that temperature the dough is somewhat difficult to open into a pizza skin without a lot of undue effort. When we allow the dough to tamper AT room temperature for 2 to 3-hours, or until it reaches an internal temperature of 50F, the dough is much easier to open into a pizza skin, especially if you are opening the

dough by hand. Additionally, since the dough is warmer it will tend to bake faster than it would at a lower temperature. In your case this should not be a problem as you allow the dough to rest for an hour at room temperature after opening it into a pizza skin. I don't know what type of crust you are trying to make, but if you are making a thicker type of crust as evidenced by the fact that you are resting/proofing the dough after forming, you will still get better results if you allow the dough balls to warm to 50F prior to opening.

Dough Clinic / Re: Cold vs. Room Temp Dough

If the dough has a finished temperature in the 80F range, and if you ball it and put it into the fridge for at least 24-hours you would see a lot more gluten development due to biochemical gluten development. Some level of mechanical gluten development has a benefit in at the pizzeria level as it helps the dough balls to retain their shape in the large dough boxes that are commonly used, it also allows the dough to be processed into dough balls faster and easier, all of which really are not needed in home pizza production, additionally, it is also much more difficult to mix a dough to the level of gluten development using the mixers we normally have available to us at home, this includes most mixers up to about 12-quart bowl capacity. We are getting ready to gear up for our annual pizza seminar at AIB and one of the things that we always show our students is how we cannot stretch the dough to form a window after mixing, but on the following day after the dough has been balled and cold fermented for about 24-hours we can get 3 to 4 people together and stretch those same dough balls out to nearly 36-inches in diameter. The flour that we use in making all of our dough is just what is termed as a strong bread flour having 12.2 to 12.6% protein content.

Dough Clinic / Re: I took a picture of my dough today

Additional information on how you are managing the dough would be helpful, but from what is provided, the adsorption at 65% is a bit higher than we normally use with "00" flour. You might try reducing the absorption to 55 to 58% (275 to 290-grams/ml).

Dough Clinic / Re: Dough Balll not holding its shape

Ditto with Ryan.

You might want to take that B.S. bag of flour and subdivide it into smaller bags that you can store in the fridge or better yet in a freezer. If you leave it sitting out too long at room temperature you might find it necessary to sift the larvae and/or flour beetles out of it. Additionally, as the flour ages in a warm location it continues to oxidize, making the flour stronger, like adding bromate to it, or more bromate if the flour is already bromated. This can result in unexpected or increased dough memory/snapback making forming the dough into a pizza skin more difficult. Refrigerating or freezing the flour can effectively prevent this from happening for up to two years.

Dough Clinic / Re: dough kneading

Grande is also another very good cheese producer to take a look at. This is the brand that a lot of the New York pizzerias go with.

My favorite is their whole milk Mozzarella, especially when it is their Fleur de Latte 4-ounce cheese balls in brine pack. I like to rinse and pat the cheese balls dry and peel it like an orange placing the pieces randomly over the surface of the pizza.

Newbie Topics / Re: Cheese Choices for First Blackstone cook!

V;

The Golden Fleece of the pizza industry is how to keep a pizza from getting soft after baking, great just out of the oven and for a few minutes, but then it begins to get soft but only soggy if it is boxed, bagged and allowed to sweat for 20 to 30-minutes while a pizza delivery driver looks for your home address. If soggy is the problem, it might be due to any of the following:

- 1) Insufficient baking of the pizza (need to bake longer).
- 2) Overly thin or watery sauce.
- 3) Saucing the crust and allowing it to sit for several minutes before dressing and baking (sauce, dress and bake the pizza as quickly as possible)
- 4) Sauce or moisture migration into the dough/crust during baking (apply a light coating of oil to the surface of the pizza skin before applying the sauce)
- 5) Excessive application of vegetable toppings (use a lesser amount of toppings)
- 6) Use of a bright/shiny colored pan (pizzas are best baked using a seasoned or dark colored pan)
- 7) Failure to allow the dough to rise/proof in the pan prior to dressing and baking a thick crust/deep-dish pizza.
- 8) Too much sugar, milk or eggs, if used, in the dough formula which results in the crust browning to quickly and never getting sufficient bake to remain firm or crispy (reduce or eliminate sugar, milk or eggs from the dough formula)
- 9) Sometimes, especially with thin crust pizzas, if the dough is rolled or stretched too thin there is insufficient baked crust under the pizza to remain crispy for more than a minute or so after baking (increase dough weight for the size of pizza you're making)

This might give you something to work with to address the problem.

Newbie Topics / Re: Soggy Crust

Shortening is used for Chicago style deep-dish pizzas while oil is used for Pizza Hut style pizzas. The biggest benefit to using a solid fat in the pan such as margarine, butter, shortening (Crisco/Butter Flavored Crisco, my personal favorite too) is that the dough really clings to the stuff making it a snap to pull the dough up the sides of the pan without the need to continually chase the dough pulling it back up after it slides back down into the bottom of the pan. Texturally, oil in the pan gives the finished crust an oily/fried appearance and feel while the solid fats impart a dry appearance to the crust , much like what we normally see on the sides and bottom of a loaf of store bought white pan bread. To apply the solid fat to the pan you can either brush or wipe it in using a paper towel or you can melt it and brush it in for a more uniform application. In a commercial setting we almost always melt or at least soften the fat and then brush it into the pans, but when I make deep-dish pizzas at home I always apply it right from the can using a piece of paper towel to wipe it around in the pan, makes clean up a little easier, just toss the paper towel in the trash, no need to wash the fat out of a pastry brush.

By the way, that is one VERY GOOD looking pizza!

Chicago Style / Re: Tonight's Lou. Butter flavored crisco in the pan is night and day vs oil

Amy;

It's already here!

It's sold under the name "Throw Dough".

It is used as a teaching tool to help novices learn how to through/spin the dough without going through hundreds of dough balls, it is also used as a practice tool by those who practice pizza acrobatics.

Kinda chewy though. ;D

[**Pizza News / Re: Next up: Silicone Dough**](#)

Neibs;

I am a fond lover of roasted red and green peppers, but I typically use them as an added topping ingredient, that is I normally use my toppings unroasted if they will get properly cooked during the baking of the pizza, and I add the roasted vegetables only in limited amounts as another topping ingredient rather than the main topping ingredient. My reason for doing this is because I like to have some texture in the toppings rather than the toppings being too soft and mushy. If you don't mind the texture, there is nothing wrong with adding the roasted vegetable toppings at the beginning of the bake. When I have done this though, I will try to use a deeper pan which holds a protective cooling layer of moist air over the top of the pizza thus protecting the toppings from scorching. You could also watch the pizzas during baking and when you think the toppings have had enough heat just place a small piece of aluminum foil over the top of the pizza. No need to crimp or anything, just lay it over the top and it will do the rest. If your bake time is limited by the color of the top of the pizza this will also help you to extend the baking time to achieve a better crust bake.

[**Sicilian Style / Re: Made my first Sicilian type Pizza. Middle was a little doughy. How do I fix that**](#)

Dulce;

You mention "mix" and also knead, if you are using a mixer what kind are you using. Also it would help in you could provide more information such as the type of flour, dough formulation, and dough management process that you are presently using.

[**Dough Clinic / Re: dough kneading**](#)

Neibs;

Did you put any oil or shortening in the pan? This can sometimes help the crust to bake better as it improves the heat transfer properties between the dough and the pan. Was your pan dark colored or was it a bright aluminum color? Bright (shiny) pans reflect heat away from the dough which lessens the quality of bake within any given period of time. What was the baking position in the oven?

When I bake deep-dish pizzas at home, one of my favorites, I allow the dough to rise for about 75-minutes in the pan, I then dress the dough with sauce, cheese and toppings and bake at 450F beginning on a lower rack position in the oven as this allows the dough to bake without contributing excessively to the color of the cheese or scorching the toppings. After about 8 to 10-minutes, I move the pizza to a higher rack position to finish baking and developing the level of cheese browning that I'm looking for. Note: It really helps a lot if you have a pan that is 1.5 to 2-inches deep. The deeper pan traps the cool, moisture laden air over the top of the pizza protecting it from excessive bake until you place it in a higher rack position.

[**Sicilian Style / Re: Made my first Sicilian type Pizza. Middle was a little doughy. How do I fix that**](#)

Norma;

Another thing responsible for the latest resurgence in lard is our growing hispanic population. This is also responsible for the increase in popularity of maseca. This is also reflected by the bilingual labeling. There was once a time, back in the 50's when margarine couldn't be colored (consumers might be duped into thinking it was butter) so it was a common practice to put a little packet of coloring with the margarine allowing it to be colored by the consumer if so desired. Some of the key

factors that lead to shifts in food and ingredients are population diversity, demographics, and current trends (think low carb, fat free, gluten free, low sodium, organic, natural) and add to that mix the scare monger lady who now finds everything wrong with pizza. Watching her on Fox News yesterday I couldn't help but laugh when she criticized the big box chains for the meats they were using and suggested as an alternative that people who want meat on their pizza should instead visit local pizzerias.....Wait!!! They use the same type of meat products and from the same suppliers too! One thing she was very critical of was the use of the antioxidants BHA/BHT. I guess she really likes the flavor of rancid fat. Ditto for nitrates where they help to keep the pepperoni a more attractive red color but gray colored pepperoni tastes pretty good too. I'm not a big fan of highly processed foods, but some things just don't fit into my life style without being processed in some way. Over the weekend I was out in our garden harvesting vegetables and when I came in with tomatoes, onions, peppers, radishes, apricots and some basil for our dinner my wife asked if there weren't any snow peas, I had to fess up, I ate them all as I was picking them, natural and organic they tasted great, my wife said didn't you wash them first? Of course not, that's part of the organic experience.

Dough Clinic / Re: A few questions

There are two nifty gadgets that are commonly used to give equally sized slices from each pizza, every time. This has gone from just important to critical for some stores as they are providing sliced pizza to local schools where each slice MUST be the same as the others. The first thing is called "The Equalizer" from Lloyd Pans. This is something like a large round rocker knife that is pushed down into the pizza to cut it into equally sized portions. The other one is a composite board with different size circles on it and lines that intersect in the middle of the board. You place the pizza in the correct size circle and just cut with your pizza wheel using the correct intersecting lines as a guide to get the number of slices needed from the pizza. I've used both and they work as advertised.

Stones/tiles/steel, Pans & Accessories / Re: Looking for an 18" pizza slice/topping outline

Craig;

Someplace out there there is an article on big box store slogans and how they translated when they went to different countries.

Chevrolet (Latin America): Nova = doesn't go "doesn't work"

KFC: (China) Finger Lickin' Good = So Good You Will Want To Eat Your Fingers and then of course the Taco Bell episode.

Those are just a few of them that I remember. Like you said, it's amazing how little research these big companies put into their advertising when they develop a presence in a foreign country.

Back in the 1970's There was a lot of criticism of Japan for not buying U.S. made cars while we were gobbling their cars up like a kid at a candy store. When pressured for an answer as to why? They responded that U.S. cars were so big that they had a hard time navigating the narrow streets and parking was all but impossible. Duh! Houston, I think we have the answer.

Off-Topic Foods / Re: Corn tortilla recipe - please share

Norma;

Find out if it is deodorized or steam distilled. That will give you an idea of the flavor impact to expect from it. More if non-deodorized, less if deodorized or steam distilled.

Dough Clinic / Re: A few questions

c0mp;

Not really, but My preference is like yours for the oil only method. The only problem I have with seasoned pans, aside from the seasoning process, is that the pans/screens cannot be washed without fear of damaging the seasoned coating, it's a real bummer when that happens. There is also a problem with seasoned pans if you don't use them regularly as the seasoning has a tendency to turn rancid over a short time, and here's one for anyone interested in healthy eating, carbon has been proclaimed to be a carcinogen by some states, I haven't researched it lately, but the two states on that band wagon were Massachusetts and California. At one time both banned the use of seasoned pans/screens, this is what lead to the rapid growth and popularity of the anodized pans and most recently disks. The original finish on many pans was Teflon but it proved to be much less than ideal and was soon replaced by an anodized finish which worked OK, but now we have some really great proprietary anodized finishes that are super tough (hardness rating of 9, a diamond is 10) that defy being damaged unless the base metal (aluminum) is damaged. These finishes are also nonstick so all they need is a washing and a light seasoning only once when first used. After that, you can burn cheese or tomato sauce on them and just wipe it off with a paper towel, if you're so inclined you can also toss them into a sink of hot, soapy water to soak (why I don't know) and then rinse and dry without any damage to the pan/disk or finish. We have a good number of these that we have been testing for several years now and so far we have not have a single problem with any of the pans or disks.

Newbie Topics / Re: Why use a pizza screen?

Jeff;

Your dough looks pretty normal to me too. As for those dough balls that you see being used by pizzerias, they have been mixed to a much greater level of gluten development than is possible to accomplish at home with most mixers, or by hand mixing/kneading, plus the absorption used to make the dough is somewhat lower, generally around 56 to 58%. This allows the dough balls to be placed into those dough boxes with the maximum dough ball count without the dough balls all growing together by the time they are ready to use. It is also at least partially responsible for the fact that almost all box store and to a great extent, pizzeria crusts, regardless of who made the pizza, have a distressingly similar look. This doesn't make their pizzas right or wrong or their crusts good or bad, when you're trying to run a million dollar business you can't always do what you might like to do so you have to do the best with what you have to work with.

Dough Clinic / Re: "Dough ball" loses shape during fermentation?

The trans-fat thing is still with us even after the latest research reports showing that trans may not be as bad for us as once thought, but there is long term evidence to show that lard does contribute to cholesterol and rather significantly. Part of the latest research showed that when people went away from fats they indeed did turn to sugar for which we also have in our DNA as sugar loving gene, for what reason I do not know, but we do crave sweetness. A study was done several years ago with new born infants and it showed that babies, with no prior exposure to sugar exhibited a preference and consumed more milk that was laced with 0.5% sugar. So right now the question to be asked is which is better of two evils, fat or sugar? Do you want to play the cardio game or the diabetes game? Like I said, you can enjoy both if you exercise a little control and enjoy both (fat and sugar) in moderation, ditto for salt. The problem with salt is that we are exposed to it from so many different sources that we may not even know how much

sodium we are consuming. I made a decision over 25-years ago to never add salt or sodium (monosodium glutamate) to any of my foods again. I've been true to my conviction and I still enjoy good health after 70-years. I also eat fried foods and trust me, there are fewer joys greater than eating a fresh, hot donut and icing makes it all the better, BUT again in moderation. I might treat myself to a donut once or twice a month and at that rate I don't think the acrylamide will lead me to an early grave. Ain't food great?

Dough Clinic / Re: A few questions

A good way to source some unmalted flour is to check your local grocery store to see if they carry an organic bread flour. Most of these are coming in at around 12.5% protein content which would make it suitable for most types of pizza production.

New Forum Members / Re: Pizza Flour

A couple of things to keep in mind about screens, they must be seasoned prior to their first use to prevent the dough from sticking to the screen, and once seasoned, it is not adviseable to soak the screens for cleaning because if you do the seasoning will begin to peel off like a bad sunburn and we all know where it will end up. If you are getting a lot of "gunk" in the screen openings you probably shouldn't be using screens, but instead use Hex Disks from Lloyd Pans <www.lloydspans.com> they're pricey, but then so is everything else as compared to the cost of screens, but you will never need to replace it, and clean up is a snap as all you need to do is to wipe them with a clean towel. These disks are anodized with a proprietary coating that is much more durable and it will last forever, unlike other nonstick coatings. You can also wash these disks without any problem. If you get a little debris in your screens the recommended way to get it out is to put the screen in your oven for 30-minutes, or so and then tap it on a hard surface when you remove it from the oven. If you still have too much crud in the screen openings just replace the screen as this is a lot easier than the effort needed to clean it.

Newbie Topics / Re: Why use a pizza screen?

Norma;

Since your lard was added in a semi-plastic form as opposed to being melted first, you were correct in adding it right up front with the other dry ingredients. Anytime you improve the lubricity of the dough it will feel softer, but when plastic fats (lard, shortening, etc.) are used in their crystalline form, the resulting softness will not be as great as it would if you had added an equal amount of oil to the dough.

Most commercially made pizzas are made on a crust from a dough that has received very little fermentation so in many cases the flavor of the finished crust is pretty bland. I have found ways aside from fermentation to address that problem, but still, for most the approach is to add high levels of fat to the dough formula. In addition to improving the automated processing characteristics of the dough the increased fat level also appeals to the consumer's "fat gene". This is a proverbial gene that we all have as a carryover from the time when man had to survive by eating a much more meager diet than he does today, and those who ate calorie dense fat survived while those who didn't were never able to pass on their genes. This is one reason why the fat free movement never gained any real momentum. As a side story to that, the most popular fat free product of its time was the fat free pound cake made by a huge, east coast baking company. Why was the product so well received you ask? Well, first of all you have to consider the definition of a fat, any fat is defined as a triglyceride. Those very popular fat free cakes were found to be made using very high levels of monoglycerides and diglycerides, which are not

fats by the true definition. They are used as emulsifiers and anti-staling agents, but they have a waxy feel to them, melt like a fat, and as stearates, they are not as healthy for you as a fat is, so my response to this was that if you took the sum of a monoglyceride and a diglyceride you got "3" or a triglyceride. If it has feathers like a duck, and feet like a duck, and a bill like a duck and quacks like a duck, you would probably be pretty safe in calling it a "duck", and that is what the Feds did when they found out how the cakes were being formulated, Oops!

We saw some of the same thing happen with the trans-free (trans fat free) craze of a few years ago. Formulators began using trans-free lard to replace trans-fat laden shortenings, yup, it worked, BUT there was one "smidgen" (where have I heard that word used before?) of a problem in doing this, from a healthful standpoint, lard is actually worse for you than the hydrogenated fats. As you can see there is a lot science and chemistry behind fats and oils, which is why we have fats and oils chemists, so what might look like a pretty simple ingredient, is actually quite complex. This is why it took us so long to study the ingredients used in pizza production and figure out just what they did and how they would interact with other ingredients in different processing scenarios.

By the way, the basil pesto base turned out great last night and as is usual when we process our pesto base the whole house had a wonderful aroma. I sure wish someone would bottle that smell!

Dough Clinic / Re: A few questions

Norma;

Our basil is ready for picking tonight. Susan and I will make it into a pesto base as we always do (just basil and olive oil) we add the pine nuts and Parmesan later, when we want to make the pesto. We have had problems with long term frozen storage and rancidity when we made it as a complete pesto, but as we do it we can keep the pesto base, as we call it, in the freezer for well over a year without any issues. We lost most of our oregano over the winter, but there are a few sprigs of it still growing so I'm nurturing it back into a plant that we can harvest from once again.

Dough Clinic / Re: A few questions

Gab;

When Taco Bell first went to Mexico (go figure!) and people saw burritos on the menu they couldn't understand why people would eat baby burros akaburritos. I guess they had some splainin' to do. Ain't nothin' finer than sitting in a Mexican restaurant (in Mexico of course) eating queso frito (fried cheese) wrapped in a fresh, hot wheat flour tortilla with a squeeze of limon while sipping on a cold Modelo Negra cervesa.

Off-Topic Foods / Re: Corn tortilla recipe - please share

KD;

Do you mean the Picard ovens?

Pizza Ovens / Re: rotating oven vs stone tunnel oven

Norma;

To give your brain a little rest, how has your garden been doing this year? We are already picking and dehydrating cherry tomatoes, and using banana peppers from our garden. Bell peppers are set as are the eggplant (lots of them). All of the other tomatoes are just waiting to ripen. This is the earliest that we have EVER had a crop like this. I took a chance and with our warm spring I planted early and didn't get wiped out by a late frost. Sometimes you win a hand with Mother Nature, and

this was our year. We are really looking forward to making some great pizzas this summer with a garden to table time of an hour or less. I haven't planted low acid yellow tomatoes for a good number of years now, but I got to wondering how they would work on a pizza so I put in a couple of plants (Golden Boy) to see how they would do. They should be ripe in a couple of weeks if not sooner. Yellow sauce anyone? Has anyone ever done any experimenting with yellow tomatoes? If these work out I plan to try some yellow cherry tomatoes next year, if nothing else they will add some color to my pizzas.

Dough Clinic / Re: A few questions

Pizza-Dude;

That last folding, just prior to opening the dough is what is killing you. Try this, just turn that orange size dough ball out of the bowl onto a floured surface and begin opening it into a pizza skin. I think you will find things a lot easier going. What I might suggest is to divide the dough into desired size/weight pieces when you put the dough into the fridge, lightly oil each dough ball and place into individual plastic containers or plastic bread bags, when you are ready to use the dough just remove from the fridge, allow the dough to warm to at least 50F, then turn it out of the container into a pan with some dusting flour and begin opening the dough into pizza skins. This process works great for me.

Dough Clinic / Re: I just can't make good dough... It's been like 10 years.

JS;

Based on your dough formula you should be able to go for a minimum of 3-days in the fridge and it wouldn't surprise me if you could push that out to a week or so. A lot will depend upon your dough management procedure.

Dough Clinic / Re: sbarro

Norma;

To a point, increasing the dough absorption will always result in increased dough mobility resulting in increased oven spring. I say "to a point" because the dough must still retain sufficient strength to support the weight of the added water and expand while retaining gas. If the dough fails to do this it will exhibit collapse either before baking, during baking, or shortly after baking (resulting in translucent spots in the crust that look like oil spots but instead are only localized places of dough collapse). Regarding fat in the dough, if you can toss the fat into a bowl of flour and take it back out again in the same shape, it will exhibit lubrication and improved gas retention properties in the dough. You can also add this fat directly to the dough along with the other dry ingredients. On the other hand, if you were to melt this fat and drop it into the flour it would be a different story as the fat would be absorbed into the flour but it would soon recrystallize back into a solid (plastic like) fat. This means that the melted fat would perform better if it were added by the delayed fat addition mixing method, BUT it would exhibit functional properties in the dough the same as it would if added as a plastic fat. As for oil, it will be absorbed into the oil and it will not crystallize after addition so it should be added by the delayed oil addition method. Its function in the dough will be to lubricate the dough for ease of mobility, it will coat the gas cells for improved gas retention (there are the same properties that lard would exhibit) but it will also soften the dough in much the same way that water does, BUT it will not participate in the hydration of the flour proteins giving rise to gluten development. This can be easily seen when we add copious amounts of water to a dough and it becomes very soft, but if we allow the dough to rest the proteins will continue to hydrate resulting in an easier to handle dough (does this sound familiar?) where as the

addition of high oil levels will give a softer dough, it will not dry up as well and it will remain very soft. This approach is used pretty extensively by the large wholesale pizza manufacturers as it is common to find total fat levels in the dough (as oil) in the 16% range. In this case the high oil contributes to a very soft and easy to handle/machine dough but without the stickiness associated with water (due to the fact that they do not allow time for hydration of the flour protein). As for flavor, some fats have a characteristic flavor such as butter, margarine, non-deodorized lard, etc. which are infused into the dough, while bland tasting fats and oils entrap and hold flavors released from baking the pizza for an improved flavor profile in the finished pizza. As for water and flavor, the greater mobility of the dough with increased water provides for a better bake out of the dough (if you don't believe this is important just taste the dough before and after baking LOL), and then there is the case for crust color and char contributing to the overall flavor profile. If you have ever tasted a brown and serve roll before and after baking you will see the difference in flavor that just crust color provides, and when we add some char to the picture we add yet another dimension of flavor to the finished crust. The way char is formed in pizza crusts is through bubble formation. The bubble is a skin of dough that is separated from the main body of dough with an insulating layer of gas and water vapor inside the void. The oven heat is applied pretty evenly to the entire top and bottom of the dough during baking and much of this heat is absorbed into the dough through conduction, but where there is a bubble present, the heat cannot be absorbed into the dough so it quickly comes up to a higher temperature than the surrounding (non bubbled) dough, as soon as the dough temperature reaches about 350F it begins to brown and it continues to brown until the pizza is removed from the oven, This is how char is formed in the oven on a pizza crust, or any other oven baked product for that matter.

One other thing I might add about lard, as opposed to constructed fats, like shortening, lard has a lower melting point and slip point meaning that it will have a cleaner mouthfeel (more like that of butter) without the waxiness of many shortenings. But when it comes to flavor contribution, commercial deodorized lard cannot hold a candle to the non deodorized version. With reference to using high fat levels (above 8%) since fat of any kind can/will interfere with gluten development, it is always best to add it quite a bit later in the dough mixing stage, even later than it would be added by the delayed oil addition mixing method. In this case it is recommended to mix the dough by hand to just short of the level of gluten development you are looking for, the fat is then added and the dough mixed until the fat is thoroughly incorporated (a few minutes). This can be easily done by home bakers by mixing the dough, allowing it to ferment or hydrate for about 30-minutes, adding the fat and kneading it in or putting the dough back into a mixer with the fat to incorporate it.

Next Question?

Dough Clinic / Re: A few questions

Slam Man;

Since many home made pizza doughs have a finished temperature in the high 80's or low 90's, some times even in the low 100's I think that 48-hours at room temperature is too long for the type of flour that you are using. For starters, you might begin allowing the dough to ferment for 1-hour at room temperature before taking it to the fridge and see if that helps, if it does, allow the dough to ferment at room temperature for progressively longer periods of time, 2-hours, 3-hours, etc. before taking it to the fridge. At some point you will probably want to leave the dough ferment for an hour or so at room temperature and then experiment with the length of time you allow the dough to cold ferment in the fridge (1-day, 2-days,

3-days, etc.) as there is a difference in crust flavor with the different types of fermentation. Experiment to find what works best for you and provides the flavor and characteristics you're looking for. Remember, it is the journey, not the destination that counts, and failures can taste almost as good as successes when it comes to making pizzas.

Dough Clinic / Re: Am I Over Fermenting?

Frank;

Aside from using your bread maker, how did you manage the dough once you made it. The dough management procedure that you employ has a greater bearing on the attributes of the finished crust than the dough formula.

Without knowing what you did, you might give this a try to see if you get better results

Mix dough

Divide into desired size/weight pieces and place into individual plastic bags or bowls.

Refrigerate the dough for at least 24 to 48-hours.

Turn the fermented dough out of the bowl or bag into some dusting flour

Using your hands only, no rolling pin, open each dough ball to the desired size.

I'm guessing that you might be baking on a pan? Hopefully a dark colored pan?

Place the dough into a lightly greased (think Crisco, butter or margarine) pan

Brush surface of dough VERY LIGHTLY with olive oil

Apply sauce and desired toppings

Not knowing how you bake, I'll assume you are not using a stone or steel. Place the pizza into a preheated oven at 500F about 1/3 of the way up from the bottom for 10-minutes, then move to a higher rack position, about two spaces Down from the top position, rotate the pizza and bake for about 8-minutes or until the cheese is bubbly and is beginning to brown slightly.

You might need to make some adjustments but this should get you started in the right direction. Check other posts to get more information on baking techniques.

Dough Clinic / Re: Blah Blah Blah pizza dough and crust

GFG;

Be aware that there is a "new kid on the block" when it comes to low sodium salt substitutes. Gone are the days of that metallic taste, we now have a new product that we looked at over a year ago, that by trained sensory panel, could not distinguish it from the real thing. The best part was that it still retained the full salt flavor and had the same impact upon bread flavor. The product is called New Tech Salt, and it is now available from Walmart. If you can't find it please send an e-mail to Tom McCurry at <t.mccurry@cainfood.com> and ask him about availability in your area as well as a product specification sheet. I used to give out samples of it but I'm all out of them now. You can use the New Tech Salt just as you would any other salt and still get the sodium reduction.

Dough Clinic / Re: Sodium in dough

Type;

Since it only happens a couple of times and all of the other dough pieces are just fine, I'd tend to look at technique above anything else. If you stretch the dough with any thin spots two things can happen, (1) the thin spot represents a weak spot from where the dough will tear. (2) at the thin spot there is a greater probability that moisture from the sauce will penetrate through the dough causing it to stick to the counter top surface, this can be especially problematic if you are dressing a number of pies all at one time. Doughs that tend to be on the weak side due to

slightly high absorption or long fermentation times tend to exhibit this characteristic more than doughs that are made with a slightly lower absorption or shorter fermentation time. You could test this by reducing the dough absorption by a couple percent to see if that helps. Remember, flour is not a constant, it is possibly the most variable ingredient we work with so it is not unusual for doughs to require different levels of absorption as we go from one milling lot to another, or from one bag to another. If that doesn't help then I would suggest reducing the fermentation time by 25% and see if that helps.

Neapolitan Style / Re: Pizza Peel Failure

Gag;

Both types of tortillas are from Mexico. The wheat flour tortillas are from the northern regions of Mexico and the corn tortillas are from central and southern Mexico. It reminds me of the time I was conducting a seminar for wheat millers in Mexico close to Monterey and that night as dinner was being brought to the table pandemonium broke out among the millers. At first I didn't realize what the problem was but I soon discovered what all the fuss was about. It seems that we were being served corn tortillas rather than wheat flour tortillas. By the time the chatter had died down the corn tortillas had been sent back to the kitchen with instructions to come back with only wheat flour tortillas! A short time later we were all enjoying wheat flour tortillas.

Off-Topic Foods / Re: Corn tortilla recipe - please share

Norma;

I think there is a position open for you here at AIB. I couldn't have said it better myself! :)

Dough Clinic / Re: is this a good dough

Walter;

I won't be leaving the pizza industry in any way in the foreseeable future, and I'll still be just as active if not more so on both PMQ and Pizza Making.Com web sites, the only difference is that like many of you I will be able to communicate by e-mail while wearing my pajamas, typing with one hand and eating my breakfast or lunch with the other.

Thank you to everybody for all of your very kind words and good wishes, I'm really looking forward to this new chapter in my life and career.

Chitchat / Re: Tom Lehmann's Retirement from the AIB

Norma;

In answer to your question as referenced in Peter's post above, As you know, there are exceptions to every rule and I think your case is qualifying as one of those exceptions for a couple of reasons, (1) At your lower oven temperature you can't force enough oven spring to achieve the benefits associated with the higher dough absorption. (2) There is also a chance that with your low yeast level could be inhibiting the potential for enhanced oven spring. (3) In some cases the dough might have been exposed to too much fermentation thus weakening the dough or depleting the nutrient supply from the yeast to such a point as to lessen the ability of the yeast to generate carbon dioxide fast enough to participate in oven spring. (4) While this doesn't pertain to you we have seen that when the dough is opened by sheeting, so much of the dough has been degassed that it just cannot respond to oven spring as it should even with the increased absorption. (5) Another one that doesn't pertain to you is a condition where the dough is so over fermented that it lacks the ability to hold up under the rapid expansion during oven spring and

either collapses or loses its ability to retain the leavening gas to create the desired oven spring.

When faced with any of these situations the default is to reduce dough absorption as this firms up the dough making it less prone to collapse, and if baked sufficiently long it will form sufficient crust to provide a crispy texture. The only down side to this is when the absorption is reduced so low as to inhibit complete hydration of the flour, then the dough becomes difficult to open unless a sheeter/dough roller is used such as is the case with most cracker type crust renditions which will typically use absorption values as low as about 36/38% to as high as 45 to 48%. In these situations a VERY crispy crust can be made but they do require special handling and generally longer than normal baking times, plus a raised edge on the pizza is generally not much more than a wish, but it is crispy, actually, more cracker like than crispy.

I hope this has answered your question.

Newbie Topics / Re: pros and cons of a dough with higher hydration

Peter;

The only difference retirement will make in my life is that I will be able to "cherry pick" assignments and regarding the time that I spend on various web sites and writing articles, that will most likely increase. As for a book, I've already got it templated so now I will need to just sit down and begin writing. I'm looking forward to doing it this winter.

Norma;

I totally agree with you that pizza is a lot more complex than it first appears to be. I discovered that some 47-years ago when I set out to learn the ins and outs (technology) of making pizza, and here it is, 47-years later and I'm still putting the pieces together. Boy! Speak of an underestimation of needed effort!!! But not to sound too contrary, you're never too old to learn. I keep learning new things about pizza every day and everyone who participates both here and at the PMQ Think Tank have been instrumental in contributing to that new found knowledge, not just for me but for anyone taking the time to partake in these great resources.

Newbie Topics / Re: pros and cons of a dough with higher hydration

With reference to lard, correct, corn tortillas do not contain any added fat but flour tortillas do, typically anywhere from 8 to 20% with most commercial tortillas coming in at around 8 to 10%. As for lard, due to its lower melting point it is better than shortening which can leave a waxy feel in the mouth, but when it comes to flavor, there isn't as much difference between lard and shortening as there used to be. The reason for this is told on the packaging where it says "deodorized", yup, that's the good flavor typical of lard that has been pretty well removed through steam distillation by the processor. If you live in an area there you can get fresh lard or imported lard from Mexico you're in luck as the imported lard is still the real thing.

Off-Topic Foods / Re: Corn tortilla recipe - please share

The way to change a formula from weight measures to bakers percent is to divide the weight of each ingredient by the weight of the wheat flour and multiply by 100.
Flour: Is always equal to 100% 1.7 kg.

Water: 1.0 divided by 1.7 X 100 = 58.8% (all shown in Kg.)

Salt: 50 divided by 1700 X 100 = 2.9% (all shown in grams)

Yeast: 3 divided by 1700 X 100 = 0.176% (all shown in grams)

Using your handy calculator:

65% absorption would be 1.7×65 (press the "%" key and read 1,105 Kg. water (since the flour weight was shown in Kg. (1.7) the answer will also be shown in Kg.)

Note that the ingredient and flour weights must always be shown in the same weight measures.

I hope this helps,

Dough Clinic / Re: vera napoletana %'s

Peter;

In response to #1 in your above post. I have just retired from my position at the American Institute of Baking with the effective date of August 20, 2014. Jeff has also retired from his position effective in a couple of weeks. Jeff has taken a position with a company that will allow him to utilize his vast experience dough extrusion, sheeting and laminating technology. I will continue to work out of my home office writing for both PMQ and Pizza Today as well as contributing to pizza websites and participation in pizza shows. I will join the ranks of Big Dave (Ostrander) as an independent consultant to both the wholesale and retail pizza industries, as well as providing assistance to the baking industry at large. :)

Newbie Topics / Re: pros and cons of a dough with higher hydration

Higher absorption doughs are easier to mix, are easier to open into pizza skins, exhibit better oven spring resulting in greater porosity across the entire crust, this is especially true in the area of the outer edge of the pizza. The improved porosity of the dough while it is baking actually contributes to a crispier finished crust eating characteristic. This is why we have always suggested that the dough absorption be increased when a crispier crust is targeted. In an indirect way the increased absorption can also influence the flavor of the finished crust. The softer dough exhibits greater rise in the oven which can lead to some bubble formation within the dough, these bubbles typically receive more bake than the rest of the crust as there is nothing under the bubble to sink heat away from it, this results in more color development of the bubble (aka dark spots/leoparding) which in turn contribute to the finished flavor profile of the finished crust. You see a lot of this with English muffins where there are dark or moderately charred points on the crumb surface which contribute to the flavor of the muffin.

Newbie Topics / Re: pros and cons of a dough with higher hydration

Masa flour/Maseca is the only way to go. Corn flour just doesn't cut it flavor wise. If you have a few tortillas left over you can also fry them to make your own corn chips. If you are into Tex-Mex and want to make a great tasting Tex-Mex pizza try adding some masa flour to your regular pizza dough formula/recipe. We add 25% masa flour (based on the total wheat flour weight) with the absorption adjusted to compensate for the drying effect of the masa flour and then process the dough in your normal manner. I like to use picante sauce to replace the pizza sauce and then finish as an open face taco. Allow the baked pizza to cool for a couple minutes and add some lettuce, fresh tomato and a sprinkling of cheddar or jack cheese and serve warm. This sure beats what P.H. used to offer as a taco pizza.

Off-Topic Foods / Re: Corn tortilla recipe - please share

One of the main reasons for using fat/oil in a deep-dish pan is to achieve a fried characteristic to the baked crust. Oil is very good at providing this characteristic while shortening on the other hand gives a finished crust that is more like that of

white pan bread. The shortening also provides for some grip to help hold the dough in place while trying to press the dough out into the pan with oil can be an exercise in futility unless the dough is REALLY soft and relaxed..

Chicago Style / Re: Malnatis (Ghee vs. Corn Oil)

And to that we might also add that there is improved dough consistency at the retail (pizzeria) level when the dough is fermented as dough balls as opposed to bulk fermented is a whole dough in a large container. The reason for this is because the dough that is in direct contact with the walls of the container will be colder than the dough in the middle of the dough mass. This difference in temperature will impact the rate of fermentation, and it can be sufficiently significant to produce a fermented dough mass that has a higher residual sugar level and higher pH around the edges than it does in the center of the dough mass. The result is that when pizzas are made from this dough the crust is not evenly browned and in some cases a good deal of a pizza might have portions of both areas of the dough resulting in a very mottled appearing finished crust. This is not a big thing for home pizza makers, but it can be a problem for pizzeria operators. Dough balls with their smaller size tend to cool down much faster and with greater uniformity, hence the popularity of using dough balls as opposed to bulk fermentation at many pizzerias.

Dough Clinic / Re: Bulk Fermenting vs. Individual Balls

JVP;

GAB hit the nail on the head. It is easier to cool a smaller dough piece than a larger one (individual dough ball v/s bulk fermenting the entire dough) so ultimately it all depends upon what you want in flavor. Since a dough will increase slightly in temperature as it ferments, within a given period of time, you will get more fermentation taking place with bulk fermentation than you will with dough that is being fermented as a dough ball.

Dough Clinic / Re: Bulk Fermenting vs. Individual Balls

JVP;

When you add VWG to any flour you will increase the protein/gluten content by 0.6% for each percent that you add based on the total flour weight, so if you were to add 5% VWG the protein/gluten in the VWG/flour blend would increase by 3% ($5 \times 0.6 = 3$). When adding VWG remember to increase the water by approximately 1.75 times the weight of VWG added. A commonly used flour in New York for making N.Y. pizzas is All Trumps which comes in at 14+% protein content. One of the reasons why N.Y. pizza is so chewy.

Dough Clinic / Re: KAAP VS KABF

Those traces of coating are most likely tin plating. We see this on a lot of the older Hobart mixing bowls too. As for coating the inside of the bowl and the hook with something to prevent rust, unless it is going to be used as a museum display piece don't use anything except a food grade oil. If you have concerns about the oil developing rancidity I would recommend using white mineral oil.

Prep Equipment / Re: Need help restoring an old mixer.

Jonas;

Since Kamut is an ancient relative to modern day wheat and somewhat like Durham wheat it can be used to replace wheat in many formulas/recipes that are not highly dependant upon gluten for strength, flat breads, pitas, pancakes, cookies and of course pizza all come to mind. Due to its higher fat content you probably

won't need to add much oil/fat to the dough formula, and in some formulas you might get away without adding any fat at all. The only thing you will need to do is to experiment with the absorption to find what works best for you using your dough formula. I would think that a good formula might be as follows:

Kamut: 100%

Salt: 2.5%

Olive oil: 1% (optional)

Sugar: 2% (optional)

IDY: 0.5%

Water: (80F) To be determined

Procedure:

Put water in bowl followed by the remainder of ingredients, mix to a cohesive dough/mass.

Set aside and allow to hydrate for 1-hour, then scrape from bowl onto a Kamut flour dusted surface and knead several minutes.

Lightly oil the bowl and place the dough back into the bowl, lightly oil the top of the dough, cover with a sheet of plastic and allow to ferment for 1-hour. Turn dough out of bowl and divide into desired size/weight pieces, form into balls, lightly oil the dough balls and place into plastic bread bags and allow to cold ferment in the fridge for 24-hours, remove from fridge on the following day, allow the dough to warm to about 50F and turn out onto a Kamut flour dusted counter top. Open the dough to desired diameter. I like to use about 14-ounces of dough for a 12-inch crust (Dough loading factor of 0.1239). Since this will be a slightly more dense crust you will need to experiment with baking time and temperature for your oven.

Dough Clinic / Re: White kamut flour formulation

Hey guys, please excuse me for a minute while I wipe the egg off of my face. Lots of things going on right now and my attention isn't what it should be.

With the KAAP having the power protein content of the two flours the effect of protein still remains the same, but with the lower protein content of the AP flour you would need to use less dough absorption and you might find the dough to be somewhat problematic with long time cold fermentation due to excessive weakening of the already lower protein level. If you are into hand slapping or tossing the dough you might also find the AP flour to give you a dough that could be too soft/extensible for good handling properties. The good news is that for the most part you can blend AP and bread flours together to make a custom blend specific to your needs.

Dough Clinic / Re: KAAP VS KABF

JVP;

You made reference to two flours but only made mention to KABF what is the other flour? In very general terms the higher the protein content the greater the potential for crispiness (if you have the correct dough absorption and the pizza is baked correctly) at the same time the higher protein will contribute to the potential for a more chewy/tough eating characteristic in the finished crust. There are just so many different things that can influence these characteristics such as forming method, formulation, dough management, and baking that you cannot draw a parallel but in general terms the above is correct. If you want to have a crust that has a more tender eating characteristic going to a lower protein content flour or blending a strong flour like bread flour with all purpose flour will give you the ability to produce a crust with a more tended eating characteristic.

Dough Clinic / Re: KAAP VS KABF

Those bits of skin contain what is called the "velvet" the portion immediately under the skin, and the reason why they are present is because of the flavor they bring to the product. If I am working with a client that doesn't want the skin in the sauce I commonly use Tomato Magic (ground whole peeled tomatoes) from Stanislaus.

Sauce Ingredients / Re: My thoughts on 6 in 1 Tomatoes

JB;

Our local supermarket carries a number of different flavored oils in spray cans and they are reasonably priced too.

Pizza Hut has been a big user of Leprino cheese.

American Style / Re: Pizza Hut RGM willing to answer questions

I realize that photoshop does wonders at product enhancement and sometimes it is even used to develop products that don't actually exist at all and that could well be the case here, but just think of the WOW factor when someone actually makes one of those things!

Remember, it ain't the destination that counts, but instead it is the journey. Can it be done? I don't know, but I'd sure like to be able to give it a try. We might learn something from the journey and get to eat some interesting pizza too. :)

General Pizza Making / Re: Boston Pizza's "Pizza Cake" - How would you make it? Will it work?

When I first saw pictures of this pizza I thought that I would schedule some lab time to see if I could come close to replicating it for demonstration at our annual pizza seminar, but alas, things change and that won't be happening, but here are my thoughts that I was going to base my work on.

- 1) The individual crust layers appear to be fully baked as you can see the porosity of the crust in each layer.
- 2) The outer crust is a solid, continuous crust indicating that it was baked all at one time.
- 3) The toppings on top of the pizza do not appear to be overly baked. The pepperoni is cupped but what appears to be ham is not overly baked.

To address these observations I was thinking about using a 3-inch deep removable bottom cake pan. I would use a deeper pan but this is as deep as we have. To make the layer crusts I planned to bake several thin crusts in the pan. Lightly sauce the dough to control bubbling and give it a full bake as opposed to a par-bake.

The assembly I was contemplating went like this:

- a) Prepare a regular pizza dough suitable for use in making a deep-dish pizza.
- b) Prepare the baking pan by greasing it with shortening or Crisco.
- c) Roll the dough out so it is at least 8-inches larger in diameter than the diameter of the baking pan.
- d) Fit the dough into the pan and up the edges leaving the surplus hang over the top edge of the pan.
- e) Add toppings (fillings) to the bottom of the pan using precooked meats and sauteed vegetables. Nuke them so they are hot when assembling the pizza.
- f) Add one of the pre-baked thin crusts on top of the filling and add more filling. Repeat this until the pan is filled to within 1/2-inch of the top.
- g) Using a rolling pin or pie pin crimp cut the excess dough from the top edge of the pan.
- h) Apply desired toppings to the top crust.
- i) Tent with foil to protect the top of the pizza from oven heat and bake at 375F

until the center reaches 165F.

j) Remove tenting foil and bake at 450F until top of pizza is done.

k) Remove from pan for cutting and serving (this is where the removeable bottom pan comes into play)

The other approach was to simply bake a number of thin crust pizzas. Line the pan with dough as described above and begin layering the pizzas into the pan. The top crust would be prepared only with some sauce on it to control bubbling. Crimp cut the dough from the top edge of the pan, dress the top of the pizza and bake at 400F until the crust is browned and the center of the pizza has reached at least 165F.

Note: The individual layer crusts may need to be trimmed a little to fit back into the pan which is now lined with dough. As the dough expands during baking it will lock onto the layering crusts to give the pizza structure.

If anyone tries this I would sure like to see pictures and know how they made it. This looks like another fun journey in the world of pizza making.

General Pizza Making / Re: Boston Pizza's "Pizza Cake" - How would you make it? Will it work?

Cam;

All Trumps flour comes in at a little over 14% protein content while Full Strength comes in a bit lower at 12.6% protein content. It all depends upon what you want to use the flour for. In New York City A.T. is the flour of choice because it provides the desired chewiness but if you don't want that level of chewiness F.S. might be a better choice. I've had exceptionally bad results using A.T. in thick crust and deep-dish pizzas as the finished texture was excessively tough and chewy. Things were a bit better with flours in the 12% protein range. For all of the pizza work that I've done over the past 45+ years I've used flour in the 12% protein range more often than any other. It is, in my opinion, probably the best all around protein range (12 to 12.6%) for making just about any type of pizza by just about any dough process, management procedure or opening method. Full Strength is at the top end of that protein content range. Even better, there is a good selection of flours from different manufacturers that fit into that protein range whereas it can be a bit difficult to find flour with 14+% protein in many locations. Possibly one of the most readily available flours in this protein range (12 to 12.6%) is the Pillsbury Bread Flour available at most supermarkets. This flour was packaged for retail back in the day when bread machines were popular and consumers wanted a flour to use in their machines just like the bakers used to make white pan bread.

Dough Ingredients / Re: For those who use full strength..

A couple more aspects to consider are insurance and utilities. First off you might want to check with your insurance agent to make sure you are sufficiently covered in the event that something goes wrong and someone gets sick, or worse. Then you will probably want to find some small size commercial equipment, like an oven and possibly a mixer and make sure you have utilities (gas and/or electric) capable of supporting that equipment. I've been involved with a number of home conversions into pizzerias (that's how Home Run Inn Pizza got their start in Chicago) and in most cases we had to make modifications to the gas supply, but in some instances we had to have a new breaker panel installed to support the added power needed to operate an electric oven. It will depend upon how many amps are needed and how many amps you have available at your breaker box to tap into.

Shop Talk / Re: selling pizza from home kitchen

Scott;

Not really, ascorbic acid is an excellent oxidizer in dough systems and there is essentially no limit in place regulating how much can be used. Flour millers have a maximum limit of 200 ppm but as bakers/food processors, we can add whatever we need. How safe is ascorbic? Runners have been known to take thousands of milligrams of ascorbic acid twice a day. Additionally, ascorbic acid is approved for use just about world wide. Several years ago the only two dough oxidizers that we had to work with were ada/azodicarbonamide and ascorbic acid. The problem we had at that time was that the use of ada was limited by regulation and when considering the rate of reaction, ada was just a little slower reacting than ascorbic acid, the solution was to use microcrystalline encapsulation on the ascorbic acid to delay its reaction so it would react in the dough after mixing rather than during mixing. The strong point for bromate is its timing of reaction. It reacts late in the dough processing stage and all the way into the very early baking stages where everything else was spent within an hour or so after mixing if not in the mixer. Because of this the early bromate replacers got a less than stellar review. With regard to safety issues, it is the bromate not being 100% converted to bromide that poses the health concerns, this is well documented, not the oxidizing properties, like I said, if that were the case many of us would be dead already due to the massive doses of ascorbic acid (vitamin-c) that we have taken over extended periods of time. With all of that said, am I against bromate? Of course not, that is a personal decision that each of us must make. Does bromate work? Absolutely! Do we really need it? The answer to that depends upon who you ask, some say they can live without it, others can't so they sit back and complain about how good it was in the "good old days", while still others embrace the new bromate replacers which have demonstrated their ability to function equally as well as bromate but without the consumer stigma tied to bromate. This is why we see both bromated and non-bromated flour being sold today. My guess is that eventually the bromate replacers will become mainstream and bromated flours will no longer be available and in 50-years somebody will find something wrong with the bromate replacers and the cycle will start all over again because that's how things normally work.

Dough Ingredients / Re: baking pizza and breads

Scott/Adrian;

While bromate is not illegal to use in the U.S. some states do require a health risk warning on the label of products made with bromated flour. There was never a problem with bromate because it was thought that all of the bromate was converted to bromide during the baking process, but in the early 1970's new detection methods were developed and residual "bromate" was found to exist after baking. With the philosophy that bromate is indeed a potential carcinogen, the question was posed: Just how much of a known carcinogen do you want to consume? The answer was none. Consumers around the world were now beginning to question everything when it came to cancer so when bromate and carcinogen were mentioned in the same sentence the politicians reacted immediately by banning bromate (Europe, Canada and all other countries following their lead) while the U.S. took a more logical position of asking if the levels now being detected (parts per billion/PPB) were dangerous to one's health. I'm not aware of any specific types of cancer or health problems that have been traced directly back to consumption of bromate, if it was bromate would be gone in a flash. To be honest, I'm more concerned about air quality than I am about my potassium bromate intake. That's just my own personal take on it. Others may feel differently and if it makes them feel better or safer to avoid bromate, so be it. Due to public/consumer pressure and concerns all major fast food companies and most

large food manufacturing companies have taken bromate out of their dough formulations, with that said, we now have some oxidative enzymes available to work with that are looking to be about as effective as bromate so there is a continuing shift away from bromate since there is now a good alternative that wasn't available a few years ago. I'm now working with food companies to get azodicarbonamide aka yoga mats out of their product formulations and I'm glad to say that with the alternative ingredients that we have to work with today this is proving to be a pretty easy thing to do.

Dough Ingredients / Re: baking pizza and breads

Here's a formula and procedure that we use all the time and it performs just as you have asked.

Flour: 100% (bread flour)

Salt: 2%

Sugar: 1%

Olive oil: 2%

IDY: 0.75% (hydrate in a small amount of warm (95F) water.

Water: 58% (80F)

Procedure:

Put water in mixing bowl, add sugar and salt followed by the yeast suspension.

Whisk together very briefly. Add the oil and whisk once again immediately followed by the flour. Stir the flour into the liquid until the flour is hydrated, this normally takes a few minutes. Turn out onto a floured bench/counter top, oil a suitably sized bowl/container. Note: A 30-gallon trash container with a food contact approved plastic liner should work well for the formula given below. In this case be sure to oil the dough before dropping it into the lined trash container as this will prevent the dough from sticking to the plastic bag when you go to remove the dough.

Place the dough into the oiled container and drape with a sheet of plastic.

Allow to ferment at room temperature for 2-hours then turn the dough out onto a floured counter top and scale into desired weight pieces.

Form each dough piece into a ball, wipe with salad oil and place into individual plastic bags.

Place all of the dough balls into the fridge to cold ferment overnight.

On the following day transport the dough in a cooler to the event site.

Remove what you will initially need and allow to warm to 50F (about 1-hour for individual size pizzas).

Open dough balls into pizza skins by hand, dress and bake to the order. The dough balls are good for up to 3-hours after they have reached 50F.

Remove remainder of dough as needed and process in the same manner.

To convert percentages into weight measures grab your calculator and follow along;

Enter the weight of flour you want to use (remember that the weight of the ingredient will be shown in the same weight units as the flour weight is expressed in)

After entering the flour weight press "X" and then enter the ingredient percent you want to find the weight for, now press the "%" key and read the weight in the display. Example: Flour weight is 7-pounds ($7 \times 16 = 112$ -ounces) all ingredient weights will now be in ounces.

Salt: 2% (112 X 2 (press the "%" key and read 2.24-ounces in the display. Round to 2.25-ounces of salt.

More math fun:

Add up all of the percentages in the dough formula (163.75 for the above formula).

Divide 163.75 by 100 = 1.6375

Decide what the individual dough ball weight will be, lets say 4-ounces each.

Decide how many dough balls you want to make, lets say 60 to be safe.

You will need to make at least 60 X 4-ounces or 240-ounces of dough for this order. To find how much flour you will need to base your dough on simply divide the total dough weight (240-ounces) by 1.6375 = 146.56-ounces (round this up to the next whole unit so it now becomes 147-ounces. You will need to base your dough on a total of 147-ounces of flour.

Salt: 2% 147 X 2 (press the "%" key) read 2.94 (call it 3-ounces of salt)

Sugar: 1% 147 X 1 (press the "%" key) read 1.47 (call it 1.5-ounces of sugar)

Olive oil: 2% 147 X 2 (press the "%" key) read 2.94 (call it 3-ounces of oil)

IDY: 0.75% 147 X 0.75 (press the "%" key) and read 1.10 (call it 1-ounce of IDY)

Water: 58% 147 X 58 (press the "%" key) read 85.26 (call it 85.25-ounces of water or 5.33-pounds of water)

Good luck with your pizza gig!

Dough Clinic / Re: Need Dough Recipe for an Event

Peter;

You nailed it! :)

The second to the last sentence is the meat that we are chewing on here.

That's the problem when you write as much as I do, you know what you wrote but can't remember where you wrote it. Has anybody seen my car keys? :-D

Dough Ingredients / Re: baking pizza and breads

Since I wrote that article we now have one more ingredient to work with in developing low/reduced carb products, this product is called "resistant starch" think of it as a non-digestable type of starch. It functions much like a regular starch but the human body does not produce the enzymes needed to hydrolyze it into sugar. National Starch Company would be a good supplier for this product.

Additionally, if you go to some of the "diabetic friendly" web sites you might be able to find some home formulas/recipes that you can build upon.

Monthly Challenge / Re: Super low carb NY style pizza???

The only difference between bleached and unbleached (bread) flours is in the color of the flour and the fact that the bleached version will typically provide a slightly brighter crumb color in the baked product. The only thing the mill is doing is bleaching out the beta carotinoid pigments (yellow color) from the flour. There is no impact on the taste or aroma of the flour or finished product. Cake flour, on the other hand is a whole different animal, in this case the bleaching is done for a totally different reason, in addition to making the cake flour whiter in color, the bleaching process weakens the flour protein and most importantly it modifies the flour starch which allows bakers to make what we refer to as high ratio cakes.

These are caked made from formulations that have more sugar than flour as opposed to low ratio cakes which are typically made at home where the sugar is equal to or less than the flour weight. Now you know why those cakes you buy at the supermarket are so sweet tasting. This is why cake flour does have a different appearance and aroma, and it makes for a really poor quality bread or pizza flour, even when blended it isn't very good. I believe in a previous post I might have given a listing of flours from different manufacturers which fall in the 12% protein content range. If I'm wrong let me know and I'll post the list for you.

Dough Ingredients / Re: baking pizza and breads

To bake a Chicago style thin crust from raw frozen would be a bit of a challenge indeed. But if I had to give it a shot in a home oven here is how I would start. Have two pizza stones available to work with, place one in a lower rack position to preheat while the other one will go on a center rack position at the time the pizza is placed into the oven. Baking temperature would be 425F. Place the frozen pizza on the cold stone as this will allow the top portion of the pizza to thaw and bake without developing and bottom crust color. When the top of the pizza is hot and just beginning to bubble I would transfer the pizza to the hot stone on the lower rack position to allow the bottom of the pizza to receive some heat to hopefully get sufficient bake to the bottom crust before the top of the pizza becomes the limiting factor for bake time. When you say flash frozen do you really mean "flash" frozen? To accomplish flash/blast freezing you must employ air temperatures in the range of -20 to -38F or if cryogenically frozen we are looking at freezing temperatures in the range of -45 to -60F. The reason I bring this up is because freezing at temperatures above those cited above will be damaging to the vegetable toppings causing them to break down as they thaw and release copious amounts of water while you're trying to bake the pizza. This results in what we fondly refer to as a "swamp" pizza. Additionally, the vegetables will have all the character of a very limp pasta noodle. Baking in a commercial air impingement oven can address a good deal of the water issue but it cannot resolve the textural properties of the vegetable toppings. This is why we advise that if pizzas made at home are to be frozen in a static freezer (anything not considered to be a blast freezer) the amount of vegetable toppings be very limited, sliced thinly, and if possible blanched or better yet, use canned or IQF (individually quick frozen) vegetables for the toppings. If using IQF vegetables they should be applied immediately before the pizza is placed into the freezer, even then it is wise to limit the amount used. Commercial frozen pizzas are typically made with a par-baked crust (exception being bake to rise pizzas which utilize a raw dough base). The vegetables most commonly use are IQF and many use moisture controlled IQF vegetable toppings to address the breakdown issues associated with freezing vegetables.

Chicago Style / Re: How would you bake a frozen Chicago thin pizza?

We have been showing our students those same benefits of using a "plastic" fat (Ghee, margarine, butter, Crisco, etc) in forming the dough into the pan as opposed to using oil. In fact we hold a contest where one group of students try to fit the dough into an oiled pan while the other group fits the dough into a "greased" pan. We all know which group won that contest. The biggest difference between using oil and shortening in the pan is that shortening/plastic fat gives the finished pizza a drier looking crust than the oil does. Some of our students have compared it to a bread crust/heel slice, while the oil provides a fried characteristic to the finished crust. In many cases we have used a plastic fat to coat the inside edge of the deep-dish pan and oil to cover the bottom of the pan, this way you get the best of both worlds, ease of forming the dough to the pan while still getting a fried crust characteristic, of course if you don't want that oily crust just go with all plastic fat. For a unique flavor sometime try sprinkling raw sesame seeds into the pan before you drop in the dough and begin pressing it out. The seeds bake into the bottom of the crust and provide a great toasted sesame flavor to the finished crust. This is already making me hungry!

Chicago Style / Re: Malnatis (Ghee vs. Corn Oil)

DB;

If you forgot to add the salt to the dough that could very easily explain what you were experiencing. Salt is a strengthener for the dough and it also plays a very

important role in controlling fermentation activity. I have personally collapsed more than one bread dough by scaling sugar for salt. Oops!

If the microflora in the starter changes (the expression is that the starter has been lost) you can get a change in dough performance and/or flavor of the finished product in which it was used. In this event it is best to just start a new starter all over again. This is why it is so highly recommended that when you have a starter that you really like that you divide it into multiple containers at different locations so if one is lost you can always use one of the other to seed/start a new starter with the same microflora.

Neapolitan Style / Re: My SD starter is totally breaking down my dough!

John;

Pizza Hut style pan pizza is not terribly difficult to make. You can use just about any type of flour that is suitable for making bread and rolls. While a high gluten/protein content flour can be used the finished crust is usually tougher than desired when this type of flour is used. Here is a pretty typical formula and procedure that I have used for many years. For this formula you will need an approximately 12-inch diameter (285mm) baking pan that is 36 to 50mm deep with a dark color.

Flour 100% (500-grams)

Salt: 1.8% (9-grams)

Sugar: 3% (15-grams)

Shortening: 2% (you could also use butter or margarine) (10-grams)

Fresh/compressed yeast: 1.5% (7.5-grams)

Water: 56% (variable) adjust the water temperature to 24C/75F (280ml/grams)

Procedure:

Mix the dough in your preferred manner. For this type of pizza you don't need to really develop much gluten during mixing as it will develop biochemically during the overnight fermentation process.

Divide the dough into two 425-gram pieces, lightly oil each dough piece and place into individual plastic bags or into individual bowls covered to prevent drying and place in the refrigerator to cold ferment overnight (18 to 48-hours). Remove dough from fridge and allow to warm at room temperature for about 90-minutes, then turn the dough out of its container onto a floured counter top/table and roll out to a diameter slightly larger than your pan diameter. Prepare the pan by applying shortening or margarine to the side of the pan and about 30ml of peanut oil to the bottom of the pan, place the rolled dough piece into the pan(s), cover with a piece of plastic to prevent drying and allow to rest for 20 to 30-minutes, then come back to the panned dough and using your fingers, carefully fit the dough to completely fit the bottom of the pan and pull the edge of the dough up the sides of the pan to a height of about 25mm. Cover and set aside again and allow to proof/rise for approximately 45-minutes. The dough is now ready to apply the sauce and desired toppings. I have had good luck baking these pizzas on the oven rack at a temperature of 425 to 450F/218 to 232C. I like to start out by placing the pizza in a lower rack position for about 10-minutes and then turning the pizza and placing it in a higher rack position for another 10-minutes. These pizzas normally bake in around 20-minutes but since every oven is different you may need to experiment a bit to find what works best in your specific oven. To cut this type of pizza use a French knife or any large knife that is not serrated.

New Forum Members / Re: how to make pizza hut pan pizza

DB;

Two things come to mind here. One is that the starter might be getting too acid and the acid is breaking down the flour protein structure. You could probably test this with Litmus Paper. Another thing that comes to mind is protease activity. While we usually associate protease with fungals it can also be of bacterial source and since a starter is nothing more than a bucket of bacteria and yeasts living together harmoniously, there is a good possibility that some of the bacteria have changed over time (not a rare occurrence) and you are now getting a dose of bacterial protease with your starter. Protease breaks down proteins much in the same way that meat tenderizers make a tough cut of meat more tender eating. Usually the first sign of protease activity in a dough is a softer, more extensible dough, then as things progress the dough becomes tacky and ultimately sticky, it's about this time is when the protein/gluten has been damaged (hydrolyzed) to the point where it will no longer support its own weight and the dough collapses or begins falling apart (a common term for this is that the dough appears to be rotting).

Neapolitan Style / Re: My SD starter is totally breaking down my dough!

SB&G;

The most common culprit associated with an issue of this type is that of dough management. Specifically, I would be looking at the finished dough temperature (you are looking for something in the range of 75 to 80F in your case), the way you cool the dough in the cooler (do you cross stack and down stack) or like many B&Gs do you use a reach in cooler? In this case you might be better served by lightly oiling the dough balls and placing them into plastic bread bags on an open sheet pan in the cooler. You mention bringing the dough out for the "day", typically, the dough is brought out of the cooler and allowed to warm AT room temperature until it reaches 50F and from that point on it will be good to use over the next 3-hours. Of course flour protein content (12 to 14%) is important as well as dough formulation. Any additional information that you can provide on the formula and dough management procedure will greatly help in providing a more specific answer to your question.

Dough Clinic / Re: dough failure in the cooler.

You might check around to see if you can locate some used souffle sheet pans. These are the pans used by bakeries when they make things like jelly rolls. The pans are of steel construction but are designed specifically to resist warping (also called "boating") this is where the two ends of the pan are higher than the center section when the pan is placed on a flat counter top. You might also contact Paul Tiffany at Lloyd Pans <ptiffany@lloydpan.com> to see if they have a sheet pan that will work for you in your application. Lloyd Pans is a custom pan manufacturer (they also make a vast assortment of pizza tools) so they have a lot of different things in their inventory, and if they don't have it they can make it at a very reasonable cost.

Focaccia Style / Re: anyone ever heard of "cure baking" steel pans?

Dave;

That's the part that blew me away too! Trust me it did get hot in that window too, and in the winter it did not freeze by a long shot, but it was rather cool. The red coloring on the package had faded to a very pale pink. I worked with a couple of bakeries in Australia when I was under contract with McDonalds and all they used was IDY that was imported from Europe.

Neapolitan Style / Re: Which Yeast?

Peter;

I have to admit to wearing two different caps at times. In a commercial setting, be it a bakery or pizzeria failure is not an option, and neither is inconsistent yeast performance, hence my more conservative approach to many things, but when baking at home I also push the envelope beyond what is normally practiced in a more commercial setting because if the dough doesn't proof quite as fast as anticipated or as fast as past history indicates that it should, I can easily wait on it to proof to whatever height I'm looking for, and if the dough doesn't rise quite the way as it should have the person eating it didn't pay up wards of \$20.00 for a bad experience. For example, my wife just made a batch of scratch chocolate chip cookies and they got a little over baked. In a bakery they would have gone directly to the trash, do not pass "GO" do not collect \$4.00 for a package, but at home we ate the cookies and I actually liked the flavor of the slightly overbaked cookies more than I like the flavor of regularly baked chocolate chip cookies. We have all said that half of the fun of making pizza at home is in eating all of your mistakes, how true that is! We can't eat those mistakes in the cookie cutter retail world though. To the point, how long do I typically store my bags of IDY? When unopened I have been know to store them for years, OK, so the performance wasn't 100% but who cares? I just used a bit more than I would have if using fresh IDY, again, who cares? The cost for my dough was a little more expensive as I had to use more IDY, who cares? Like I said, When opening a bag of IDY I have found that I get the best results with extended storage periods if I leave the IDY in the original bag and just fold it down tightly against the yeast and secure it with a rubber band and then store it in the fridge. Before I use the yeast though I ALWAYS bring it out of the fridge the night before I want to use it to allow it to warm to room temperature. Why you ask? Because moisture is the greatest enemy of IDY and ADY for that matter. By allowing the yeast to warm to room temperature BEFORE opening it I prevent any condensation from forming inside of the bag during the few seconds that I've got the bag open to pour/measure out the yeast. If you repeat the opening and closing scenario a number of times you just add to the deterioration of the yeast, and since I'm already storing the yeast longer than the manufacturer recommends, I can't see any benefit to adding to further deterioration. By the way, I don't like to store the IDY/ADY in a plastic bowl either due to the greater headspace in the bowl which just allows for more moist humid air to enter the bowl each time I use form the yeast. A plastic bag works pretty good for storing extra yeast in if you burp the bag and fold it flat against the yeast and secure it with a rubber band. Vacuum sealing of the yeast in a bag is by far the best, but I find it a real pain to drag out the vacuum sealer each time I want to use my yeast, and those little bags aren't cheap either so it becomes a cost benefit ratio for me. Now you've seen both of my caps. :)

Neapolitan Style / Re: Which Yeast?

There are probably as many G.F. formulas as there are fish in the ocean, and like the fish, there are good ones and not so good ones. Some formulas/recipes are more like an ingredient house inventory list while others are pretty straight forward and easy to make, and like everything else, what one person absolutely loves, another person might question that other person's sanity. There are a number of celiac web sites that offer G.F. formulas as well as dough mixes and complete products, begin your quest to sample whatever is presented to you to find a G.F. crust that works for YOU.

New Forum Members / Re: Gluten Free

I did a study on IDY a number of years ago where I subjected bags of IDY from the same lot number to different types/conditions of abuse. This included placing bags

into a south facing window for two years (rotated the bags 90 degrees after the first year) so both sides were exposed to the heat more or less equally, then stored bags at room temperature (averaging 70F), bags were also stored in the cooler at an average temperature of 38F, and in our walk in freezer at an average temperature of -5F. Like I said, we subjected the bags of yeast to these conditions for a period of two years before conducting the testing on the yeast performance using a Risograph instrument to accurately measure gas production/yeast performance. For a control we used a fresh, recently produced sample of the same IDY. We found that the yeast which was subjected to two years of Kansas window heat severely faded the colors on the bag but only reduced yeast activity by roughly 25%. The sample that was stored at room temperature lost about 15% of its activity, and those which were stored in the cooler and the freezer only lost about 5 to 8% of their activity as compared to the control sample. This speaks very well for the tolerance of IDY to adverse storage conditions, the real shocker was how well the yeast that was stored in the window performed. Based on these findings I implemented use of IDY for all of our dough testing and over a several year period, and hundreds, if not thousands of test doughs, consistently gave final proof times within +/- 60-seconds of the targeted 60-minute final proof time. Pretty amazing!

Neapolitan Style / Re: Which Yeast?

Peter;

You're "spot on"! :)

Newbie Topics / Re: Help

PAB:

My personal vote goes for the IDY due to its exceptionally long shelf life. I get it in 500-gram bags and unopened they are good for up to two years, once opened and stored correctly I normally try to use it up in around three months or so. Some say they can keep it much longer but since I also use the yeast for making sweet rolls and bread I need the optimum performance of the fresher yeast.

Neapolitan Style / Re: Which Yeast?

I would get two different types of pans, one a deep pan and the other a shallow (1/2-inch deep) pan. Make sure the pans are dark colored or season them well prior to use, and always remember to NEVER soak a seasoned pan in water, if you do the seasoning will come off of the pan like a bad sunburn. This will allow you to experiment with both pan and hearth style pizzas. Hearth type pizzas are those that are baked directly on the oven hearth (stone). Don't forget to grab a good pizza wheel too, be sure to get one with a large diameter wheel. Prepare to have fun and always remember that your mistakes will taste good too.

Welcome!

P.S.

Send me a message and ask for my home made pizza dough recipe I'll be glad to send you a copy.

Newbie Topics / Re: Help

Richard;

I've not heard of that particular mix before, but keep in mind that the word "mix" would typically indicate that it is something that you would only need to add water to when preparing the mix into a dough/batter. Since pretzels are made from a dough almost identical to that which is used to make French Bread, Pizza Crust, Vienna Bread, or Bagels, I would think that you should be able to substitute any

other kind of mix indicated here to achieve similar results.

Dough Clinic / Re: Producers Brand ???

Akhwee;

Welcome to a wonderful site for learning how to make pizza at home. I am said to be the first person to introduce pizza into the Korean market in Seoul many years ago. This was well before any of the big box pizza stores ever made it to Korea and as pizza is not a part of your culture, there were not any independent operators to be found anywhere in the country. When I did my first demonstrations on making pizza I used dried squid for a topping which proved to be very popular as it gave a flavor something like anchovies, but a little more mild tasting. Since beef was quite expensive at the time we worked with seafood and chicken toppings. With the presence of the big box pizza stores most young adults have been exposed to pepperoni so I agree that it would make for a very good topping for you to experiment with. I'm not sure where you might go to find it you might be able to identify an importer. Also, be aware that there is a large food/pizza show in China (I don't remember what the scheduling is, but if you contact Mr. Steve Green at <sg@pmq.com> he will be able to direct you to someone who can provide you with the show details) the reason why I mention this is because at this show you would be exposed to many of the ingredients available for making pizzas in Asia along with many of the suppliers. I believe that Steve Green has a contact person in China that he might be able to direct you to see if she can identify any possible ingredient suppliers for you. Some of those suppliers might already in in Korea, we just need to locate them for you.

New Forum Members / Re: here i go!

Quality is a relative term/thing, I once had a professor tell me that quality is nothing but a perception, and since perception is reality the two are one and the same. In summary, quality is what you perceive it to be. Some companies have even redefined quality as it pertains to their operations. For example, McDonald's doesn't put quality on the back of their burgers, but instead it is placed on customer impression, in this case meaning consistency. The reason why people go to McDonald's is not to get the best burger ever, but instead they go there because they know what they are going to get for their money (consistent quality food and service, in a clean environment is the name of their game). The same goes for other big box chains such as Domino's (fresh, hot, fast). While they may promote great tasting pizza (by whose standards?) it sure sounds better in an advertisement or commercial than average pizza (average by whose definition?). You see, it's an endless loop where quality is concerned, this is why the mantra in the restaurant industry is good/great food will make some of the customers happy, while good food when combined with great service will make everyone happy. Food brings them in, but it's the service that keeps them coming back.

Remember this commercial? "Folgers buys only the finest coffee beans" So, if they bought only the finest coffee beans, what was your favorite coffee made with? Probably not the "finest" because Folgers bought all of those. Sure, everyone here loves the hearth baked style of pizza, that's why we're here, but to say that it is the only decent or "real" pizza is missing out on a lot of really good, and interesting eating with a really different take on flavors. Enjoy life for all the variations and experiences it provides.

Sauce Ingredients / Re: Costco Pizza Sauce

I like to add the oil using a brush adding just enough oil so you can see a shine on the surface of the dough, anymore than that is not needed, and if you use too much

oil you can create a situation where everything pulls off of the slice with the first bite. You can get a similar affect by using too much sauce too.

Sauce Ingredients / Re: sauce recipe

Bagels are best made with little to no fermentation up front, but rather the individual pieces are fermented overnight in the cooler.

As for the addition of fruit/fruit pieces try using a product called fruit / berry nuggets, or if you are so inclined, use a dehydrator to partially dehydrate the fresh strawberry pieces and the whole blueberries. For making a cinnamon swirl, make a thick paste out of cinnamon and salad oil and then carefully blend this in at the end of the dough mixing stage. It is critical that you not blend this in more than just a little bit as the swirls will develop during the forming of the bagels. If you mix the cinnamon INTO the dough you will stop the yeast activity due to the cinnamic aldehyde in the cinnamon.

Off-Topic Foods / Re: bagels

Tom N;

The reason why I put a VERY LIGHT coating of olive oil on the pizza skin before adding the slices of tomato is that the fresh slices, even though patted dry will still tend to lose some moisture/weep which can result in soft or gummy spots in the finished pizza crust. The oil creates a waterproof barrier for our application. We have been doing this for a number of years now, especially at the shows which we used to attend giving baking demonstrations and so far we have never had any crust problems when using the oil even though at times we have allowed the dressed pizza skins to set for as much as 30-minutes before baking. I don't recommend this though as the character of the finished crust did change from those which were dressed and baked soon afterward. The crusts became thicker as a result of setting that long prior to baking, but they did not develop a gum line or any sogginess.

BTW: The oil application to the pizza skin prior to dressing also works well if you need to pre-prep or if you are making take and bake pizzas.

Sauce Ingredients / Re: sauce recipe

The part of your bagel making procedure that is missing is the part where the formed dough pieces are placed on corn meal dusted wood bagel boards (actually, you can use any metal or plastic tray that is dusted with corn meal) and placed into the cooler/fridge for 12 to 18-hours. The bagels are then ready for kettling (boiling) for about 1-minute. After kettling the dough is firm to the touch and the bagels can be placed onto a poppy seed lined tray or sesame seed lined tray for a seeded variety, and then immediately placed onto wood boards covered with a heavy layer cotton canvas (cotton belting works great) that has been thoroughly soaked in water and allowed to drain of all excess water. The formed dough pieces are allowed to bake on these cotton covered boards for about 2-minutes, they are then inverted off of the boards onto the oven hearth and allowed to finish baking on the hearth for about 20-minutes at 450F. Just like with pizza, that time in the fridge (cold fermentation) makes all the difference.

Off-Topic Foods / Re: bagels

Gnatto;

Those spots that you see on the dough after a couple of days in the fridge are either oxidized iron from the flour enrichment or it is due to oxidation of the bran particles in the flour. To determine which it is, try using a non-enriched flour to see if the problem goes away, if it doesn't the problem is most likely due to oxidation of

the bran in the flour and there isn't much that can be done about it. When ever someone asks me where I had my last best tasting pizza I always tell them at home, it was a pizza that I made for myself and if I didn't like it I only had one person to blame. All of those pizzerias and big box stores all pretty well recognize that longer fermentation equates to a better tasting finished crust, but the problems begin to arise when you implement the process across anything from 50 to more than 2500 stores while keeping the process under control, as a result most pizzerias opt for a process that is more easily managed and gives good consistency with a minimum skill level needed and investment capital.

New York Style / Re: lastest pizza - its been a while

One of the things that I've noticed over the years is that we are using more and more dried basil and oregano on our pizzas. The flavor imparted by these dried herbs is very pungent and it detracts or over powers the flavors from the cheese and tomato product. By using the fresh form of basil or oregano the aroma is more of a bouquet that does not detract, but rather compliments the other aspects of the pizza.

Another thing to experiment with is hand crushed whole plum tomatoes. The irregular pieces will provide texture, eye appeal and variations/interest in flavor to the pizza.

Sauce Ingredients / Re: sauce recipe

Oh boy, that is a very difficult question to answer.

I'm a firm believer that simple is best.

Fresh, vine ripened tomato slices (3/16-inch thick) patted dry with a paper towel, or a first class crushed tomato (canned).

Fresh, green leaf basil (not the dried stuff).

Fresh sliced/diced garlic

Directions:

Apply a light coating of olive oil to the surface of the pizza skin, add the basil (I like to tear the leaves into pieces and spread over the surface of the dough), apply the basil and garlic to taste then apply the tomato slices as desired (I don't go for 100% coverage, but instead look for about 75% coverage so there will be spaces between the tomato slices, just make sure a tomato slice covers each piece of basil).

If you opt to use crushed tomato start out the same way with the olive oil on the dough and then add the fresh garlic, roll and French cut the basil leaves and stir into the crushed tomato, apply the crushed tomato as desired.

Add the cheese and dress the pizza as desired. I like to garnish the pizza with an "Italian Wedding Bouquet" (the top four leaf cluster of leaves from a basil stem) placed in the center of the pizza, I then place the pizza back into the oven for just a few seconds to wilt the basil and "pop" the aroma.

I don't put any salt in the sauce since there is already plenty of salt coming from the cheese. For cheese I like fresh Mozzarella or shredded if you like, along with some shaved Parmesan and a kiss of Romano. This adds depth and complexity to the cheese flavor. No, it is not like Domino's or P.H., or P.J's, but I've yet to find anyone who didn't really like it. As an added benefit, the fresh basil doesn't contribute to heart burn as dried basil and oregano do.

Sauce Ingredients / Re: sauce recipe

Ted;

I just recently discussed these very topics, but here it is in a nutshell.

Flour: As protein content goes up, the dough becomes ever more elastic which, in some cases can also impact the finished crust by making it tougher or more chewy.

As the protein content goes up so does the potential for crispiness. Just the opposite is true when the protein content goes down.

Salt: Salt is multi functional, it enhances flavor, strengthens the dough, and controls the rate of fermentation.

Sugar: Provides nutrient for the yeast to feed upon, provides for a sweet taste to the finished crust, and provides additional crust color.

Eggs: Provides a level of richness to the finished crust if used at a sufficiently high level (5% of the flour weight), may improve the nutritional properties of the finished crust, imparts greater crust color.

Milk: Provides additional crust color to the crust, may improve nutritional value of the crust if used at a sufficiently high level (5% and above), can help to strengthen the dough, making it more elastic, unless buttermilk is used there is very little flavor impact from using milk.

Oil/Fat: Fat helps to provide lubrication to the dough making it more extensible, it also helps to repel the migration of moisture into the dough from the sauce/toppings, at higher levels (above 3% of the flour weight) it can have a tenderizing effect upon the crust making it more tender to eat, it can have a slight impact on finished crust color making it a little more golden in color, it can have a significant impact on flavor of the crust by both helping to retain volatile flavors released during baking and by imparting its own unique flavor. When used IN a pan such as for deep-dish pizzas oil will impart a fried characteristic to the crust while shortening or any solid fat will impart a more bread like crust characteristic, fat can also improve oven spring through both lubricating the dough and by helping to seal the gas cells for better expansion properties, and fat can also improve the perceived richness of the finished crust (people like fat).

ADY/IDY/Compressed Yeast: These are different forms of "baker's yeast" and when used at the correct level, or substitution level they all provide essentially identical performance and flavor characteristics.

Water: Hydrates the ingredients, especially the flour where it allows for the development of gluten from the flour. It is used to adjust the viscosity of the dough to facilitate handling, baking, and finished crust characteristics. A softer dough that has a greater hydration level will expand more easily during baking resulting in a lighter, more crispy crust characteristic, a lower hydration will reduce the expansion during baking resulting in a more dense, possibly chewier finished crust characteristic.

I might have missed a couple, but those are the main ingredient functions.

Dough Clinic / Re: How do certain dough ingredients affect the dough and crust?

I did a study a number of years ago using the insulated pizza bags (hot bags) to see how well they worked at keeping pizzas hot/warm. Our cut off temperature was 140F. We used 12-inch thin crust pizzas for all of our testing and we found that a single pizza in a bag designed for a single pizza remained warm for between 25 and 30-minutes while when we put two pizzas into a double bag the time increased to approximately 40-minutes. None of this however addressed the steaming problem that the pizzas suffer from when placed into the insulated bags. When we placed boxes on top of the oven only the bottom box stayed acceptably warm while all of the others were insulated from the residual oven heat by the bottom box.

What we did find to keep a number of pizzas warm for the longest period of time is a heated catering box/cabinet. We also found that the pizzas were a little less soggy out of the cabinet than when removed from an insulated bag. If you see a lot more of those big orders in your future, you might want to look into these cabinets.

Shop Talk / Re: keeping a big order of pizzas from getting soggy for

delivery

Utility;

What was in your location prior to you moving in?

What do you have for signage?

What have you done to promote your opening?

I would assume that your hours of operation are compatible with the local activities?

What is the decor/ambiance of your store?

What does your menu look like?

Another person you might want to think about contacting is Big Dave (Ostrander) Just Google "Big Dave Ostrander" for contact information, Dave is an expert in matters such as yours.

New Forum Members / Re: Running a failing business

Phytonic;

The only thing that I see wrong with your presentation is that there is not enough gravy LOL :-D

After the biscuit and sausage are gone the dessert comes in the form of the remaining gravy.

I'll have mine with lots of coarse ground black pepper too

Lookin' Good!

Chitchat / Re: Repurposed McDonalds \$1 Sausage Biscuit

Patrick;

My own personal preference is to have a stone as large as possible while still providing a minimum of a 1-inch space around all sides of the stone. Square shapes also provide better utilization of space, for example, a 16-inch round only has 201-square inches of surface area while a 16-inch square provides 256-square inches. Not a big deal with round shaped pizza, but it can be a big deal with bread, allowing you to possibly bake more bread loaves at a time on the square format than on the round one.

Stones/tiles/steel, Pans & Accessories / Re: kiln shelves

Black Tie;

We have always used our regular bread type flour for feeding a sour, so unless the directions provide more specific instructions I would use my regular flour.

Tom Lehmann/The Doughy Doctor

Neapolitan Style / Re: What kind of flour to develop and feed a Sourdough starter

Mary Ann;

It is really a pretty simple thing for them to do while they are installing the water softener. All they would need to do is to install a "T" with a ball valve or faucet on the hard water (feed) side of the softener. "Pretty simple" those famous last words!

Dough Clinic / Re: Hard water/soft water

Mary Ann;

I wrote an article covering this very topic for PMQ Magazine <www.pmq.com> In Lehmann's Terms. It will be in the archives as I wrote it some time ago.

In a nutshell; Hard water is good for the dough due to its calcium content which has a strengthening effect upon the wheat proteins in the flour (stronger dough). Soft water will have a softening effect upon the dough consistency, lending to a

softer, perhaps slightly tacky dough feel. As you are making your pizzas at home I can't say if this will be noticed or not, but it is in a traditional pizzeria or in a pizza commissary and most definitely in a wholesale bread bakery. If you want to get a glimpse of what things will be like, get a gallon of water from a friend that has a water softener near by and use that to make a couple of doughs, then decide for yourself if the difference is enough to worry about. If it is, you can buy calcium sulfate from your local pharmacy and add it to the dough formula/recipe at a rate of 0.5% of the total flour weight or about 1/2-ounce for 5-pounds of flour. The stuff is pretty cheap and also safe so there is no worry about using too much. We live out in the country on our own well and when we got our water softener installed I had all of our outside spigots plumbed to the hard water side of the softener (prior to the softener), as there is no need to water things in the summer with softened water. I also had one faucet installed at our laundry sink in the basement that was plumbed to provide only hard water too. The reason for this is because I didn't want to have to go outside in the winter to get hard water for making my doughs. My wife thought that was pretty clever idea so I made a few points with her too. :)

Dough Clinic / Re: Hard water/soft water

TRB;

You're spot on about the Bouncer flour, BUT, if the Bouncer flour is good enough to do all of your testing with, Why would you want to then go out and spend more money on the KA flour? Remember, KA does not mill their own flour, they have it contract milled for them, same for Ceresota flour. Here in the U.S. there just isn't that much of a difference in flours of a similar type. As long as they are malted or unmalted (it will say on the bag), bleached or unbleached (it will say on the bag) but who cares as it doesn't affect baking performance anyway. Enriched or unenriched (it will say on the bag) and bromated or unbromated (it will say on the bag) so it just boils down to protein content, if the protein content is similar it should perform in a similar manner for the home baker or pizza maker. I realize that there can be differences due to wheat variety too, but we normally only see those differences in large wholesale applications. I was once asked what the single best flour was for making pizza was, my response was "the one that works best for you".

New Forum Members / Re: How to make a hi gluten pizza

Tommy;

Along the same lines that Wahoo88 said, bread type flours are quickly becoming the preferred flour for making most types of pizza with exception to N.Y. style pizzas where All Trumps flour (14+% protein) reigns supreme. You can also go to your local supermarket and buy Pillsbury "Bread" flour. This flour was designed for use by home bakers using their new fangled bread making machines. This flour comes in at about 12% protein content making it a pretty decent flour for making pizza with.

New Forum Members / Re: How to make a hi gluten pizza

YS;

Due to the greater purchasing power of the big box chains like Greenwich you may have a difficult time matching them on price point, but like here in the States, the one place where you can effectively compete is quality and maybe toss in a dose of ambiance for good measure. I've spent a fair amount of time there over the years so I've got a little insight into the market. I would think that a store done up to look like an Italian pizzeria, with stone front, gas fired deck ovens (to give the appearance of a wood fired oven/ think Marsal and Sons Oven Company) with

someone tossing the dough and doing all of the assembly by hand might be able to command a premium price (a little higher than that of the box chains) for their pizzas. I would try to keep the presentation looking more like a "gourmet" pizza than a P.H. which seems to be what everyone else is shooting for. This will allow you to use less cheese for cost control, while using nothing but fresh, local market toppings for flavor and eye appeal. Even the way the vegetables are sliced will impact the perception of the pizza. If it looks like a Greenwich pizza, it is, regardless of what you have done different to it, so pay close attention to all aspects of the dough and the assembly and baking. I haven't been there for a couple years now (worked for Greenwich and Jolly Bee (don't think that's spelled correctly) so I don't know if there are any similar concepts already in place, but I don't recall seeing any when I was there last. Be sure to try a seafood pizza made with a hand tossed crust, lightly coated with a white sauce (Alfredo) then sprinkled with dill weed and topped with any firm flesh fish cut into pieces about 1/4-inch thick X 3/4-inch wide X 2-inches long, or use an assortment of different types of seafood. Add some fresh onion slices, fresh tomato and garlic and finish with a LIGHT application cheese (I like to use Parmesan), but any white cheese will work. I wish you the best of luck!

New Forum Members / Re: Another newbie to this great site... From USA, opening in Philippines Islands

Walter;

Needless to say, keep a file on all of the coverage so you can use it when you retire to show the different entities what you are all about and what you can provide for your students/apprentices. Presently, we are seeing all too many states cutting back on mental health care and social rehabilitation and they are beginning to realize that it was more than just a big mistake, so I look for a reversal in this attitude over the next few years and I would think that you might be well positioned to be a player in those changes. The way I see it we can either increase the number of individuals on welfare or we can train individuals in trades/jobs that they can master, thus becoming a productive member of society with the pride that comes with self sufficiency.....that's how you start reducing welfare.

Pizza News / Re: good news keeps coming

Sus;

I'm a huge fan of using nothing but fully ripened tomatoes sliced about 3/16th inch thick and placed over the pizza skin. I like to brush the skin first with a little olive oil, then add some fresh basil and sliced or diced garlic all covered with the tomato slices, then dress the pizza in your normal manner. Everyone comments on the great flavor of the tomato. During the months when you can't get your own or supermarket / farmer's market raised tomatoes I will use drained whole plum tomatoes that I tear apart and use in place of the fresh tomato.

New Forum Members / Re: Abject Alchemist

I know what you mean Walter, my big day is coming very soon.

You might check with the city (Reno) or state (Nevada) to see if they have any kind of resources to help support the training of disadvantaged people for occupations in the food/restaurant industry.

Pizza News / Re: good news keeps coming

Walter;

I know ALL TO WELL what you mean with all the B.S.! Have you given any thought to taking that pizza shop and using it to train kids for work in the restaurant

industry, like an apprenticeship program? Have you contacted the Ohio Restaurant Association yet? Bradie Rice would be the person to talk to (use my name) since they hold the NAPICS (North American Pizza and Ice Cream Show) in Columbus each year Bradie might have an interest in your story, she might also be able to develop a conduit for your apprentices to enter into the restaurant industry. Just a thought.

Pizza News / Re: good news keeps coming

Walter;

Congratulations!!!

My hat is off to anyone like you who goes the extra mile to improve someone's future.

Years ago I was involved with helping mentally disadvantaged kids learn different trades, print shop, sales, jelly shop, pet shop, restaurant work, and baking at Lamb's Farm, in Elgin, Illinois. My part was working with the kids in the bakery department where we had a fully equipped bakery and made products for sale at the outlet store (also a training opportunity for the kids) and their restaurant (The Milk Pail) also in Elgin, Illinois where the kids were trained in many different Jobs common to the restaurant industry, including waiting on tables. This was a very rewarding experience for me while I did it, had to stop though as we moved to Kansas, as someone who can do this all of the time your life must be very rewarding.

Pizza News / Re: good news keeps coming

Peter;

That is an excellent description of their process. I'm very familiar with all of the equipment described, but I would like to add that the dough pieces are probably better described as looking more like oranges or grapefruit (depending upon their weight) than donuts which I was trying to visualize how/why there would be a hole in each dough piece when the equipment employed does not provide that added feature. The Vemag dividers operate much like that of a meat grinder without the plate installed and as the dough is extruded from the multi port manifold a guillotine type cutter is used to separate each dough piece from the continuous rope of dough being extruded. I wish there was a video of the operation to provide the "WOW" factor. They are not the first to use this kind of equipment as there is another major box store operation that has been using it for some time now. This is a good way to put pizza in perspective, and remember, this is just one of many operations just by Domino's and when you add in the multiplier of the other big box chains it becomes even more impressive, and this doesn't even count in the commissaries for the smaller chains, the independents, or the frozen pizza manufacturers. Kinda puts pizza into perspective.

American Style / Re: How Domino's Makes Its Dough Balls

Peter;

Again, I have to take the fifth as I'm still under contract with PJ's, but suffice it to say that among the big box store players, it might be a safe bet to say that they are all using the same dough concept (refrigerated or frozen) to provide dough to their stores. If one were to break from the pack the others would surely hold them up to ridicule in their advertising so in effect, they are locked into a dance with their competition. The smaller chains, be it national or regional, are not in this situation as they don't stand toe to toe in the ring against these big box chains, this allows them to do whatever works best for them and due to their smaller size, they seldom draw fire from anyone except maybe for a local competitor. As for the use of frozen

dough, it certainly is a big market so someone is buying it, you're right, it just isn't being advertised. Personally, when it comes to a pizzeria, I'm with you as I don't think it means very much to the average consumer if the dough that the pizza crust was made from was actually made weeks or months ago or just lastnight, instead, they are more interested in the taste, flavor and texture of the crust and how they perceive it. Frozen dough really isn't all that bad, but it can be improved upon, as I've mentioned before, commercially made frozen dough is made without fermentation or with limited fermentation as in the case of pre-proofed frozen pizza skins. I can't say if the flavor profile of the pre-proofed skins can be improved upon as we haven't done any work along these lines, but since they already do have some fermentation on the dough the flavor really isn't too bad. On the other hand, we have the frozen dough balls/pucks which for the most part do not have any fermentation so one of the things that we commonly do to improve the flavor is to remove the frozen dough from the freezer and allow it to slack out/thaw in the cooler/fridge overnight, then bring it out to room temperature for about 90-minutes, then place it back into the cooler where it will now cold ferment for 24 to 36-hours prior to use. When using this dough we manage it in the same way as we do fresh made dough that has been cold fermented for 24 to 36-hours. However, since most of the commercial frozen dough is made with a reducing agent to help reduce the mixing time of the dough it really doesn't hold up well in the cooler past the 36-hour mark (dough becomes too soft and tacky).

Dough Clinic / Re: Less Than % Statements

Dan:

The difference between slow or static freezing (0 to -10F) and blast freezing (mechanical -25 to -35F) or cryogenic (-45 to -60F) is to establish a smaller ice crystal size at the lower temperatures. The smaller ice crystal size promotes better yeast survival and also serves to protect the gluten structure to a great extent which allows these doughs to exhibit a much longer shelf life, typically 16 to 22-weeks as opposed to 10 to 15-days for the static frozen product. When an entire pizza is frozen the lower temperatures also serve to protect the integrity of the vegetable toppings as well. As for dough performance from dough that has been frozen in a static freezer (home freezer included) if the dough is used within the shelf life limitations (10 to 15-days) the performance of the dough is actually quite good, but beyond that time period the performance of the dough gets to be somewhat "iffy" until at about 30-days you will see a dramatic loss of consistent dough performance. I have always related frozen dough performance to the old question of "how strong is a chain" with the answer "no stronger than its weakest link".

Cracker Style / Re: Freezing Sheeted Dough

Nate;

More water (higher dough absorption) will, within reason, actually allow the crust to bake faster, and the more open crumb structure will create a better thermal break between the deck and the toppings resulting in a crispier bottom crust characteristic. If you want to have a crust that is softer and more leathery you might try forming the pizza skin with the used of a rolling pin. Use of the pin will to a greater extent, degas the dough, reducing the effectiveness of the thermal break and allow more heat to pass through the bottom crust where it will be dissipated as steam when it reaches the sauce and toppings which are all roughly 90% water. This results in a more dense bottom crust that is not baked out as well, and it has a thinner actual crust formed on it which begins to absorb moisture from the more moist inner crumb portion of the crust very quickly after baking resulting in a

tough, leathery eating characteristic. As for cracking of the crust, this is more common with a lower absorption dough. I don't think changing to an A.P. flour will help, but if you want to have a softer internal crumb structure and more flexible crust characteristic I would suggest increasing the fat/oil content of the dough to something in the range of 4 to 6% of the total flour weight.

General Pizza Making / Re: Pizza post bake

Nate;

Believe it or not, adding more water to the dough will actually provide for a crispier finished crust if that is what you are looking for. You best post baking results will probably be had by placing the pizza onto a screen immediately upon removal from the oven. This will allow the pizza to steam off, then transfer to a cutting block (I don't like cutting pans since a cold metal pan and a hot pizza = condensation. Even corrugated cardboard pizza circles make for a pretty good cutting surface, once cut, place onto a heated plate (remember condensation) or my personal favorite is a wicker plate basket with a paper plate. The paper plate is not conducive to forming condensation, it helps to insulate the slice thus keeping it hot longer than a metal serving tray would, and clean up is a snap.

General Pizza Making / Re: Pizza post bake

Peter;

I too was involved in that fracas. Our friendly, and good meaning Government tried to come up with a single criteria for the word "fresh". What initially came out of it was that the word "fresh" couldn't be used in the labeling of any food that had been processed in any way. Since freezing and baking were deemed to be a form of processing, fresh frozen would have been a thing of the past, as would fresh bread, infact, no bread could have been referred to as "fresh" since the evil act of baking is what stands between a piece of dough and "bread" as we know it. Thank God sensibility came to the rescue! Now we are struggling with menu labeling where those of self proclaimed intelligence think we should have to show the nutritional facts as well as the calorie count for an entire pizza, I don't think you will find too many people that will openly admit that it is their opinion that a whole 16-inch pizza is a single serving. Better to show the total for the entire pizza and then require showing the nutritionals for a single slice which can/will vary depending upon how many pieces the pizza is sliced into. Our argument is a box of cereal compared to a whole pizza, you don't show the nutritionals for the entire box, but instead just for an average (specified) serving size. Strange things happen when we ask to have something as simple as "fresh" defined by those who haven't a clue. Thank God for the review periods before these things are cast in stone.

Dough Clinic / Re: Less Than % Statements

Peter;

The rule is referred to as the 2% rule in that once the amount of an ingredient falls to a level of less than 2% (based on the product formulation) it is no longer required to be shown in the order of predominance. You will see this on a loaf of bread for example, where the label will read: contains 2% or less of the following... We use this as a tool for reverse engineering a commercial product just as you have done with the Domino's product using the 1% rule. Actually, truth be known, there is a greater level of formulation secrecy using the 2% rule as opposed to the 1.5, 1, or 0.5% rule. I cannot say too much about Domino's dough as I have worked with them extensively and I'm still under a nondisclosure agreement with them. In summary, all stated ingredients shown prior to the 1% cut off are shown in order of predominance, and any ingredients at or below the 1% cut off do not need to be

shown in their order of predominance.

For formulation purposes, salt is also a good indicator, if you think of an average salt level of around 2%, in this case any ingredient listed after the salt is most likely being used at a level of between 1 and 2% unless there is another ingredient between the salt and the 1% cut off.

Dough Clinic / Re: Less Than % Statements

All ovens are different, but I would start my endeavors with the stone located in a slightly lower position. This should give you stronger bottom heat while reducing the top heat which will help to control the top color of the pizza while being baked at the higher temperature.

Dough Clinic / Re: how to make puffy crust??

Darren;

Slow or static freezing of just about any type of dough is possible if you can live with a shelf life of 10 to 15-days, and in your case it looks like you will be well within the shelf life expectancy of your dough. Just formulate and process the dough in your normal manner, then form into pizza skins and place on screens or some other flat surface and freeze until solidly frozen. I like to allow for at least 90-minutes for this. Once frozen, the skins can be packaged with pieces of parchment paper separating the individual skins and placed into a plastic bag and then into a corrugated box for delivery to the place where you will be making the pizzas. For added insurance toss in a piece of dry ice before you seal up the case and drive over. When you get to your destination you can either separate the skins and place them on pans with a little peel dust and allow them to thaw overnight in the fridge, or you can keep them frozen until shortly before (about 1.5-hours) before you anticipate using them. Remove a frozen skin from the case and place it onto a surface with some peel dust or in an oiled baking pan if you intend to use one. then brush lightly with olive oil, tent with a piece of plastic and store at room temperature. The skins should be ready to go in about 90-minutes.

Cracker Style / Re: Freezing Sheeted Dough

Mark;

With such a short bake time I would open two skins at a time; open, dress and bake two skins, then repeat. The other thing you can do is to fully open the first two skins for immediate dressing and baking but only partially open the other two skins, say to about 3/4 of the desired diameter, then all you will need to do is to quickly finish opening the other two for a quick repeat performance. The last working of the dough to bring the last two pieces out to full diameter will do a lot toward evening out any changes that might have occurred as a result of the dough sitting out proofing for the additional time.

General Pizza Making / Re: How to hold multiple skins?

Doing things one step at a time, I would begin with increasing the oven temperature to at least 500F or as hot as you can get it, and allow at least an hour for the stone to heat up. How thick is your stone? Where is it located in your oven?

Dough Clinic / Re: how to make puffy crust??

Mark;

Rather than opening all four skins at the same time, why not just open them as you need them? As one pizza is baking you could be opening the next skin and beginning to dress it, providing you can bake multiple pizzas back to back in your oven, if you need to allow for some recovery time just don't open another skin until

you're ready to bake. You won't see as big of a difference this way as you would if you opened all four at the same time and let them set and proof while the other pizzas are being baked.

General Pizza Making / Re: How to hold multiple skins?

Usually the problem can be traced to insufficient dough absorption (you want to have a soft dough), but since there are so many other factors that can be involved, baking temperature, what you are baking on, dough formulation/recipe, dough management, and how you are actually opening the dough into a pizza skin it would really help if we could see these important aspects of how you are making your pizzas.

Dough Clinic / Re: how to make puffy crust??

Peter;

For all practical purposes, protein breakdown is somewhat similar if achieved by mechanical mixing or fermentation. Due to the effect of protease enzymes hydrolyzing proteins whereas mixing only breaks the protein chain (without destroying the integrity of the protein) at specific bonding points (which can be repaired through the addition of an oxidizer such as ascorbic acid) to the dough protein that is exposed to fermentation is actually weaker than that exposed to mixing. With that said, we commonly ferment a large portion of the flour (sponge) and add it back to the mixing bowl along with a smaller portion (25 to 40%) of flour and mix the dough to a desired level of development for bread, roll, sweet goods, and pizza production. Hence, there is no reason why if you had a dough that was mechanically overmixed you couldn't do just as you have proposed. The old ITT Continental Baking Company back in the 1970's and early 80's had a bread making process called the fatigue dough process that was very similar to this, but in addition to adding a small portion of flour back to the dough they also incorporated oxygen into the dough (remember oxidation mentioned above) by continuing to mix the dough at low speed in their horizontal mixers with the mixing bowl slightly open which caused the dough to sheet out over the agitator bars thus exposing the dough to air/oxygen, and the damage to the protein chain was repaired allowing the dough to be handled by their equipment without any problems. The reason for using this process is due to the fact that when you over mix a dough mechanically in this manner the protein can accept more water than it can when normally mixed to peak development, and this extra water is retained in the dough and finished product (bread in their case) so they got better yields in terms of loaves of bread from every 100-pounds of flour. \$\$\$\$ is a great motivator.

Dough Clinic / Re: How do I know when Gluten Development for pizza dough has occurred?

Mark;

You can't undo an over mixed dough, but worry not as it is essentially impossible to do by hand mixing. It is the under mixing of the dough that contributes toward that sought after open, porous internal crumb structure that is also important in achieving the crispiest crust possible. Using a mechanical mixer, if one mixes the dough to full development or even a little beyond full development, the greatest fault you are likely to encounter along your journey to making finished pizza is a bread like internal crumb structure. You can see this type of crumb structure in many of the frozen pizzas sold at your local supermarket. This is because most of the manufacturers mix the dough and are dressing the skins in an hour or less so all of the development must come from mechanical dough development aided occasionally by the addition of L-cysteine or glutathione (dead yeast). If you were

to dramatically over mix the dough using a planetary mixer, or any other type of mixer for that matter, the dough would take on a glassy appearance due to water being released from the broken down protein structure, it would be stringy, sticky and not at all pleasant to work with. As the dough would ferment the proteins will be further broken down and a portion of the starch would be hydrolyzed into sugar by the enzymes present in both the yeast and the flour. The resulting fermented dough would be even softer and stickier than it was at the mixer. In the baking industry the bakers have an expressing for this, they call it "elephant snot" because when viewed from their perspective in a large (1,000 to 2,500-pound capacity horizontal mixer) the dough (if you want to call it that) is hanging off of the mixing agitator and the top of the bowl in long sticky threads, hence their name for it. From a home making pizza perspective I guess you could possibly over mix the dough if you were to use something like PZ-44 which is the reducing agent L-cysteine in a whey carrier at a level beyond the recommended dosage. In this case the L-cysteine would chemically cleave the protein chain to give you the same effect as a grossly over mixed dough in a matter of minutes, regardless of how the dough is mixed. If you feel adventuresome and want to see some of this yourself, you might try adding some instant meat tenderizer to the dough. The meat tenderizer should show papain as an ingredient and papain is very effective at breaking down protein, hence its use as a meat tenderizer. I did work using papain as a reducing agent in bread dough back in the 70's and I well remember ending up with doughs that could literally be poured out of the mixing bowl until I got the dosage correct.

Dough Clinic / Re: How do I know when Gluten Development for pizza dough has occurred?

Mark;

In most cases when describing kneading of the dough one is instructed to knead the dough until it have a smooth, somewhat velvety appearance, and while this is not indicative of the same level of gluten development, it works quite well as a visual indicator. With hand kneading, another method that works well for me is to just knead the dough until it all comes together in an elastic ball, divide or scale the ball into the desired size/weight pieces, and allow to cold ferment for 24-hours, then remove from the cooler/fridge and allow the dough to warm at room temperature until it reaches 50 to 55F (about 2-hours) then knead each dough ball until it has a smooth appearance, place back into the fridge until about 2-hours before you want to use the dough to make your pizza skins. Remove from fridge, allow to warm to 50 to 55F, open into pizza skins by your preferred method, dress and bake. I've found that this procedure works really well for people without the arm strength needed to thoroughly knead the dough. I teach it to a lot of the rural farm families in my area where they also use the process to make bread too.

Dough Clinic / Re: How do I know when Gluten Development for pizza dough has occurred?

Mark;

There are two basic ways to tell when pizza dough is properly mixed when the dough will be managed through a cold fermentation period of at least 24-hours in the cooler/fridge.

The first, and easiest to describe is to watch the dough as it mixes, at first you will see a dark colored dough with a rough appearance. As the dough continues to mix/develop the color will change to a brighter, yellowish color and the dough will begin to take on a smoother appearance in the mixer. This is an indication that you are getting close to correct development. Continue mixing just until the dough

develops a smooth skin in the mixing bowl, at this time the dough is best described as having a smooth, satiny appearance. You're now done mixing.

The other method is to take a piece of dough, about the size of a large hen's egg, and loosely form it into a ball, bring your hands together with your finger tips curled inward. Your finger tips should now be touching, position the dough ball on your fingertips and bring your thumbs down onto the dough ball, locking it in place on your fingertips, now roll your hands apart as if trying to bring the second joint of each finger into contact with one another, the dough will stretch between your locked thumbs, check the dough to see if it tears, if it tears the dough will require additional mixing time, but if it stretches without tearing the dough is properly developed. Like I said, this is not the easiest procedure to describe, but it works well as does the first method described above.

Dough Clinic / Re: How do I know when Gluten Developement for pizza dough has occured?

I checked off 36 out of 80 and was rated as "Pizza Champion".

Chitchat / Re: How Extreme Is Your Devotion To Pizza?

I just recently bought a new slicer to replace my old cheapie slicer. I found one that was rated as "commercial" whatever that means at Cabela's. The list price was around \$300.00 but with their instore sale I got a \$50.00 discount on that price. The slicer appears to be well built and has a 9-inch blade. So far the only thing I've been cutting with it is partially frozen venison for making jerky, and I've only had it a few months so I can't say how well it will hold up to that kind of abuse over the long haul. My old cheapie model, also from Cabela's cost me about \$100.00 seven years ago and the gears finally gave up, and the cost to replace them was nearly the price that I paid for the slicer to begin with. Until those gears gave in, the old slicer worked just great slicing many pounds of partially frozen venison every year. With that said, slicing bread, cheese, and refrigerated meat should be a snap.

Prep Equipment / Re: home use slicer - Any suggestions?

We had a project many years ago where we looked at ways to make the coating crispier on fried chicken. We used a pressure fryer for all of our testing so I don't know if the results hold true for a regular open fryer or not. We found an almost linear relationship between the protein content of the flour used in the coating and the crispiness of the finished chicken pieces. The lower the protein content, the softer the crispy coating became. When we used a very high protein content flour, around 14% the finished coating went into the range where it was no longer rated as crispy but rather hard and vitreous, so hard that you had to grind the coating on your molars in order to eat it.

Off-Topic Foods / Re: The mysteries of Fried Chicken

Chaze;

If he will swap you straight up that is a sweet deal. You won't be disappointed.

Dough Clinic / Re: Dough climbing the dough hook

The "J" hook is probably the poorest hook design one could come up with, with a smaller size dough the the dough would just grab onto the hook and go for a free ride without getting mixed, with a full size (large) dough the dough would get more mixing on the outer position of the hook and a lot less on the inner and top portions, plus the aggravating need to cut the dough off of the hook periodically to get a uniformly mixed dough mass. The reverse spiral mixing arm is a real sweetheart. Small size doughs are easily mixed without the dough climbing up on

the hook to get a free ride, and when mixing large size doughs there is no longer any need to stop the mixer to either turn the dough over or cut it off of the hook, what a blessing!!!

The K-5-A as well as the N-50 (industrial version of the K-5-A) were originally equipped with a plain, and rather straight "J" arm type of hook which was a real bummer, but you can buy replacement reverse spiral mixing arms for these mixers too, but due to their rather smallish diameter they do not perform as well as a spiral mixing arm on any of the larger size mixers.

Dough Clinic / Re: Dough climbing the dough hook

Darren;

Great "fish mouthing", those are those large football shaped holes so characteristic with a cracker type crust.

Well done!

Cracker Style / Re: 1st attempt at Cracker style crust

When I'm opening the dough to make the skin I try not to touch the edge portion unless I need to address some unwanted bubble(s), then when I'm dressing the skin I like to keep the sauce 1/4 to 1/2-inch away from the edge of the skin, this allows the dough to rise more in that portion, creating a nice raised edge on my finished pizza. You can control the size of the raised edge by adjusting how much of the edge of the skin you leave untouched, and by how close to the edge you apply the sauce. As for application of toppings I always load the skin more out toward the edges and lighter in the center section. This is for two reasons, one, the toppings will flow toward the center as the edge of the crust raises during baking and two, the lighter center loading allows the center of the pizza to get a better bake resulting in an overall crispier bottom to the pizza (helps to eliminate the droopy center or point of the slice). This puts me right in the center of the pack with the rest of the responses

Newbie Topics / Re: Basic rim forming question

Chaze;

Cold fermenting gives you a different flavor profile in the finished crust than warm/room temperature fermentation does. This is why so many pizzas are made with a cold fermented dough. Warm fermentation seems to produce a greater amount of alcohol and gives a flavor that is more associated with white bread than artisan breads or pizza crust. Plus, warm fermented doughs are a lot more difficult to manage properly than cold fermented doughs.

New York Style / Re: Experimented with Full Strength dough in wfo this weekend.

Walter;

Have you looked at using a splash cover? They are not perfect, but they do reduce a lot of the splash out and to some extent they also control some of the annoying dusting that comes when making bread and pizza doughs.

There are also some little tricks that I've picked up on over the years to reduce dusting too, for example, if you make a sponge dough, rather than putting the sponge in first, and the dry ingredients on top of it, add the water first, then add the dough side ingredients and mix at low speed for a few seconds, then add the sponge and mix as normal. For pizza doughs add the water first, then add the flour and other dry ingredients, a few seconds of stir or jogging will significantly reduce dusting, especially with a splash cover.

Dough Clinic / Re: Dough climbing the dough hook

Scott seemed to hit the nail on the head. The word "style" is to mean in the way of, not specifically copying or emulating. This point was driven home a number of years ago when large commercial pizza manufacturers, making the kind pizzas you buy in the supermarket, got into a labeling issue when they identified their pizzas as stone baked when there were no stones in the oven while others referred to their pizzas as stone baked style or hearth baked style. What came out of this legal wrestling match was that if the word style was used in the name designation (stone baked or hearth baked style) the pizzas could be baked in any type of oven, but if the name designation said (stone baked or hearth baked) the oven in which the pizzas were baked had to have a stone hearth. That word "style" is indeed a mighty word. So, now for my question, would someone please tell me there the following are made: Moon Pies, Mars Bars, French Fries, French Bread, Danish Pastry, French Crullers, English Toffee, etc.

New York Style / Re: New York Style Pizza Not New York Pizza? Why???

Chaze;

There are three versions of the 20-quart Hobart bench top mixer, the A-200, the AS-200 and the AS-200-T. The only difference is that the "S" designation is for "stir". and the "T" designation stands for "timed" as this mixer has a timer. The "S" designation mixers have a very slow (half speed) stirring speed that might be useful when making a bowl of cake batter to prevent splash out, or to prevent dusting such as is commonly encountered when a fermented sponge is placed in the bowl followed by the remainder of the flour and dry ingredients. However, Now, I don't know if this is sanctioned by Hobart, but when I'm faced with these issues and all I've got is an A-200 I just quickly flip the switch between on and off, like switching a light switch for a few revolutions and then mix in low (#1) speed until I can go to a higher speed without dusting everything within a 5-foot radius of the mixer. Don't worry about looking for an AS-200, you already have a gem of a mixer. By the way, a slightly smaller, but equally as good of a mixer is the Hobart A-120/AS-120 mixer. This mixer is just a slightly smaller version of the A-200 having a 12-quart bowl capacity. Reverse spiral hooks are available for this mixer too as are a wide assortment of other mixing agitators, and if your mixer has the optional attachment head, you can buy a "pelican head" attachment for cutting, slicing, etc. Due to the great number of attachments available for these mixers, I have been known to refer to them as the grown man's, or woman's Barbie Doll.

Dough Clinic / Re: Dough climbing the dough hook

CMWR;

In addition to what is shown in my bio, I also have a very good friend here in Manhattan, Kansas. His name is Adam Peyton, Adam is the owner of AJ's New York Pizza (3rd and Poyntz Ave.). AJ's is a slice store that is based on one of my articles titled: A New Approach to Pizza by The Slice. It is a slice different from any slice you might have ever had before. I developed the process a number of years ago after sampling slices across the country and coming away totally unimpressed. I developed the process to incorporate everything most of us like in a pizza, crispy, fresh, hot, assortment of fresh toppings, and still meeting the common denominator of a slice store, relatively fast. Adam now has a total of three stores and is doing very well. He was voted best pizza in Manhattan a couple of years ago, how many slice places would qualify for that honor? And yes, as a college town, we do have a lot of pizzerias both chains and Indies (independents), but keep in mind that this competition wasn't open just to the pizzerias, it was an open competition so it included even home prepared pizzas!

If you make it here to Manhattan, Kansas be sure to look me up, my home e-mail address is <thedoughdoctor@hotmail.com> and I'll treat you to some of Adams pizza.

General Pizza Making / Re: How do you get the pizzas to slide off onto the grill?

We have used up to 10% liquid egg white in formulas for hard rolls, which is very similar to a basic pizza dough formula, but we have never seen any differences in dough rheology, but the finished rolls do have an improved crust color and sheen along with a uniquely crispy outer crust. If you want a dough to open easier you can add L-cysteine (PZ-44), glutathione (dead yeast), onion and/or garlic powder, and to some extent plain milk will soften the dough too making it easier to open. This is why so many references call for the milk to be scalded/boiled before using it in baking. You could also experiment with instant meat tenderizer which typically contains papain.

Dough Clinic / Re: Egg white in pizza dough

When I bake my pizzas on the grill I like to start out using a well seasoned pizza screen until the crust begins to set, about 90-seconds, then slide the dressed pizza skin onto the grill to finish baking. I've found that this also helps to control the dough from sagging between the grill grates.

General Pizza Making / Re: How do you get the pizzas to slide off onto the grill?

Chaze;

You're using an A-200 or AS-200/20-quart mixer. Congratulations for having a great mixer!

The problem you are experiencing stems from the fact that you are using a regular "J" hook instead of a reverse spiral dough mixing arm. The reverse spiral will completely eliminate the problem.

Dough Clinic / Re: Dough climbing the dough hook

M;

Grandma Lasagna (another story) used to make what she called tomato pie for sharing (actually trading) with other Italian neighbors where she lived (Roseland, Illinois a south suburb of Chicago). Her pie was a lot like what you have described. She made a very plain dough formulated as follows: Ceresota Flour (any bread type flour will also work) 100%, Salt: 3%, Olive oil 5%, ADY 1% (I know it's high, but that's what I calculated from her recipe), and 65% warm (100F) water. She would put the ADY into the water to hydrate for about 10-minutes, then add all of the other ingredients and begin mixing (actually stirring) with a wood spoon. When the dough was too thick to continue stirring she would scrape the dough out of the bowl onto a floured counter top and begin kneading the dough until it became somewhat elastic, about 10-minutes. She would form the dough into balls, dust with a little flour and cover with a towel to rest until when she poked a finger into the dough the impression would remain in the dough. The dough would then be rolled out to fit into an oiled (olive oil) rectangular shaped pan about 1.5-inches deep and dark in color. The dough was then fit into the bottom of the pan. The pans of dough were set aside to proof for about 45-minutes and she would press and stretch the dough to fully fit the bottom of the pan. The pans of dough were once again set aside to rise, this time until the dough was about half way up the side of the pan (45 to 60-minutes), the dough was then sauced using nothing but tomato sauce (She used Contadina, what can I say?) and lightly sprinkled with just a kiss of

dried basil and baked in her home oven at 425F, first in a higher rack, then after about 15-minutes in a lower rack position until the crust was a beautiful golden brown and crispy and very light. Occasionally, she would change the game by adding a few pieces of sausage or a few shavings of Parmesan cheese to it just before baking, and as she always did, she gave it a sprinkling of EVO as it came out of the oven.

I can still taste that light crispy crust with a little tartness from the tomato sauce. When I make it at home for my family today I always make the version with a few shavings of Parmesan cheese.

I'm sure other readers will have other versions, but this is what I got when I was dating my wife and we went to visit her grandparents.

Dough Clinic / Re: Ligura Bakery Focaccia

Mitch;

Since you are mixing your dough by hand it is suggested that you pre-hydrate the IDY in a small amount of 95 to 100F (measured temperature) water and allow it to activate for 10 to 15-minutes prior to addition. I like to add the pre-hydrated yeast suspension to the regular dough water when I'm mixing the dough, but in your case you can split it up as you have been. For example, if you hydrate the yeast in 10-ounces of water, and then weigh out 1-ounce you will have the 1/10 of an ounce of yeast you are looking for.

Dough Clinic / Re: Ingredients

Mitch;

To answer your question, let's look at each ingredient one at a time.

Flour: Provides structure in the form of gluten that is developed biochemically (through fermentation) as opposed to mechanically as with the use of a mixer or extensive kneading. In general, the higher the protein content of the flour, the stronger and more elastic the finished dough will be, all things equal.

Water: Hydrates the proteins (Glutenin and Gliadin) in the flour to form gluten. It also allows for hydration and dissolving of other ingredients in the dough. Water provides extensibility to the dough allowing it to be stretched and pulled into a defined shape. Water also adds fluidity to the dough allowing it to rise both during fermentation and also during the first minute or so in the oven (oven spring) which provides the desired open, porous structure so often sought after in rustic breads and pizza crust. The water also provides for part of the leavening process in the form of steam vapor.

Salt: Provides for flavor in the finished crust. A finished product that is too low in salt will have a somewhat "starchy" taste. Salt also strengthens the gluten network allowing the dough to be stretched and pulled without tearing (doughs made with insufficient or no salt are somewhat sticky and tend to tear easily, this is why exhibition doughs are high in salt). Salt also helps to regulate the rate of fermentation, too little or no salt caused the dough to ferment too fast or at an inconsistent rate while excessive salt will cause the dough to ferment slower than normal or desired.

Oil/Fat: The fat content in the dough provides a level of lubricity to the dough allowing it to be more easily stretched and stretched further without tearing. It also improves the flavor of the finished crust due to the fact that the fat will hold some of those great flavors released from the pizza while it is baking. Fat can also impact the mouthfeel of the finished crust, making it softer and richer tasting. In certain applications fat can also impact the way the crust reacts with saliva during mastication. In this case the fat will retard the absorption of moisture creating a finished product impression that the product is less dry. Without any fat the crumb

portion readily absorbs moisture from the mouth creating a dry eating impression. Fat is also an enriching ingredient, meaning that when fat is present the consumer perceives that the product provides a richer, more desirable eating characteristic than the same product made without fat. Lastly, fat helps to provide for a more tender eating characteristic. There is also some theory that both fat and sugar are craved by the body due to an inherited (from our cave dwelling ancestors, not uncle Guido) survival instinct. We like to simply call it the "fat gene". Now you know why all those fat free products are now either low fat or gone from the market entirely.

Sugar: Sugar is a source of nutrient for the yeast to feed upon. The yeast contains enzymes (amylase) which help to convert starch (present in flour) to sugars that can be readily metabolized by the yeast, but this can be a slow process so the flour is sometimes "malted" to provide additional amylase, or we may add the malt in the form of "diastatic malt", in any case we are just helping the yeast to convert starch to sugar. We can also add sugar directly to the dough too. With exception to lactose, most common sugars that we work with are able to be broken down into sugars that can be metabolized by the yeast. Any non-metabolized (surplus) sugar present in the dough will contribute to both crust color and flavor of the finished crust. Some forms of sugar, such as honey, molasses, or non-diastatic malt can also provide a unique or distinctive flavor to the finished crust.

So, why all of the differences? Well, it all depends upon what you want from your pizza crust. Remember, the true definition of a pizza crust is that of a relatively flat, leavened or unleavened bread to which various toppings are applied prior to baking. That's a pretty wide description and there is an equally wide variance in formulations to cover all those bases.

Dough Clinic / Re: Ingredients

Now for the bad news, they're too pretty to use! LOL :-D

Those might be the prettiest peels I've ever seen. They would make a great gift for any pizza lover.

Have you given any thought to selling them over the internet?

Stones/tiles/steel, Pans & Accessories / Re: My New Peels

Minn;

In addition to what Peter has said, PMQ <www.pmq.com> also has contacts in China as they do a pizza show there annually so they might be able to provide some additional input based on their contacts in China. I would suggest that you contact Steve Green directly at <SG@pmq.com> Steve is the publisher of PMQ Magazine so he should be able to direct you to their Chinese contact person.

Shop Talk / Re: open a pizzeria in Shanghai either

Gig;

No, using our smaller bench top mixers and our larger 80-quart mixers we don't see any difference in mixing time with only 1% difference in protein level. This is not to say that there isn't a difference in mixing time to achieve full gluten development, but since pizza dough is seldom, if ever, mixed to full gluten development we just don't see any differences in those undermixed pizza doughs. Bread dough, on the other hand, is normally mixed to either full development or a little past full development depending upon the type of bread being made so in that case we sometimes even see differences between two different flours of the same protein content.

Dough Clinic / Re: Can I use pizza flour to bake bread?

Leonard;

If I remember correctly, I think P.H. uses a reman (re-manufactured) tomato product in their sauce. A characteristic of a reman product is the very deep, dark color and a somewhat sweeter taste. I believe that Contadina brand is a reman product so you might try developing your sauce around their tomato sauce or paste.

American Style / Re: Leonard's Attempt at Chain-Style Pizza (Split Topic)

For over a hundred years now, bakers have used potato as a basis for their SD starters. If you Google "potato starters in bread production" you will find several options for using potato flakes as the basis for a S.D. starter.

Gluten Free / Re: Sourdough Starter

On a weight basis, use 5-parts water to one part dry yeast.

Neapolitan Style / Re: Np recipe using ADY yeast?

WNORN;

Do you have any idea of what the protein content of the two flours are? Typically, but not always, flour that is sold as "pizza" flour is higher in protein content than a typical bread type flour. High gluten/pizza flours can run from 12 to 14.5% protein content and bread flours can run from 10.5 to about 12.7%. Without knowing the protein content of the two flours, I would begin by just replacing the bread flour with my pizza flour and see how the dough and finished product compares to what you have been getting when using bread flour to make your bread. If the difference is significant enough to warrant making a change to the dough formulation or process we will then know what characteristics need to be addressed and also have some idea as to what magnitude.

Dough Clinic / Re: Can I use pizza flour to bake bread?

Sure, not a problem using ADY. Just make sure you rehydrate it in a small amount of 100 to 105F water for about 10-minutes before you add it to the dough. As to the amount that you will need to use, I would start at about 0.25% of the total flour weight. Regarding the use of a bread making machine, keep in mind that pizza dough is not mixed the same as bread dough is. It is mixed only about 50% of what a typical bread dough is. The under mixing of the dough is one of the factors that contributes to the desired open, porous structure of the baked crust. After mixing, get a temperature on the finished dough, you will be looking for something around 85F. I like to divide the dough into individual balls for each pizza. About 9-ounces for a 12-inch pizza is about right. Then lightly oil the dough balls and place into individual plastic bags (bread bags work well) twist the open end to close and tuck the pony tail under the dough ball as you place it into the fridge. Allow the dough to cold ferment for at least 3-days, then remove the dough from the fridge and allow the dough to rest at room temperature for a couple of hours before opening the dough balls into pizza skins. For this type of crust it is recommended that you open the dough balls by hand rather than using a rolling pin.

Neapolitan Style / Re: Np recipe using ADY yeast?

Also, be sure to let us know how you are shaping the dough into pizza skins. Do you hand stretch it or do you use a rolling pin to open the dough. When it comes to trouble shooting a pizza problem there is no such thing as TMI.

Dough Clinic / Re: Dense dough - any tips to make it light and fluffy?

Depending upon its construction, that bamboo peel might actually be better than

the other more traditional wood peels which exhibit a tendency to split and/or warp over time. Do not wash it, just wipe it down. I normally don't like to oil that type of peel as it can make it more difficult to peel the pizza into the oven, instead, I like to burnish the peel with a fine grind corn meal from time to time. Don't worry about stains on your peel either, they just give it more character. If you like it, and it works well for you apply the rest of your money toward buying a metal blade peel for removing the pizzas from the oven.

Stones/tiles/steel, Pans & Accessories / Re: Need a first peel, fast.

Walter;

When using any kind of bulk fermentation keep in mind that temperature control of the dough is absolutely critical to getting consistent dough quality. This is probably why you find that the dough is too tough to ball at times. The room temperature will have an influence on the actual finished dough temperature but it really won't have much influence on the way the bulk dough ferments. Since you are using a straight dough process the formula for desired water temperature is $3 \times$ desired water temperature minus the sum of the flour temperature, room temperature and friction factor. You will need to find the friction factor for YOUR dough in YOUR mixer. To do this, mix a dough using your coldest tap water (record the temperature of the water). Then mix the dough in your normal manner and record the finished dough temperature. The formula for friction factor is $3 \times$ the actual dough temperature minus the sum of the room temperature, flour temperature and the water temperature. The resulting number is the friction factor that you will need to plug into the above desired water temperature calculation. This calculation works great and it will consistently get you to within 1F of your targeted temperature. Remember, the flour and room temperatures will probably change and will be used in your calculation for desired water temperature but the friction factor will not change, it will remain a constant so you can just plug your number into the equation each time. keep in mind that if you make a significant change to the mixing time or size of the dough the friction factor may need to be recalculated.

New York Style / Re: Bulk Cold Fermenting Experiment

There is the NAPICS Show in Columbus , Ohio every year around the end of January or mid-February. I used to participate in this show and I can say that it is a very good show to attend. Typically around 2,000 attendees, lots of vendors, as well as seminars and hands on instruction. The show is a lot cheaper than P.E. as are the seminar sessions.

To get more information on the NAPICS Show (North American Pizza and Ice Cream Show) contact the Ohio Restaurant Association for next years dates and details.

Events Calendar / Re: pizza expo

Norma;

No I didn't. I just caught the one that is posted above. With my very heavy and tight travel schedule right now (will continue through the entire first quarter) I don't have time to go back and read all of the earlier posts all the time. You are absolutely correct, it is a big thing to go from home pizza making to making pizza in a store. Anymore, I don't even encourage anyone to practice making pizzas at home in preparation for their store because so many things will ultimately change unless they have a taste for home made pizza. What a lot of people don't realize is that you can get away with a lot more in your home kitchen than you can in your store where you will be forced to crank out pizzas faster than leaves falling off of a tree in the fall, plus you are tasked with managing a lot more dough than just a few

dough balls, and the end pizzas all have to be of consistent quality if you expect to get a good price for your pizzas. Right now I'm working with a company that is expanding from just a couple of stores to over 50 and now they have discovered that what they were doing previously in those two stores cannot be effectively managed across the number of stores they already have much less 50 stores.

Tom Lehmann/TheDough Doctor

Dough Clinic / Re: Thin and flexible dough

Shari23;

You might try this:

Change your flour to a stronger, bread type flour such as Pillsbury "Bread Flour" available at most supermarkets. This flour has about 12% protein content. To the flour, add 1-tablespoon of wheat gluten (also available at most supermarkets). If you can't get the gluten, don't sweat it.

Adjust the water temperature to 105F.

Put the active dry yeast into the water and stir well, then set aside for about 10-minutes, or until you see bubbles forming in the yeast suspension.

Stir the yeast suspension and pour into mixing bowl.

Add flour and remaining ingredients and begin mixing the dough in your normal manner.

Immediately after mixing, form the dough into a ball, lightly oil it and place it into a bread bag. Twist the open end into a pony tail to close it and tuck the pony tail under the dough ball as you place it into the refrigerator. Allow the dough to cold ferment overnight. The dough can be used over 24 to 48-hours. To use, remove the dough from the fridge, and allow to temper AT room temperature for about 2-hours, then turn the dough out of the bag into a bowl of dusting flour and open into pizza skin(s) for dressing and baking. Bake on a preheated stone in a HOT oven. You may need to experiment with the position in the oven.

Dough Clinic / Re: Thin and flexible dough

Claudebo;

It sounds like you put the dough into the containers, sealed them closed and then went to the refrigerator. This would create a dead air space around the dough thus insulating it from the cooling air and allowing the dough to continue rising. Due to the heat of metabolism the dough will actually continue to gain heat, thus further speeding up the fermentation process.

Dough Clinic / Re: what should I do pls

Chet;

Look on the bag, it should show the nutritional composition of the flour. What you are looking for is protein. If it shows 9-grams protein per 100-gram serving the protein content is 9%. If it shows something like 4-grams per serving and the serving is defined as 50-grams you would have 8% protein content.

If it doesn't have any information on nutrimetals you will need to either Google the product/manufacturer or contact the manufacturer/distributor directly.

Dough Clinic / Re: Katy's Kitchen all purpose flour

Jon;

Actually, the moisture in your fat is desirable as it provides for enhanced pocket formation within the crumb structure resulting from the vaporizing of the water in the fat. This is how puff pastry is made. In fact, the hard fat flakes that Norma is working with used to be available in three different forms, plain (100% fat); hydrated (with water) and nitrogen infused.

Norma, if you are reading this, please resend me your mailing address as I have some more material on hard fat flakes to send to you.

General Pizza Making / Re: The Fat Flake Pizza Dough

Bob;

I'd like to say that I have a good low carb alternative for a pizza crust, but I don't so I can't. I never bought into the low carb thing of years past. Some things are just intended to be made with carbohydrates and I believe pizza is one of them. When people used to ask me about a low carb alternative to their existing crust my stock answer was to find a decent low carb crust and buy it (I had to really lower my bar to buy one and then I still didn't like it). My other answer was to simply make the thinnest pizza skin possible, that way it will still taste like a pizza crust but contribute fewer carbohydrates. One of the things I experimented with along these lines was a yeast free crust. What it boils down to is to make your favorite dough without yeast. You will probably need to adjust the water/absorption to achieve a dough consistency that will allow you to pin the dough out. After mixing, scale and ball the dough, and set aside to rest for about 15-minutes, then pin the dough out very thin and trim to desired size. Place the skin on your preferred baking surface and parbake (the crust will bake out firm) immediately dress as desired and place back into the oven to finish baking. Sorta like pizza on a cracker, but still better than the other "twig and leaf" renditions that I found being touted as so great.

If all of this sounds familiar it is because it's only half a bubble off of making a pizza on a tortilla skin, maybe a little thinner.

Chitchat / Re: My Pizza Calories,... kind of explored

If your dough has any oil it don't forget to include the calories (9-calories per gram) from it too. If you want to get into "healthy" pizza you can blend your existing cheese 50/50 with a tofu based cheese product ("0" cholesterol) to get a 50% reduction in cholesterol from the cheese component, then you can explore poultry sausage (actually pretty good). If you're going to Pizza Expo you should be able to find to find some there to sample. In some supermarkets you can find cholesterol free cheese product from Galaxy Nutritional Foods which can be blended with your regular cheese. Or for toppings just stay with the veggies, or if meat is on the menu use skinless chicken or fish/seafood. It sure beats eating only a single slice! :)

Chitchat / Re: My Pizza Calories,... kind of explored

A steel grate doesn't have much capacity for storing latent heat, instead it allows the pizza to bake by allowing the heat to pass right through it to the dough. A solid stone or heavy steel deck can store latent heat and quickly transfer that heat to the pizza that has been placed on it so you actually end up getting a better bake if done right. Another way to look at it is like this;

You can put your hand inside of a 600F oven without getting burned...I do it all the time, just don't touch anything while you're in there.

Using that same oven and temperature, put a solid stone deck in it and allow it to fully heat to oven temperature, now if you were to touch that stone you would instantly get a burn. This is rate of heat transfer. Air is a poor transfer medium while steel, stone, water or oil are all much better and a lot more efficient. A couple of things that need to be considered with a solid deck, it must be sufficiently heavy to be able to store sufficient latent heat to provide heat to the bottom of the pizza during the entire baking cycle, and you must allow sufficient preheat time to allow the surface to absorb as much heat as it can (this could take the better part of an hour).

New York Style / Re: How is Stone Better than Steel Grate?

Morten;

I like to set my fridge to operate at 36 to 38F (2.2 to 3.3C)

Dough Clinic / Re: refrigerator temprature

How much does your dough rise during the cold fermentation period?

Dough Clinic / Re: Newbie - dough too thick

Gluten quality is influenced by temperature: At temperatures above 90F the protein/gluten begins to weaken.

As fermentation progresses the byproducts of fermentation exhibit a pronounced weakening effect on the protein/gluten: The main byproducts of fermentation are acids (acetic, lactic and propionic), alcohol, and carbondioxide. Of these, the acids have the most pronounced impact (weakening) on the gluten. Additionally, enzymes present in the yeast (amylase and protease) will impact the gluten structure. The amylase hydrolyzes starch releasing water into the dough that makes the dough feel softer, and possibly less elastic, while the protease enzymes hydrolyze the proteins resulting in a significantly weaker gluten structure.

Time is also an important element too, especially when it comes to fermentation. The longer a dough is fermented the more impact the fermentation will have upon gluten strength. Since temperature is also an element of fermentation, a dough that is fermented at a higher temperature, even though for a shorter time, can have a similar degrading effect upon the gluten due to the increased speed at which fermentation is progressing at the elevated temperature.

Mixing, especially high speed mixing can impact gluten strength by over extending the protein to the point where the bonding points between the proteins begin to break (if you mix dough in a food processor long enough you can see this).

Fortunately, these bonding points can be repaired by oxidation, such as adding ascorbic acid to the dough, or even by just allowing the dough to mix at low speed for a few minutes followed by a short rest period.

So, just how long will the gluten remain in tact in the dough structure? Technically that cannot be answered unless you know what the variables above are, but from a realistic approach in home made pizza dough, 4 to 6-hours would be a good guess, after that, you will probably see the dough collapse. At that point you can simply rework the dough back into a ball to restrengthen the gluten and have another go at it, but this time it will take less time than the first, probably something on the short side of 3-hours. As you continue this process you will reach a point where the acid content and the effect of enzymes on the gluten will either destroy the gluten, or weaken it to the point where it is more like a wet dish rag than a pizza dough. This is why we refrigerate or cold ferment the dough and we limit the amount of flour used in the preferment be it a sponge, poolish or sour as the raw flour added provides sufficient gluten strength to the dough to allow us to make whatever products we are making.

I tried to keep this in very general terms to keep it easy to understand, hopefully I haven't added to any confusion.

General Pizza Making / Re: duration of gluten build and hold?

Norma;

Hard fat flakes are (I'm going to use a bad word her, so look away in you will be offended) heavily "HYDROGENATED" fats that due to the hydrogenation process are now very hard, much like soap flakes in both size and appearance (do you remember American Family soap flakes?) I'm dating myself here and anyone else

who admits to remember them. These hard fat flakes are added to the dough in much the same manner as raisins are added to a raisin bread dough. The result is a mixture of fat flakes and dough which imparts the appearance of a laminated dough. The BLITZ method of making pastry calls for taking butter and cutting it up into small pieces, about the size of a cherry pit on the small end and about the size of the cherry on the large end. The butter is then refrigerated to completely harden it, the dough is mixed in the normal manner and about 5-minutes before the mixing is complete the frozen butter is added and mixed just to distribute the butter pieces throughout the dough mass. The amount of butter added to the dough in this case is the same as the amount of roll-in that would typically be used in making Danish, about 20 to 25% of the dough weight before addition of the butter. The dough is then given one or two foldings for lamination and the process is complete. This eliminates the need to roll the dough, add the roll-in fat, fold the dough, rest the dough, roll it again, give it a laminating fold (3-fold or 4-fold), resting the dough, rolling it again, give it another laminating fold, rest the dough, and then take it to the bench for forming into pastries. As you can see, this is a lot of work as others here have already alluded to. I'm sure you can Google the process for more details. If anyone is looking for the hard fat flakes I think Bungee (Kankakee, Illinois) is still a supplier as is ConAgra Foods.

Dough Ingredients / Re: Special technique for this pizza crust?

Just to add a little fuel to the fire, a number of years ago a number of wholesale pizza manufacturers were offering pizzas made on what they called either a croissant or Italian pastry type of crust. I've got slides of it in my old pizza presentation materials. When we replicated the crusts we were able to do so in a manner already described, that is by sheeting the dough thin, brushing it with a very light coating of oil and then folding the dough to get the laminations. This was repeated a number of times until the finished crusts had a similar appearance, much like the pictures provided. We were also able to replicate the crust characteristics using what is called a dry laminating procedure which is how saltine crackers are made. The dough is sheeted very thin, allowed to dry/skin over (with the help of IR heaters and fans) and then folded/laminated to achieve the desired internal structure. The last method we used was to incorporate hard fat flakes into the dough which also worked very well. By this method the dough is made a little softer than normal and hard fat flakes are added to the dough during the last few minutes of mixing, the dough can be used as it is, but best results were had when the dough was given a single lamination. If anyone ever spent time working in a retail bakery you might recognize that method as the "blitz" method on making pastry dough.

One of these methods was so successful at replicating the target product so as to earn me a visit by two corporate attorneys representing the company producing the target crust. No, they did not have a case and I was not sued for giving away their trade secrets, but in view of the attention I drew from them, I must have been awfully close to what they were actually doing.

Dough Ingredients / Re: Special technique for this pizza crust?

I'll be there too as I'm on the program. My presentations are titled Time With The Dough Doctor, Tuesday, March 25 at 4:00 p.m. until ??? Then again on Wednesday, March 26 at 4:00 p.m. until ??? These are sometimes marathon sessions so we never know what time we might be asked to leave the room.

Pizza Expo is a great opportunity for anyone thinking about opening a pizza store in the future, or looking for reasons not to. You can easily get both perspectives from the many attendees and participants. And then there is all of the equipment

and ingredients, just mind boggling! Be sure to bring along an extra bag to carry back all of the literature you will pick up on the show floor. I know many of you are interested in different flours, all of the flour suppliers (even Caputo) will be there to talk to you and give you literature on their many different types of flour available. Also, if you get a chance, try to sit in on some of the pizza competitions, and don't miss the Beer & Bull Session, this is an excellent opportunity to grab a couple beers and casually visit with owners and operators or pose some questions to the moderator.

If you don't enjoy the show it's only because you didn't attend.

By the way, the NAPICS Show (Columbus, Ohio) is also a great show to attend too, it is a smaller show than Pizza Expo, but it is less costly too for both getting into the show and attending the learning sessions, so if you're in the neighborhood, and can't make Pizza Expo, don't pass up the NAPICS Show.

Tom Lehmann/TDD

Events Calendar / Re: pizza expo

Julian;

To substitute ADY for the IDY you are presently using increase the amount of ADY to 1.25-teaspoons, but be sure to put it into a small amount of warm (100F) water to hydrate for about 10-minutes before using it. You should not add it dry as you do IDY. Since pizza dough is best undermixed, mixing is really not an issue. I normally mix my home made pizza dough by hand just until the dough comes together, then place it into a lightly oiled bowl and allow it to ferment a couple hours, or more. Then turn the dough out of the bowl and knead for a minute or so, divide the dough into individual pieces for each crust you want to make, place each of these into a small, lightly oiled bowl and allow to ferment for 1 to 2-hours at room temperature. Turn the dough out of the bowl into some dusting flour and open into pizza skins. As for using bread flour, it works great. I like to use Pillsbury "BREAD" flour available from most supermarkets (it is intended for use in making bread with a bread machine).

I'll be in Overland Park next week at my son's home making my traditional pizza and calzones by this method.

Dough Clinic / Re: A Couple of Questions

PY;

Looks like a pretty decent rendition of a Chicago style thin crust! :)

Did you use raw sausage like they do in Chicago too?

Chicago Style / Re: After many failed attempts I finally got a decent thin crust

You also mentioned to use 25-grams of "flour" to stretch and fold the dough, is this the "Glutenten" flour or some other flour like rice flour?

Gluten Free / Re: gluten free NY style. yes. GF NY.

I have several excellent bake to rise dough formulas in the RECIPE BANK at the PMQ web site, www.pmq.com (click on the RECIPE BANK option), or if you wish, you can send me a message and I'll be glad to send them to you.

Dough Clinic / Re: Advice needed for "Rising crust" frozen pizza dough recipe please.

If you are making deep-dish pizzas, are you allowing the dough to rise in the pan prior to dressing the dough? If you're making a thin crust, where you roll the dough out, place it into the pan and then directly into the oven, a small amount of

oil in the pan may improve the way the dough bakes by improving the heat transfer from the pan to the dough. Something else that strikes me as strange, your bake time and temperature for an air impingement oven are long and high. Typically, we see baking times in the area of 6 to 7-minutes at 440 to 460F. This leads me to believe that you might not have the best finger arrangement/configuration for baking YOUR pizzas.

Dough Clinic / Re: Dough recipe questions

Maybe I missed it, but what is the diameter of the pizza?

Dough Clinic / Re: Dough recipe questions

TZ;

Most are using flour with about 12 to 12.5% protein content, similar to Pillsbury Bread Flour available at most supermarkets.

If there is a "secret" to their dough management procedures it is in allowing the dough balls to cold ferment for three or more days before opening the dough balls into pizza skins. They also spend considerable time in training their operators how to open the dough balls into pizza skins too.

Dough Clinic / Re: Pizza dough

G.L.:

Converting your dough formula to bakers percent it looks like this:

Flour 100%

Water 61.8%

Salt 1.66%

Oil 0.97%

Sugar 0.97%

Based on this I would decrease the IDY to 0.375% (2.7-grams), and increase the salt to 2% (14.4-grams). Optionally, you could delete the sugar from the dough formula if the flour you are using is malted (it will tell you on the bag if it is malted).

Dough Clinic / Re: Need some advice regarding this dough

Hey Ryan;

I bought some "dirt" this past summer from Walmart for \$2.00 for a 40# bag (\$0.05 per pound), come to think about it, I think they were referring to it as "top soil". :)

Dough Clinic / Re: Crunchy dough

Ryan;

At 52% absorption, your dough might have been too dry to fully hydrate the semolina flour. If you are trying to get that characteristic yellow color of the Chicago deep-dish pizzas, remember that they get that color through the addition of a yellow food coloring called "Egg Shade" you can Google it and it comes up.

Dough Clinic / Re: Why add semolina to pizza dough?

Runeli;

Don't worry, your English is just fine.

If you don't already have one, try to pick up a stem or dial type thermometer, like you see the chef's running around with in their pocket. These are usually pretty low cost and they will work great for measuring the dough temperature. If you use some type of a closed box to store your dough in you might also consider leaving the top off of the container for the first two or three hours in the fridge/cooler to

allow the dough to cool down more uniformly, then cover the containers until you're ready to use the dough.

Dough Clinic / Re: What happens??

Dana;

Something to keep in mind is that pizza dough is not all that different from French bread dough, Vienna bread dough, Italian bread dough, and depending upon the type of pizza you want to make, bread dough may not be too far off base. So keep your options open and be sure to look at other types of frozen dough, one of them just might be exactly what you're looking for.

Dough Clinic / Re: Frozen pizza dough

The addition of semolina flour (the same flour that pasta is made from) should not impart a grittiness to the finished crust unless the dough is extremely dry as are used for making some of the cracker type crusts. The semolina flour adds toughness/chew to the finished crust as well as a slightly different finished crust flavor profile. All of our work has indicated that you can go up to about 25% substitution of semolina flour for your regular flour with good results, beyond that toughness in the finished crust (especially as it cools) can begin to pose a problem. Semolina flour has a larger particle size than your regular flour (this is why it also works well as a peel dust) so it hydrates at a slower rate, due to this it is common to add just enough water to the dough to give you the desired consistency, but then the semolina flour begins to hydrate, and the dough tightens up, making handling/opening the dough difficult. To correct for this I always adjust the absorption on any doughs made with around 25% semolina flour so they are softer than normal and even somewhat sticky as these characteristics will disappear as the semolina flour hydrates over the next 30-minutes or so.

Dough Clinic / Re: Why add semolina to pizza dough?

Dana;

I hate to have to answer your question like this but there is no other correct way to answer it.

The best frozen dough will be the one that performs best for you in YOUR kitchen/store giving the finished crust characteristics that you desire. The best thing to do is to shop around and try dough from different manufacturers. The same advice holds true for par-baked crusts and gluten-free crusts.

Dough Clinic / Re: Frozen pizza dough

A couple of things stand out about your formula;

The oil level is rather high for this type of pizza. I would suggest reducing it to around 2%.

The salt level is a bit on the low side so I would suggest increasing it to 1.75 to 2%. Your yeast level is probably a bit low for ADY, you could go as high as 0.5%.

All of this said, I doubt that the problem is with the dough formula, but rather with either the protein content of the flour (protein content might be too low) or even more likely, your finished dough temperature (the temperature of the dough immediately after mixing) is/was too high. This would cause the dough to over ferment during the overnight period, resulting in what many describe as a "rotten" dough. I would think that, under your conditions, a finished dough temperature of 70 to 75F/21 to 24C might work pretty well for you. Additionally, it would also help if you could tell us how you manage your dough after mixing. This is everything you do with the dough from the time it is removed from the mixer until you use it on the following day.

[Dough Clinic / Re: What happens??](#)

I agree, with today's economy and uncertainty, a 5-year plan is pretty optimistic. I use a 3-plan to keep me pointed in the right direction.

[Shop Talk / Re: 5 Year Plan](#)

WRM;

Within reason, the more oil used in the pan, the greater the fried effect will be upon the finished crust. The biggest drawback to using this much oil though is in getting an oily finished crust...but they are soooo good.

[Newbie Topics / Re: Crispy fried crust](#)

David;

Others may have had a different experience, but when I have tried to bake my pizzas in my son's oven with the convection mode turned on, the top of the pizza colors up too fast and I can not get the bottom bake I'm looking for.

[New Forum Members / Re: Crust not cooking all the way](#)

David;

Your problem might also result from rolling the pizza skin too thin. This can result in a degassed dough which allows the latent heat in the stone to pass right on through the dough into the sauce where the heat is dissipated in the form of steam. A good test for this would be to allow your opened pizza skin to rest/proof for about 30-minutes prior to dressing and baking. If the bottom now bakes better and develops more color this is probably where the problem is, if not, possibly moving the stone closer to the source of heat might help.

[New Forum Members / Re: Crust not cooking all the way](#)

At about 0.5-pound for about a 12-inch pizza you are on the light side for dough weight, depending upon the type of pizza you are attempting to make. With the limited fermentation time that your dough is subjected to it can be rather difficult to open the dough without developing thin spots in it, and baking the pizza in a pan may be a detriment to getting the dough to rise in the oven as it would if you were baking on a stone. What you might do is to add additional water to the dough and also allow the dough to ferment longer, overnight in the fridge or at least 2-hours at room temperature before opening the dough into a pizza skin for topping and baking. Add sufficient additional water to just get a soft, pliable dough after the fermentation period. You might then try one of my tricks to open the dough ball into a pizza skin, that is to use a pie pin or rolling pin to open the dough ball to about 2/3 of the finished diameter, then finish opening the dough by hand. This method of opening the dough aids greatly in achieving a more uniform thickness across the diameter of the pizza skin.

[Dough Clinic / Re: Crunchy dough](#)

What was your formula/recipe?

How did you manage/handle the dough after mixing.

How did you open the dough into a pizza skin?

What can you tell us about how you baked the pizza?

[Dough Clinic / Re: Crunchy dough](#)

WRM;

What you experienced is common for any type of hard or plastic fat as opposed to using oil in the pan. The use of shortening, butter, margarine, etc will give a dry,

almost bread like crust surface while the use of oil in the pan will result in a fried texture and appearance.

Newbie Topics / Re: Crispy fried crust

SP;

Your number are pretty close to what we have found in our research here at AIB. We have found that the "magic" number/temperature is 50F. If you try opening the dough ball much below this the dough can be a bit problematic to get opened, and then it can give you fits with bubbles. At 50F the dough opens well and bubbles are minimized. The upper end of the temperature scale is around 60F. At this temperature the dough opens very well but depending upon the dough formulation, if you have a number of dough balls to open things can start to get out of control pretty quickly.

Neapolitan Style / Re: Preferred temp of Dough Ball to push out and get best Oven-spring

JV;

Adding a release agent to the pan, such as oil or shortening is the only option you have. Also, be aware that the bright shiny pans will bake much differently from a dark colored pan. To correct this condition you will need to season the bright colored pans by wiping them with salad oil and placing them into the oven at 425F for about 20-minutes. Repeat this at least twice and the pans should be ready to begin baking in. DO NOT allow the seasoned pans to ever soak in water as this will cause the seasoning to peel off necessitating that the pans be completely stripped of their seasoning and be reasoned.

Dough Clinic / Re: Help!!!

I'm assuming you mean to freeze the dough for future use? The best way to freeze the dough in a home application is to open the dough into pizza skins, and place onto a lightly oiled flat surface that can be placed into the freezer for freezing. I would allow the dough to freeze for at least an hour, then wrap it in stretch/cling wrap and place into a plastic bag and immediately back into the freezer. You can store dough frozen this way for up to 3-weeks. To use it, just place onto a lightly floured surface, cover to prevent drying, and allow to slack-out (thaw) until the dough is again soft, which normally takes about an hour total time. My own twist to this is to open the dough up to only about 2/3 of the desired finished diameter, then allow to slack-out as described above, but then proceed to bench stretch the dough to full diameter before dressing and baking. By doing it this way you don't need to wait as long for the dough to slack-out as the dough can be worked on the bench as soon as it is soft enough to be handled and by the time you are through opening the dough it has warmed sufficiently to allow you to proceed with building the pizza.

Dough Clinic / Re: Freezing dough for future use?

Dan;

A good compromise ADY level for both cold and room temperature fermentation would be 0.25% ADY. As for finished dough temperature I would suggest shooting for something in the 70 to 75F range. My own personal preference is to place the room temperature ferment dough in the cooler of the two locations mentioned.

Dough Clinic / Re: 1 Dough, 2 Ferments?

KDAQ;

You say you are using ADY but your formula shows IDY. There is a significant difference between the way the two different types of yeast are handled. ADY must

be hydrated in 100F water prior to addition to the dough or you will get lumps/spots of yeast throughout the dough. IDY can be added as you have indicated BUT the dough must be mixed for more than 4-minutes. It does not appear that you are mixing the dough this long so again, the problem has a high probability of being due to yeast agglomerates (pieces of yeast) not suspended throughout the dough. We have a similar problem in pizzerias when a VCM (vertical cutter mixer) is used and the mixing times are very short (about 70 to 90 seconds). The solution to the problem, if this is the root of the problem, is to suspend the yeast prior to addition to the dough. This is easily accomplished by putting the IDY into 95F water or ADY into 100F water and allowing it to hydrate for 10-minutes, then stir well and add along with the rest of the dough water. Note: The yeast should only go into a small portion of the total water. The remainder of the water should be at whatever temperature your dough management process calls for (typically around 85F).

Dough Clinic / Re: Spotty dough, how can I make it smooth?

Ryan;

Peter nailed it. My references for Gold Medal flours shows that all of the winter wheat based all purpose flours are malted, but when you go to the soft wheat flours such as Helmet, Golden Shield and Cameo these are not malted. All purpose flours typically have a lower protein content than bread type flours and since the proteins are a functional part of the browning equation the higher protein flours will contribute to a better color on the finished crust. Just for comparison, bread flours average from 11.1 to 12.6% protein content, All Purpose flours run from 8 to 10.5% protein content, and strong bread/pizza flours run from 13 to 14.2% protein content and semolina flour comes in around 12% protein but it is not malted. One thing to keep in mind is that while a pizzeria can easily get away using 100% of an all purpose flour with good crust color due to his commercial oven, when we try to replicate the same thing in our home ovens we don't have the same baking properties so it can present a challenge to get enough heat to brown the crust to the color we're looking for, so in some cases we may need to cheat a little by adding things like sugar, whey solids, or nonfat dry milk solids. Even the addition of vital wheat gluten to the formula will increase the protein content to the point where we see an improvement in crust color.

Dough Clinic / Re: Doh! Brown my crust - tips plz

I can toss out a couple thing that you might want to experiment with. I also bake as you do but I also move the pizza to a higher rack position for the last couple minutes of baking.

You might try brushing some olive oil on the dough edge just before you put it into the oven for baking, this will give an improvement in crust color.

I am in agreement with Ryan in that you might be pushing the semolina flour a bit too high. I seldom ever use more than 25% of the total flour as semolina. I have also had problems getting crusts made with AP flour to color up as well as I like so I always use a bread flour. My "go to" flour is the Pillsbury Bread Flour available from just about any supermarket. Like Ryan said, go to 100% regular flour and then begin introducing the semolina flour at increasing levels to see what you get, it will also be a good excuse for making pizzas, just be sure to log your results, and remember, even bad pizza tastes pretty good!

Dough Clinic / Re: Doh! Brown my crust - tips plz

I have several of what are probably the least expensive dough rollers/sheeters ever made. The more expensive one have handles to hold onto that connects to a central

axle around which a wood or metal barrel rotates. This one is called a "rolling pin" the other is nothing more than a 2" diameter piece of round hardwood 14" long. This one is commonly referred to as a pie pin. Both work great on pizza dough, croissant dough, sweet dough, donut dough, biscuit and yes, even "pie" dough. :) **Prep Equipment / Re: Has anyone tracked down a manual dough sheeter for home use?**

Mike;

The Lloyd Pans item that you are looking for is available in both 2" and 3" depth and 3" to 16" in diameter.

Their product number is PCC-12-2-DK for the 12" pan that is 2" deep. if you just change the 12 to the diameter you want and the 2 to either 2 or 3 depending upon the depth that you want, you should find what you are looking for. DK is their designation for their Dura Kote (black, non-stick) finish.

Chicago Style / Re: Springform Cake Pan? Can't get my deep dish out of the dish!

I use a deep-dish pan gripper and a cake decorating spatula with a narrow bendable blade. I first grab the pan with the gripper, then run the spatula blade around the pan to make sure the crust is fully released from the pan, then slide the spatula blade down the side of the crust and with a slight flip of the wrist I slide the spatula blade under the pizza to help guide it out of the pan onto a cooling rack.

American Metalcraft www.amnow.com has the heavy weight aluminum removeable bottom pans (3" deep X 8, 9 or 10" diameter). You may need to season these pans though. Or you can get the same type of pan with a black, non-stick coating from Lloyd Pans <www.lloydspans.com>

Chicago Style / Re: Springform Cake Pan? Can't get my deep dish out of the dish!

If your pizza skin is too thin, or doesn't exhibit any/sufficient oven spring characteristics during the early stages of baking the heat that is applied to the bottom of the dough is conducted right on through the dough into the toppings where it is dissipated as steam during baking, leaving the bottom of the dough/crust without sufficient heat to develop the desired color. Reasons for this can be forming the pizza skin too thin, or insufficient dough absorption which inhibits expansion of the dough during baking resulting in a thin, leathery finished crust. The best sugar to add to get browning without flavor (sweetness) is lactose. Lactose is a reducing sugar so it will readily participate in the browning reaction and it also has the lowest sweetness value of all the sugars, only about 10% of that of sucrose. Dairy whey is about 73% lactose so the addition of whey to the dough formula can be a good way to achieve pronounced browning without the unwanted sweet taste.

General Pizza Making / Re: Really need help with bottom crust issues

MO;

You are not locked into using any specific absorption so I might suggest just a further increase in dough absorption. This will provide a softer dough that will rise more readily (oven spring) during baking to provide for a lighter textured crust.

Dough Clinic / Re: Great Recipe and Fantastic Taste - just need it to be more fluffy + light

Wes;

Your local SBA should be able to provide you with all the information you need.

Many times they can point you to retired business execs that that volunteer for them and are more than happy to assist you.

Shop Talk / Re: 5 Year Plan

While on the topic of K5-A mixers, keep an eye out for the Hobart industrial version of this mixer, model designation N-50. This is a three speed mixer that was developed for industrial applications.

Prep Equipment / Re: Spiral Hook for KitchenAid K5SS

As I've said so many times, temperature control is the key to effective dough management. This is extremely important, especially in a store setting where pizza quality can make or break your business. Be sure you are correctly hydrating the ADY in a small portion of 100 to 105F water for about 10-minutes. The dough temperature should be 80 to 85F after mixing. If you are using large dough boxes, be sure to cross stack them after you put them in for the first 2-hours after you put them into the cooler, then cover or nest the boxes to prevent drying and the dough will be ready to use in about 18-hours. To use the dough (this is CRITICAL for what you are doing) bring the dough balls out of the cooler and allow them to temper at room temperature for 2.5 to 3-hours, then begin opening the dough balls into pizza skins for immediate use. Once you begin using the dough it will remain good to use for the next three hours, just remember to keep those dough boxes covered.

Let me know if you see any improvement from this.

Dough Clinic / Re: dough won't fully cook through

I can't speak to the K-5A mixer specifically, but when Hobart first came out with the new spiral hook design back in the late 1960's it was retrofittable to all of their mixers at the time.

Prep Equipment / Re: Spiral Hook for KitchenAid K5SS

I just lightly oil my dough balls and put them into reclaimed bread bags, twist the open end to close and tuck the pony tail under the dough ball as I place it into the fridge. Works great, and the cost is free if you eat packaged bread or know someone who does.

Chitchat / Re: poofing boxes

MPO;

How long are we talking about holding these toppings before they're used? If we're in the 3 to 5-day range, perhaps a little longer you can dehydrate just about any vegetable toppings you wish and rehydrate them at the time of use. Use a meat topping that is packaged and sold at room temperature, or make your own jerky to rehydrate. As for the dough, simple, put together an emergency dough using IDY and shortening as opposed to oil. Put it all together in a durable plastic bag (I use a 1-gallon Zip-Lok bag) force out as much air as possible for ease of packing and secure with a couple rubber bands. When pizza day arrives, add a prescribed amount of water directly to the bag and knead the mixture to make a sticky dough. Set aside to ferment for an hour or a little more, then remove the dough from the bag by inverting the bag, and using some dusting flour or oil on your hands, knead the dough for a minute or so, then form onto a piece of oiled heavy duty aluminum foil. Set aside to proof/rise for 10 to 60-minutes while you're dressing the dough, then carefully transfer to a bed of hot coals to bake until the bottom begins to brown, using another piece of lighter weight foil, tent the top of the pizza to get some top heat and bake until it is reasonably done. Remember, this is a backwoods pizza, anyone not inclined to like it is free to go to Pizza Hut, or order one from

Domino's! LOL.

I've made pizza like this a number of times with the scouts.

General Pizza Making / Re: Camping Pizza Making with no cooler

A lot of it will depend upon the flavor you're looking for in the finished crust. My personal preference is to take the dough directly from the mixer to scaling and balling and then directly into the fridge where I leave it cold ferment for 48 to 72-hours before using it. To use the dough balls that have been cold fermented I like to allow them to temper at room temperature for about 2 to 3-hours depending upon ambient temperature, then open the dough balls into pizza skins ready for dressing and baking. Allowing the dough to ferment partially or totally at room temperature will impart a different flavor to the finished crust. I'd experiment to see where your flavor preferences lie and to see what management procedure works best for you.

Dough Clinic / Re: Why bulk ferment?

MO;

Two options come to mind, you have room to increase the IDY slightly. You can take it up to 0.375% and still be within the normal yeast range. This will provide additional leavening to the dough for a lighter, less dense finished crust. If your dough management procedure allows, you could also increase the finished dough temperature by a few degrees to speed up the rate of fermentation, thus providing for a lighter finished crust texture, or you could just allow the dough skin to proof/rise (maybe 10 or 15-minutes) between shaping and dressing/baking. This is how we impart the characteristic lightness to bread and rolls.

Dough Clinic / Re: Great Recipe and Fantastic Taste - just need it to be more fluffy + light

Chuck;

Your problem is one of two. Either you are underfermenting the dough or you are using the wrong type of flour (excessively high in protein content) for the dough management procedure you're using. Not knowing anything about the type of pizza you're making, the formula/recipe, or your dough management procedure, the best I can offer at this time is to say that fermentation reduces the elasticity of the dough. If you are using a refrigerated method of dough management it is common to allow the dough to cold ferment for 2 to 5-days. and if you are using the dough the same day to make your pizzas and fermenting the dough at room temperature a minimum of 6-hours of fermentation time should be used. If you want to attack the problem through the use of an additive, I'd suggest using something like PZ-44 (a blend consisting of L-cysteine (an amino acid) and dairy whey), or "dead yeast" which is rich in glutathione (also an amino acid). The dead yeast product is available from just about any yeast manufacturer while PZ-44 is available from Agropure (formerly Foremost Farms USA). You might Google either of these to see if you can find a source selling in quantities of less than 50-pounds. Since both of these are used at a range of 2 to 4% of the total flour weight you will find that a little goes a long ways. One other thing you could also add to the dough to help reduce the elasticity is onion and/or garlic powder. Used individually or in combination at around 0.25% of the total flour weight this can help reduce some of the elasticity in your dough.

Dough Clinic / Re: Overly elastic dough

I'm a fan of sliced toppings as opposed to diced. To my eyes, the sliced makes for a much better looking pizza, not as "commercial" but more "rustic" if not gourmet for

whatever that means. I also like to retain some of the texture in the vegetable toppings so I tend to lean towards a slightly thicker slice. I also really like the flavor that I get from the sliced toppings as it gives some variety as you eat through the pizza. As you might imagine from this, my greatest dislike of a pizza comes when all of the toppings are diced uniformly fine so the second bite is just like the first bite, and the last bite is just like the first bite too. I even go so far as to make sure I have a nonuniform distribution of toppings on the pizza to give an additional depth to the layering of flavors as I eat through the pizza.

Pizza Toppings / Re: Toppings.....Sliced vs Diced

Sonny;

The bake issues that you are presently having are a result of your oven not having any top heat control. When you go commercial you can opt for an oven with both top and bottom heat control to address those problems. Covering the top of the pizza with a piece of foil is a common way to balance the bake of a deep-dish pizza in a home oven or any oven that does not have top and bottom heat control. One neat trick that I've seen used with ovens like yours is to bake the pizza on the deck with a piece of foil covering the top of the pizza until you have the bottom color you are looking for, then place an inverted pan into the oven and place the pizza on top of the inverted pan without the foil covering. This insulates the bottom from the heat of the deck while moving the top of the pizza closer to the top of the oven where you will get better/faster color development to the top of the pizza. This is similar to what many people do in their home ovens where they bake the pizza on a lower rack position to get the bottom crust color/bake and then move it to a higher rack position to get the top color and finish baking.

Dough Clinic / Re: cooking on lloyds pans

Dustin;

50% absorption seems to be rather low for the type of flour that you're using. This might be restricting the oven spring of the dough during baking thus making a more dense dough which is more difficult to get to brown during baking than a lighter, better risen dough. I would suggest increasing the dough absorption to 63% (15.12-ounces) call it 15.5-ounces. The dough will most likely take longer to pull off of the sides of the mixing bowl but that is normal with the higher absorption. When you remove the partially baked pizza from the pan, try placing the pizza onto a rack in the highest or second to highest rack position as this will provide more top heat to the pizza for better top color development. The softer dough consistency should exhibit better oven spring during baking which will improve both the color and crispiness of the finished crust.

Dough Clinic / Re: My dough is too soft, why?

Chase;

What is your starter comprised of? What are the amounts that go into making the 98-grams?

Dough Clinic / Re: how can I improve my dough?

I've also been a knife collector for more years than I can now remember (over 50) and during the winter months I build hunting knives (drop-point design) and make all of my own knife sheaths and pistol holsters, but that's a whole different story. I use nothing but a series of diamond sharpeners from coarse grit to ultra fine for polishing the finished edge, I then strop the blade to remove the wire edge. Even though I include a warning with each knife, I still get e-mails from purchasers telling me that they were just checking the edge by running their thumb over it and

ended up with a split thumb. We also have a number of ceramic knives in the kitchen and they work great so long as you don't try to pry with them, and by all means don't put them into the dishwasher. With time even the ceramic blades need to be sharpened and I find that my diamond sharpeners are up to that task too. The biggest challenge to using my type of diamond sharpener is learning how to hold the knife to get a 20 - 22-degree angle along the entire blade length. Once you have that part mastered, sharpening knives and maintaining the edge the old fashion way is fun and easy.

Chitchat / Re: Edge Pro Knife Sharpener.....

I think Vince is pretty close. PH does use a LOT of oil in their pan pizzas as does Old Chicago too resulting in more of a fried than baked pizza. I normally use peanut oil in the pan in this application.

American Style / Re: The secret of pizza hut shiny crust ?

DSW;

Ohhhh.....Very nice bottom crust color. It looks like all you need is a bit more top heat to get the sugar free dough to color up (in my opinion).

Dough Clinic / Re: Pizza Dough Recipe "Weighed not Measured"

PF;

Here is what I would suggest;

- 1) Use only about 1/2 cup of warm water (100 to 105F) to hydrate the yeast in.
- 2) Add only a pinch of sugar to the yeast suspension and stir for about 15-seconds. Allow to hydrate/activate for 10-minutes.
- 3) Have the remainder of your water at a temperature of about 75F.
- 4) Add the yeast suspension and the 75F water to the mixing bowl. Note: You might want to consider increasing the water to 60% absorption (720-grams total).
- 5) Add the remainder of the sugar and the salt on top of the flour.
- 6) Mix as you normally do.
- 7) Portion into doughs ball as you are presently doing.
- 8) Place dough balls into your oiled containers, and place into the fridge uncovered for 2-hours.
- (9) Place lids on the containers and allow the dough to cold ferment overnight in the fridge. This dough should keep for at least 2 to 3-days (possibly longer) if kept in the fridge.
- 10) Remove the number of containers from the fridge that you need to make your "pizza fix", and allow to set at room temperature for about 2-hours.
- 11) Turn the dough out of the container(s) onto a flour dusted surface, flour both sides of the dough ball and begin opening the dough ball into a pizza skin. An easy way to do this is to use a rolling pin to open the dough to about 2/3 of the finished diameter, then set the dough piece aside to rest for 5-minutes, now you are ready to begin opening the dough by hand to the full desired diameter.
- 12) Place the pizza skin onto a seasoned screen, lightly brush with olive oil, dress as you wish.

Dough Clinic / Re: HELP! I keep adjusting my percentages.... BUTT!

DSW;

My "partner in crime" here at AIB is Jeff Zeak, with about 25-years pizza experience loves to make free from pizzas such as yours. His comment when he saw your photo was "cool". The dough looks good as do the toppings, but if I was to make a change it would be to work towards more top crust color on the pizza. How was the bottom color? From the looks of the top, I might assume it to be on the

light side. If you can't get improved crust color by manipulating the position of the pizza in your grill, or through the temperature try adding some sugar to the dough formula to increase crust color development under your baking conditions. Nice job!

Dough Clinic / Re: Pizza Dough Recipe "Weighed not Measured"

And don't forget to add fermentation to the mix. Remember that fermentation rate is influenced by yeast level, salt level, sugar level, finished dough temperature, and we could probably toss pH into the bag too (but that probably won't influence the issue at hand). With that said, if you employ a long fermentation time or high fermentation rate it could weaken a lower protein bread flour while not weakening the high protein flour this would give a significantly higher finished volume/height to the finished crust made with the high protein flour. The converse is also true. What does all this boil down to? The flour characteristics must be matched to the type of pizza being made as well as the dough formulation and dough management procedure used to manage your dough, and then it must be weighed against what characteristics you are looking for in the finished crust. This is why we see so many different types of flour being used by so many different people to make the same or different pizzas. Of course this is where the fun now actually begins, looking for the flour or flour blend that works best for your specific pizza. Remember, your mistakes ARE edible. :)

Dough Ingredients / Re: Bread Flour vs. High Gluten Flour

PAJ:

You will probably be best off by just adding the ADY to the warm water with just a pinch of sucrose (regular table sugar) to help get it started. There is no need to add any flour or anything else.

If you have too much yeast for the length of time you are fermenting the dough the dough can become over fermented, thus weakening the dough to the extent that it can't support the weight of the toppings, so it now collapses, and readily allows heat to pass through the dough/crust into the toppings where the heat is dissipated in the form of steam, hence the dough never becomes baked to the point of being very crispy or firm. If you see both of these in your pizza, the dough might be over fermented. If you just see the gum line you might also be stretching the dough too thin, or if you are making your own sauce, you might be adding too much water to it, or an excessive amount of toppings. To test for this, try brushing on a VERY THIN layer of oil on the skin, then add thin slices of blotted, fresh tomato (one average tomato is about right for a 12-inch pizza), now apply your cheese and see if the problem has been addressed. If it has, this is an indication that you just need to work on dressing the skin. In some cases the gum line can also result if the pizza isn't baked long enough. To test for this, reduce the baking temperature by 50F and bake to color. If this addresses the problem you may need to make an adjustment to your baking time and temperature.

Newbie Topics / Re: OK WTH am I doing wrong?

Walter;

No telling for sure, but I'm willing to bet that the practice goes back to some of the very first pizzas made. If you are referring to the modern cold ferment process as we use it today in our pizzerias, it can be dated to about 1958 and it was in pretty common use just a few short years later. The use of the process follows the development of the pizza chains as we know them today.

Dough Clinic / Re: Tom: When did pizzerias start cold fermenting dough?

Walter;

I don't know when that school started doing it but I worked as an adviser to a very similar one all the way back in the early 1970's when we were still up in Chicago. When my wife was still teaching elementary school I organized several student run fund raising dinners at her grade school. With help from the ladies in their kitchen to prepare the food (pizza dinners and sometimes pasta dinners) the kids would sell tickets, meet and escort diners to their table, bring the food to the tables, bus and reset the tables for the next dinner guests. This was a great learning experience for the kids, and it was always one of their best fund raisers too, so I can fully appreciate all the benefits something like this brings to the students.

Dough Clinic / Re: Tom: When did pizzerias start cold fermenting dough?

TLK;

Actually, when made correctly, whole-wheat crusts are not all that bad. The biggest problems that I see are two fold, first, they really should be made from a hard, whole white wheat. This will eliminate some of the bitterness often associated with whole wheat crusts. Second, you need to have enough water in the dough to fully hydrate the whole wheat flour. This generally means a dough absorption of around 70%. The dough will feel soft and sticky at first, but if you allow the dough to rest/ferment/hydrate for about an hour, you should see a significant improvement in the dough as the whole-wheat flour hydrates. Once the dough has hydrated you can ball it and put it into the fridge for some overnight cold fermentation to develop some flavor. With regard to formulation, I personally like to formulate my whole-wheat doughs with higher sugar levels, like up around 5% to achieve a sweeter tasting finished crust. After that, I don't use it for anything but the thinner crust types because I think the flavor and texture might be too much in a thick crust format. Aside from the vegetable toppings, and traditional sauce, or my favorite, slices of fresh tomato to replace the sauce, use a vegan cheese and you should be good to go.

Newbie Topics / Re: Whole Wheat/Vegan Pizza?

Airruiz;

I have a good friend here in Manhattan, KS with three pizza stores and he has had some very good luck finding used XLT's as well as used Marsall deck ovens on the internet. Another very good resource on ovens of all kinds is George Mills. George is a regular at the PMQ Think Tank. Just make a posting in the Think Tank directed to George Mills and he'll be sure to respond to any questions you might have on ovens, hoods, or just about any other store equipment or design.

Shop Talk / Re: Conveyor pizza oven

B2D;

What many slice vendors do is to fully bake the pizzas, place them onto aluminum serving/display trays and store them in the heated (145F) cabinet with approximately 70 to 75% R.H. (relative humidity). Under these conditions the pizza will hold up well for about 2-hours, but the cheese will begin to look something like a melted blob of plastic (ain't much that can be done about that). Then, when a slice is ordered, the slice is removed from the cabinet and placed into an oven for warming/re freshening. The type of oven that seems to work the best is a small counter top conveyor oven, but I've seen deck ovens used to great success too as well as toaster ovens for use at bars where time is not a great issue. The reheating process brings the cheese back to a level of life, but if you give the slice a very light sprinkle of additional cheese as you put it into the warming oven it restores the slice to that fresh baked appearance again.

Shop Talk / Re: Keeping Pizza by the slice fresher.

Mary Ann;

Canola oil should work just fine...why waste perfectly good olive oil? LOL As you continue to bake in your seasoned pan/pans they will continue to darken to an almost black color. Cherish those pans when they get to that color since that's when they will bake the best.

Stones/tiles/steel, Pans & Accessories / Re: Rusty Sicilian Pizza Pan

Sonny;

When he was in Buffalo he was using an 80% absorption rate. We might assume that Buffalo (N.Y.) is significantly more humid than Las Vegas, NV. As we are talking about the use of bagged flour of undetermined age, but can assume that it was stored/inventoried in a proximity close to each city, there is a distinct possibility/probability that the flour used at the Buffalo location had a higher moisture content. When he moved to the drier, Las Vegas location the flour could have been lower in moisture content due to the desert environment, hence, if he were to add the same 80% absorption, the resulting dough would be somewhat drier/stiffer and potentially lack the oven spring properties of the dough he was making in Buffalo, so, my reasoning was that the addition of some additional water to the dough might restore the rheological properties to the dough (as they were in Buffalo) resulting in more oven spring and a resulting improved bake-out. It looks as if the additional 1/4-cup was too much, but a lesser amount might give the desired results. Like I said, this is the easiest thing (and somewhat logical in my twisted mind) to do first. If additional water/absorption doesn't work we will need to dig deeper.

Dough Clinic / Re: pizza dough and making pizza

According to the SAF conversion chart you will need to replace your 2-ounces of IDY with 6-ounces of compressed yeast.

Dough Clinic / Re: Instant Dry Yeast to Fresh Yeast Cake weight conversion help?

Jerry;

Let's start with the easy things first. It sounds as if the dough isn't getting baked properly. With the much drier climate in Las Vegas it could be that your flour is somewhat drier, thus needing more water in the dough would help the dough to better expand (oven spring) during baking, resulting in a better, more thorough bake and an overall crispier finished crust. I would suggest adding at least 1/4-cup additional water to see if that helps move you in the right direction.

Dough Clinic / Re: pizza dough and making pizza

B2D;

Does your slice warmer have both temperature and humidity control?

Shop Talk / Re: Keeping Pizza by the slice fresher.

XLT is a great oven, and they have superb back up assistance to boot, even if you did not buy the ovens from them, they will still totally support any ovens with their name on it. Keep in mind that when buying ANY oven that it may not be what it appears to be. While any XLT, Edge, Middleby-Marshall, Lincoln, or Avantec oven might appear to be a pizza oven, this does not mean that it was profiled as a pizza oven when it left the factory or was used in a different application. For example, a number of years ago there was a young fellow who had just bought a used Lincoln

air impingement conveyor oven, but try as he did, he could not get it to bake a decent pizza. When I asked my friend at Lincoln to run the serial number for me we discovered that the oven was originally bought by a major seafood restaurant chain, and it left the factory with a proprietary finger profile designed specifically to bake.....you guessed it, seafood, not pizza. He had to spend another \$700.00 to get the right finger profile to use the oven to bake pizzas. Moral of the story, know what you are buying before plunking your change down on the counter. If you do an "In Lehmann's Terms" archive search at www.pmq.com you should find my article covering all aspects of buying a used air impingement oven. My bottom line advice is to know what the power source is (electric in your case) and also the model number which is also the size designation, such as 32-55 (32-inches wide by 55-inches long) and then call XLT <www.xlovens.com> or 888-443-2751 and ask to speak to someone about the recommended top and bottom finger configuration for that particular oven when used for baking pizzas. You will then need to pull the fingers to confirm what you have or will need to make that particular oven work for you.

I hope this helps,

Shop Talk / Re: Conveyor pizza oven

GFG;

I'm guessing that the culprit is the soda. Soda is an alkali which raises the pH of the batter allowing it to brown faster and better. Just the opposite is also true in that an acid lowers the pH thus slowing/blocking the browning reaction to give a much lighter crust color. This is why sourdough breads have such a light crust color. You could probably encourage your new batter formula/recipe to brown better by adding some baking soda to it.

Off-Topic Foods / Re: sweet and sour chicken didn't turn brown

We have looked at both and with our testing we haven't seen any real advantage of one over the other. They both provide an improvement over just placing the pizza right onto a cardboard circle and then inserting it into a box. Which brings up one other cause for soggy boxed pizzas, make sure your boxes have steam vents, and make sure they're punched open.

Dough Clinic / Re: WF Pizza great in house, gets spongy in box if taken home.... help?

I see this as a common problem with many pizzas that are baked at a high temperature for a short time. Sometimes just reducing the temperature a bit and extending the baking time a little can have a great impact upon the quality of a DELCO pizza. You also want to make sure you are using something like a ripple board or pizza crisp sheets/mats under the pizza in the box.

Dough Clinic / Re: WF Pizza great in house, gets spongy in box if taken home.... help?

I was raised on a small dairy farm and as a kid one of my chores was to make butter each day. Go to the milk house, skim off the cream from a milk can (you can substitute whipping cream if you don't live on a dairy farm), fill a quart size mason jar about 3/4-full, add a couple good pinches of salt, place lid on jar and begin shaking as you walk back to the house. Continue shaking until the cream begins to curdle/thicken, strain through a cheese cloth and squeeze out excess water. Serve fresh or refrigerate.

Off-Topic Foods / Re: Anyone make their own butter?

Mary Ann;

If it isn't too late, pull that rusty pan out of the trash, you can salvage it without any problem. Thoroughly scrub all rust out of the pan, then coat the inside (and outside) of the pan with salad oil and place into a 400F oven for about 30-minutes, be prepared for some smoke. Remove and allow to cool to the touch, then repeat. Your pan has now been seasoned. DO NOT soak the pan in water...ever. To wash, simply rinse in warm soapy water, rinse, wipe dry and place into the oven while it is still warm from baking your pizza(s) to thoroughly dry. Properly cared for, a seasoned pan will last for a very long time.

As for the dark colored pans, they are fine at temperatures all the way up to about 600F with dough in the pan, keep in mind that the pan will never reach that temperature as your pizza inside of the pan will hold the temperature down. Your baked pizza will only reach temperatures in the 200 to 210F range.

Stones/tiles/steel, Pans & Accessories / Re: Rusty Sicilian Pizza Pan

Mary Ann;

While "high gluten" is synonymous with pizza, it is not the only flour that can be used to make pizza because there are so many different styles of pizza. My personal favorite flour to use for pan style and thick crust pizzas is a flour that comes in at between 11% protein on the low side to about 12.5% on the high side. My experience has been when I use a higher protein flour with my dough management process I get a finished crust that is too chewy for my likes. It should also be noted that the term "high gluten" isn't a whole lot of help when determining the protein content of the flour since there is no standard for high protein flour we have seen the words high gluten used on flour bags containing flour with anything from 12 to nearly 14% protein. Check on the flour bag for the protein content, usually expressed as grams of protein per 100-grams of flour. When expressed in this manner the grams of protein will be the protein content. For example, 12-grams of protein per 100-gram serving = 12% protein content. You can also go to the web site of the manufacturer to find the protein content of the flour in question.

Dough Ingredients / Re: Bread Flour vs. High Gluten Flour

C;

By "commercial pizza dough" I assume that this is dough that you are making in your store (you referenced staff). I will also assume that you are talking about a bake to rise concept pizza which is a raw dough skin that is topped and frozen to be baked from frozen at a later time/date. I will also assume that you are going to be baking the pizzas in a commercial pizza oven as opposed to a home oven which most T&B pizzas are ultimately baked in.

I would suggest the following:

- 1) Use fresh mixed dough formulated with 50% more yeast if possible, if not possible disregard and use your normal dough.
- 2) Scale, and ball as normal, wipe dough balls with oil and set aside to proof until the dough can be opened into pizza skins by your normal manner.
- 3) Open the dough balls into pizza skins, very lightly brush with oil, sauce and dress. NOTE: Do NOT dress too heavily with vegetable toppings as these will breakdown as a result of slow/static freezing and water out, leading to the development of a beautiful dreaded gum line.
- 4) Freeze the pizzas unwrapped until solidly frozen (about an hour).
- 5) Stretch wrap/shrink wrap the pizzas on a pizza circle with a piece of baker's parchment paper between the circle and the pizza.
- 6) Immediately place back into the freezer. They should keep for up to 2-weeks.
- 7) To bake these pizzas you will need to use a lower oven temperature. Depending

upon your dough formulation something around 400 to 425 should work.
8) Bake the pizzas (possibly on a screen) until you achieve decent color top and bottom.

9) Adjust your expectations as you will not get the same pizza as you would if you were to bake it fresh (not frozen).

Thinner crust pizzas are better suited for this application than thick/thicker crust pizza types.

Shop Talk / Re: Freezer ready pizza using commercial premade pizza dough - How to?

Cindy:

You might increase the sugar level to 3% to see if that helps, otherwise you might need to do what I do in my electric oven, and that is to start the pizza out closer to the bottom to get a jump on crust color development and then move the pizza to a higher rack position to achieve top color. Also, can you share information on your stone with us. There is a possibility that it isn't holding sufficient latent heat to bake the bottom crust....i.e.; you may need to use a thicker/heavier stone.

Dough Clinic / Re: Oven Rack Placement - top or bottom of oven

Since you have confirmed yeast activity, we can probably safely take that off of the table for now, so the next most likely caused are either stretching the dough skin too thin, or incorrect baking.

Another thing to look at is use of an excessive amount of sauce, pre-saucing the dough skins, or excessive amount of toppings. These are pretty easy to test by just barely using sauce, sauce only when you are ready to dress and bake the skins, and reduce the amount of toppings used.

Stretching the dough skin too thin is a very common cause of a gum line. To test this, leave the dough thicker for one pizza and see if things improve any. As for baking, you can test that by reducing the oven temperature by about 25F and baking for a slightly longer time.

Keep us posted on your progress.

Newbie Topics / Re: OK WTH am I doing wrong?

Manhattan, Kansas, home to Kansas State university (Wild Cats) and Fort Riley (Big Red-1 /Seventh Calvary) about 100-miles west of Kansas City, Missouri or Kansas take your pick. Our local motto is "go west young man, go west, anyplace west of Kansas is fine".

Chitchat / Re: So where does everyone live?

Please keep in mind that Wondra is an "instantized" flour, which accounts for its granular texture, As an instantized flour it is designed to hydrate very rapidly, faster than any regular flour will. When used as a peel dust, if you leave the prepped skin on the peel too long, or if the dough is slightly wet, the Wondra flour will hydrate in a heart beat, turning into what we used to call school paste, only now strategically located between your peel and what you are hoping will become a great tasting pizza, that is if you can get it off of the peel without destroying it. Just a cautionary note.

Neapolitan Style / Re: Burnt crust

PAJ:

If you are putting the yeast into water that is uncomfortably warm the water is waaayy too hot. Think of it like this, ideal yeast hydration temperature is 100 to 105F, body temperature is 98.6F, the water temperature in which you hydrate your

yeast should feel only very slightly warm (only about 7F warmer than your finger). You are right, you might be cooking your yeast rather than hydrating it. Do you see any activation foam forming in the yeast water after about 10-minutes?

Newbie Topics / Re: OK WTH am I doing wrong?

Sonny;

Convection ovens are not pizza ovens as they provide little bottom heat that is required to properly bake a pizza. In a home setting you can make them work by using a heat sink under the pizza, but in a commercial application this will not work. Like Walter said, leave that oven to what it was designed for, baking cakes, cookies and some breads.

Dough Clinic / Re: Bakers pride convection oven

PAJ;

What you have is what we like to call the "dreaded gum line" which appears directly under the sauce as a gray colored, raw dough textured area. The first thing to do is to confirm that you really do have a gum line. This is done by cutting the pizza into slices, then turning a slice over and using an Exacto knife or box knife with a new blade, carefully cut the bottom crust from heel to point, then separate the two pieces, look to see if you can see a gum line about 1/8-inch thick you have confirmed your suspicions. Another quick test is to tear a slice apart, again from the heel to the point observing the way the crust separates. If it cleaves cleanly, you don't have a gum line, but if it feathers as you pull it apart (forms a film) congratulations, you have a gum line. In home baking, the most common causes are 1) Forming the pizza skin too thin. 2) Baking the pizza at an excessively high temperature. Occasionally, we find that the cause can also be due to an excessively low yeast level. If you can share your dough formula and dough management through forming technique I might be able to better ascertain just what the causative factor is.

Newbie Topics / Re: OK WTH am I doing wrong?

Rather than "thickness factor" we like to call it "dough density". This is a value referencing the weight of dough per square inch of pizza surface area. One very important aspect of using this is that you can make any size pizza you want having the same thickness here is an example of how it works:

Lets say you make a 12-inch pizza using 10-ounces of dough. The 12-inch pizza has 113 square inches of surface area so we divide the weight of dough by the surface area (113) and we get 0.0884 (you might call it 0.09 if you wish. Said another way, each square inch of this pizza contains 0.0884-ounces of dough weight. Now, lets say you want to make a 14-inch pizza. How much dough will you need to make the same pizza but only to a larger size? Use Pi X R squared to find the surface area of the new pizza size. $\pi = 3.14$; $R = 7$; $R^2 = 49$ so, $3.14 \times 49 = 153.86$ (call it 154) square inches. Now, multiply the new pizza diameter by the dough density value of 0.09 that we had for the 12-inch pizza and we come up with $154 \times 0.09 = 13.86$ -ounces of dough will be needed to make the same crust that you made as a 12-inch only now as a 14-inch pizza. You can easily do this for any size pizza. You can also use this method for calculating the sauce and cheese weights too. In this application you will need to replace the dough weight with the sauce or cheese weight to arrive at a sauce density or cheese density value.

General Pizza Making / Re: I Have Questions about "Thickness Factor"

Walter;

The yellowish color that you note is due to the flour being unbleached. The brighter

white color of the flour is an indication that it has been bleached. This is just a color thing and does not impact the performance of the flour in any way. Fact is, when making pizza crust it is all but impossible to distinguish if a bleached or unbleached flour was used when looking at the finished crust. With bread you can tell, but not with pizza crust, it's just too thin.

New York Style / Re: All trumps VS harvest king both from general mills

Rosie;

Here is what your dough formula looks like in bakers %:

Flour 100%

ADY 0.375%

Sugar 2%

Salt 1%

Oil 3%

Water 47.75%

Comments: For what you are doing, I think 0.375% ADY might be a little low, I'd suggest increasing it to 0.5% (4-ounces).

The salt is also on the low side at only 1% which might be hurting the flavor of the finished crust. My recommendation would be to increase the salt to 1.75% (14-ounces). Your water seems rather low for All Trumps flour. I would suggest increasing it to something in the 60 to 65% range (480 to 520-ounces).

You indicate that most of the water is hot (105F). A better temperature for the most part of your water would be 75 to 80F, with only about 16-ounces of the water reserved and heated to 105F for use in hydrating the ADY. This should give you a finished dough temperature in the 80 to 85F range. Take the dough balls directly to the cooler. To use the dough balls, remove them from the cooler and allow to temper AT room temperature for about 2-hours, then sheet the dough to only 2/3 of the finished diameter and finish opening the tough up to full diameter by hand. You should then be able to immediately dress and bake the skin without the need to allow it to proof on the screen as you presently do. If you will send me your e-mail address and I'll send you a copy of my Dough Management Procedure.

Dough Clinic / Re: High Gluten Flour !!

Polo;

That is one of the varieties I'm growing this year. While not as flowery as regular sweet basil, the purple basil has a more spicy, complex flavor profile that while slightly different, seems to work very well in pizza and pasta applications. Keep in mind that I only use fresh basil, rather than dry my surplus, I puree it with a little olive oil for use during the winter months.

New York Style / Re: Is there anything better than fresh ingredients from your garden?

Rosie;

Can you share your dough formula/recipe along with how you bake your pizzas with me?

If you are not cold fermenting the dough at least 24-hours this might also be a cause for the excessive dough bubbling. After mixing I like to form the dough into individual balls, and take them immediately to the fridge where they are allowed to ferment under refrigeration for at least 24-hours, but 48-hours is better in my opinion. Then remove the dough from the fridge, allow it to temper AT room temperature for 2 to 3-hours, then open the dough ball(s) into pizza skins, dress and bake. This generally produces a minimum of bubbling from a dough

management standpoint, but the underlying cause might be something different possibly related to formulation of baking.

Dough Clinic / Re: High Gluten Flour !!

Sonny;

If you will send me a message requesting my Dough Management procedure I'll be glad to send you a copy. This is the complete procedure that is typically followed to make pizza dough at the pizzeria (but it also works at home too) from mixing to final use of the dough. Keep in mind that this is just the base procedure, there can be any number of modifications or changes made to the procedure as necessary to give you the finished pizza under your existing shop/kitchen conditions.

Dough Clinic / Re: % IDY

Biz;

Over the years we have noticed that we seem to get more calls regarding off flavors or performance issues with starters during the warmer months of the year in states where they have a seasonal change. We have attributed this to one of two things: Forgetting to put the starter back into the fridge in a timely manner (if it is a refrigerated starter), during the times when the room/kitchen is warmer can result in a shift in the microflora or contamination through exposure to unwanted wild yeast or mold spores which are more prevalent during the warmer seasons of the year. If you are in a location where snow cover is common during the winter, mold counts are really down during the winter, but as soon as the snow melts, mold spores in the air can really spike. When I was young, and living on the farm we used a starter to make all of our breads. It was stored in a glass jar at room temperature with cover consisting of a piece of paper secured with a rubber band. The cover was removed, the jar was "swished" around a little and an appropriate amount was poured out where upon the lid was immediately replaced on the jar. The doughs were always prepared in the evening and allowed to develop overnight for use on the following day. We only made fresh bread twice a week but when we went into town (about every two weeks) we brought back "store bought bread" as a treat for the women so they wouldn't need to make bread for a couple of days as the commercial bread remained soft and fresh for several days, even back then.

Starters/Sponges / Re: Starter is eating itself

Cindy;

I don't think you will have much luck finding a bromated flour in California as one of the many propositions all but bans its use in any food item. If you know someone outside of CA you might be able to get them to pick some up for you and UPS it to you. In CA when a food item contains bromate it must be labeled in a similar way to that which is seen on a pack of cigarettes or a bottle of wine. In short, it says that this stuff might give you cancer....With that thought, give me two more bags of that bromated flour. LOL

Dough Clinic / Re: Help with Oven Spring

Biz;

It certainly appears that you have "lost" your starter. This can and does happen from time to time to even the best of us.

There are some fungals that can form in a starter that will induce the exact thing you have described. These fungals (molds) could have been introduced with the flour used to feed the starter, or just through contact with the air , or they might have even been on a spoon or whisk used to stir in the flour. Hopefully you had a second reserve starter going in the fridge as a back up? But from the sounds of

things possibly not. In that case your only recourse is to begin the task of making a new starter and hopefully you can achieve a similar microflora to give you a similar flavor and performance. Remember to always back up your starter/sour in at least one different location so if you lose one, you can use the other easily grow/culture a new one having the same microflora.

Starters/Sponges / Re: Starter is eating itself

Norma;

Here is my "secret" recipe for Alfredo sauce. Very lightly saute several cloves of sliced fresh garlic in olive oil (just to pop the flavor), not to brown it. Set aside. In a sauce pan or deep side fry pan add some heavy whipping cream, heat until you just begin to see bubbles around the edges, then add the garlic and whisk in, then add Parmesan cheese until the sauce is thickened to the desired consistency, add a good dose of freshly ground white pepper and whisk in, here's the wrinkle; I then add about a dozen fresh basil leaves that have been rolled and cut into small pieces and stir in with a spoon. Have your pasta plated and immediately serve over the pasta. The amount that I normally make is based on about 1/2 carton (1-cup) of heavy whipping cream and it serves two. During the summer months I puree all of my surplus basil in olive oil and freeze. Then, during the winter months if I don't have enough fresh basil growing in the sunroom I can simply add a spoon or two of the pureed basil to my Alfredo sauce. Right now I already have four pints of pureed basil from this years crop in the freezer along with I don't know how many baggies of dried tomatoes....it's going to be a good winter. By the way, some time back I posted that I have never had any luck growing bell peppers, well, it appears that I've had a change in luck this year. While I only have one bell pepper plant (due to my previous failures) this year it is doing great! It is loaded with developing peppers that are already bigger than I've ever had before. I'm guessing that we'll soon be eating stuffed bell peppers along with our stuffed tomatoes. Life is good when the garden is great.

New York Style / Re: Is there anything better than fresh ingredients from your garden?

Bert;

From your post it sounds like your finished whole wheat or wheat crust is quite dry. This is a common problem when whole wheat or multi-grain flours are used and the total dough absorption is not properly adjusted to compensate for their absorption properties (which is somewhat higher than regular white flour). If you are making a dough in the traditional manner (all ingredients in the bowl and mix) the amount of water needed will initially produce a soft, wet, sticky dough mass, but upon standing the whole wheat or multi-grain flour will hydrate resulting in a more normal handling dough. Since all whole wheat flours and multi-grain blends exhibit different total absorption properties you will need to experiment a bit to find the correct amount of water to add to your dough, but once you have it you can make some pretty decent pizza crusts with your whole wheat flour or multi-grain blend.

Dough Ingredients / Re: Who here has tried King Arthur Whole Wheat White Flour

Deets;

You've exposed my secret, that's exactly where I got my cake recipe from. I was in scouting for a number of years and really learned a lot form it, including camp cooking, map reading and how to pick a camp location least likely to flood in the event of a thunderstorm, and where insects will present a minimum of harassment.

General Pizza Making / Re: Pizza while camping?

Mal;

I like to use 14-ounces of dough for my 12-inch deep-dish pizzas (for a dough density of 0.124-ounces per square inch of pan surface area). All of my pans are dark colored so I don't need to bake them on a stone, but I do need to move them around in the oven. I start out with the pizza on a lower rack position to get the bottom started (about 2/3 of the total baking time) and then move the pizza to a higher rack position to achieve the top bake that I'm looking for. When I've used a stone I always end up with a darker bottom color/bake than what I like. My oven is an electric oven with only a bottom element in the oven chamber and I bake at 425F. Total baking time typically runs about 20-minutes, maybe a little longer. I normally don't bake to time, but instead prefer to bake to color and doneness. I look for the nice, golden brown top color and then use a cake decorating spatula to pick the pizza up out of the pan to get a peek at the bottom. If the color is nicely browned, it's done.

American Style / Re: Simple Pan Pizza questions

Our home garden is just booming this year. We have cherry tomatoes as well as a couple of different table varieties (Comet, Big Boy, and Better Boy) as well as a heritage variety that I got from my son. We use all of them on our pizzas made at home. As many of you might know, I am not a big fan of sauce, so my favorite is to simply brush the pizza skin with a little olive oil, spread on a couple cloves of our home grown garlic (minced), followed by several leaves of our home grown basil and oregano, then the thin sliced fresh tomato (I like to place them onto a paper towel to absorb some of the excess liquid from the tomato slices). I like to just barely cover the surface with the tomato slices, then add the cheese and toppings, and finish with a hand full of shredded Parmesan cheese. We have a sun room on the back of the house where I grow basil during the winter months here in Kansas. Once you start using fresh green leaf basil, it's hard to go back to using the bitter dried stuff.

We also grow a lot of squash that we use as a pizza topping too, but our favorite dish using squash is to grate a couple medium size zucchini and a yellow squash or two, put this into a frying pan and heat thoroughly, tossing often. Then add about 1/2 cup of heavy cream, three garlic cloves thin sliced, about a dozen basil leaves, and the zest from 1/2 of a lemon, continue heating and then add 3 to 4-ounces of Parmesan cheese, stirring in until melted, serve immediately over your favorite pasta. For variety we will occasionally add pieces of fresh tomato, or use our own dried tomato (great way to use all of those prolific cherry tomatoes), or onion, and even some sweet banana pepper slices. Any way you cut it, it's good stuff!

New York Style / Re: Is there anything better than fresh ingredients from your garden?

Just as an FYI.

When it comes to whole wheat flour there is whole wheat flour from hard red winter wheat and also from hard red spring wheat. This is the type of whole wheat flour that normally comes to one's mind when thinking about whole wheat flour, then there is whole wheat flour made from hard white wheat. This is the newest kid on the block. In commercial circles it is known as Nutri-Grain Flour. This is what many of the commercial bread bakeries are using to make their whole wheat breads from. It is also very popular in schools as the bread doesn't have that typical bitterness associated with whole wheat bread made with flour from red wheat varieties, also the finished bread color is somewhat lighter in color so the bread is more appetizing to the kids. Lastly, there is whole wheat flour made from soft

wheat varieties, this is also known as "graham flour". Remember those graham crackers you ate as a kid? I bet you didn't know that they were made from a whole wheat flour? Hence the name, graham crackers. Soft white wheat varieties are typically used in making pastry and cake flours and have a lower protein content producing a weaker gluten than the hard wheat varieties.

Dough Ingredients / Re: Who here has tried King Arthur Whole Wheat White Flour

Leo;

To add to Tin Roof's comments, Harvest King flour has about 12% protein content while All Trumps has 14+ % protein content. I've used both very successfully to make thin crust pizzas of all kinds, but when it comes to making thick crust/pan style pizzas my preference turns to Harvest King as it does not give the excessively tough and chewy characteristic that I get from All Trumps in this application. For me one big factor in using one over the other is availability, as Tin Roof said, the Harvest King flour can be purchased from most supermarkets as Bread Flour (intended for use with bread making machines) while All Trumps can be a bit more difficult to come by and is also more pricey. Like a friend of mine used to say "You pays yer money and takes yer pick".

New York Style / Re: All trumps VS harvest king both from general mills

It all depends upon the oven type and the pizza you're making as well as your formulation and the pan color in the case of deep-dish or pan pizzas.

With thin crust and deck ovens, while many like the attributes of a pizza baked directly on the deck, others do not, and some don't like the mess they get from all of the peel dust going into the oven so they opt to bake on screens. Remember, unless manufactured with some type of release agent, all screens will need to be seasoned if you plan to bake on them or you will experience problems with the pizzas sticking to the screens. When an air impingement oven is used with an open wire link conveyor the pizzas are not supported well on the conveyor so some type of baking platform must be used under the pizzas while conveying them through the oven.

Dough Clinic / Re: Prepping

When you're using a screen and your dough exhibits a decided propensity to flow into the screen openings it usually means that your dough is over absorbed and too soft for use on the screen. The new Hex Disks from Lloyd Pans have a smaller opening than the usual metal screens so they offer better resistance to this problem. The fact that you are also having a problem using a wood peel also give insight that you might have too much water in the dough. Always be sure to use some "peel dust" under the skin when you place it onto a wood peel for dressing. While there are many different ideas as to what constitutes a good peel dust, my personal favorite is equal parts regular pizza flour, semolina flour and fine cornmeal.

Dough Clinic / Re: screens

Jako;

Due to the insulating properties of wood it is not a good substitute for a pizza screen in this application. You might check around to see if you can find a metal fabricator who can provide you with squares or rounds made from a fairly light weight aluminum and then have them perforated. These will work similarly to a screen in allowing you to efficiently cool the skins. I'm guessing that you probably won't need more than a dozen pieces as once the skins are thoroughly cooled you

can stack them for use later in the day, thus freeing up the perforated sheets for use in cooling more skins. Another thought just occurred to me. Look around for some type of cheap, light weight aluminum tray/pan that is already being used in the restaurant trade locally, then all you will need to do is to perforate them (you can do this yourself using a drill and a 3/8-inch/9.3 mm drill bit. Examples of what I'm referring to can be found in the Allied Metal Catalog

<www.alliedmetalusa.com> page 57 of their 2011-2012 catalog. Keep in mind that you don't need to perforate to the extent that these commercial pans are perforated, any perforations that you can add to a solid pan will help improve the cooling efficiency of your skins. If you look through their on line catalog in the section for "pizza supplies" you might be able to get some additional ideas.

Dough Clinic / Re: Prepping

Deets;

As an ardent deer hunter I find myself out in the boonies more often not, and with my background in food, you can guess who ends up being the camp cook. I've made decent pizza (considering the circumstances) any number of times using nothing but my steel frying pan. Dough from scratch, butter or margarine in the pan, press the dough into the pan (after 18-hours cold fermentation), then apply sauce of slices of fresh tomato, followed by cheese, pepperoni, sausage, onion, and green peppers. Top heat is provided by the lid set to allow for moisture to escape during baking. The rest of the guys all identify it as "pizza" so it hasn't lost identity, and to date I've never had any complaints, except occasionally they complain that there wasn't enough, so it really isn't all that bad. It's also a great way to use up camp left overs too. By the way, that same frying pan is also used to bake dessert. Cake from a box mix, mixed with water, an extra egg, and pieces of canned fruit. The cake bakes while we're eating dinner and putting camp in order, by then the cake is finished baking and has cooled tolerably for serving. Again, no complaints.

General Pizza Making / Re: Pizza while camping?

While in Mexico some time ago we made the stuffed crust pizzas using a domestic white cheese commonly referred to only as queso blanco. This is the same cheese that is used when preparing fried cheese plates as an appetizer. The color and texture of this cheese is reminiscent of Mozzarella cheese. Maybe you have something similar in Bolivia? Very soft cheese is difficult to use in making a stuffed crust as it doesn't hold shape well at all, and as it melts it has a propensity to boil/melt out.

General Pizza Making / Re: Help with stuffed crust

Jaco;

In a word, no. The foil only serves to slow down the rate of cooling. The screens allow for a rapid cooling of the skins while allowing them to breathe to some extent, thus preventing development of condensation between the skin and the foil. Packaging the skins, especially in a vacuum package is not recommended, at least until the dough skins are all thoroughly cooled to the temperature of your retarder.

If you have room in your freezer, and have a supply of sheet pans or flat pizza disks you might try putting the pans/disks in the freezer for an hour, and then placing the skin onto a frozen disk/pan, turn over after about 20 minutes and allow to thoroughly cool/chill for another 20-minutes, then you might be able to stack them with a piece of parchment paper between each skin and store under constant refrigeration (2 to 4C) in a plastic bag (only after they have been thoroughly cooled). To use these refrigerated skins, remove from the plastic storage bag, place

onto a lightly floured surface to warm for about 20 to 30-minutes, then straighten the skins out to full, desired diameter, place onto whatever your prep surface is and prep for the oven. I might also recommend docking these skins too and having a bubble popper near at hand while they're baking.

Dough Clinic / Re: Prepping

Jako;

Probably the most commonly used method is to place the opened skins onto pizza screens (the type some operators bake on), then store them on a wire tree rack in the cooler. I like to store them uncovered for about 30-minutes, and then slip a suitable plastic bag over the rack to prevent excessive drying. To use the skins, remove from the cooler about 20 to 30-minutes prior to anticipated use, remove the skin from the screen, and place onto a baking platform (screen, disk, etc.) touch up the skin bringing it out to full diameter, dress and bake. If you bake right on the hearth, place the skin onto a wood prep peel with a little peel dust. If you bake on a screen DO NOT dress and bake the skin on the screen that it was stored on unless you remove it first. Failure to do this can result in the crust becoming stuck to the screen as the dough expands down through the screen openings, expanding as it does and effectively locking the baked crust/pizza to the screen...BUMMER.

Dough Clinic / Re: Prepping

Cindy:

I agree totally with Peter. Additionally, I just wanted to confirm that you are opening the dough into pizza skins by hand and not using a rolling pin. The use of a rolling pin can significantly degas the dough and restrict oven spring. When opening the dough I like to pretty well keep my fingers away from the edge/rim portion.

Dough Clinic / Re: Help with Oven Spring

Ed and Joe's!!!!

They have been in business there for over 50-years and still going strong. They used to be located just a block north of the train tracks on Oak Park Avenue on the west side of the street behind what used to be Funks Tavern. My sister and brother still live in Tinley Park and every year when I go up there to visit them we order out an Ed and Joe's Pizza (still the same from when I was a kid in the 50's). Beggar's in Oak Forest is also a pretty good bet (north of the train depot on Cicero (about 3-blocks on the west side of the road). Another good one in Oak Forest is Ken and Dicks at 15801 Central Avenue, (708-535-1212). The only excuse I've ever been able to come up with for not wanting to leave Illinois is the Chicago pizza.

Pizzeria/Restaurant Recommendations / Re: Need South Chicago Suggestions

Michael;

A good quality anodized, black colored pan or baking disk will probably serve you just fine. Optional, and recommended, is a nonstick finish. You can see pans of this type at Lloyd Pans <www.lloydpan.com>. Some of their pans and disks are to some extent product specific, meaning that they were designed to provide a superior bake to a specific type of pizza. For example, their cloud pattern, Hearth Bake Disks are designed specifically for use with the newer air impingement ovens operating at temperatures of 475F and higher using dough formulas devoid of any browning agents, such as sugar, milk or eggs. The Hex Disk is well suited to making a Domino's type of pizza as well as use in reheating certain types of pizza slices. This company also has a bunch of neat gadgets specific to the pizza industry.

Take a look at their offerings. The Lloyd pans and disks are about as close to "bullet proof" as one can get.

Commercial Ovens / Re: Commercial Pizza Oven (thin based)

I'm not familiar with the product that you mention, but a good many pizzerias do produce what they like to call pepperoni rolls or pepperoni sticks. These are really nothing more than regular pizza dough to which they add chopped or ground pepperoni at the rate of about 25% of the dough weight, so for 1-pound of dough they would add about 4-ounces of pepperoni.

Dough Clinic / Re: pepperoni bread

Peter;

In 2009 I wrote an article that was published in my column (In Lehmann's Terms) titled "Important Considerations When Considering an Oven For Your Pizzeria". This is a good read for anyone just getting into the pizza business and trying to figure out what oven is the best choice for their store concept. I was provoked into writing this article after seeing all too many start ups struggling with the wrong oven for their pizza type or store concept, and then needing to back away from their present oven only to go out and purchase yet another oven. The pizza that broke the camel's back was a pizzeria in Nebraska that I was called to address a soggy pizza problem that was driving business away. Turns out their concept was one of "more toppings makes for a better pizza". Agree or disagree, that was their concept. The ovens they were using were conventional deck ovens (no significant airflow) so there was no way to remove all of the moisture being released from the vegetable toppings as they were cooked. I called in Middleby Marshall with their traveling display ovens (tractor-trailer with various ovens used for on-site demonstrations) and with their air impingement oven of the time they were able to drive enough water from the pizza during baking that the pizza was no longer soggy and the store was able to retain their original concept. The kicker: The individual owning the store had to abandon his three existing deck ovens and purchase a double stack wide body air impingement oven, effectively doubling his oven cost within his first year of operation. Bummer!

Commercial Ovens / Re: Commercial Pizza Oven (thin based)

When available, I will always go with vine ripened, fresh sliced tomato. That's the best part of summer here in Kansas as I grow plenty of my own tomatoes. When fresh tomatoes are no longer available, I like to use the Stanislaus 74/40 Tomato Filets (well drained and applied just as they are). The flavor and texture is fantastic in my opinion.

Sauce Ingredients / Re: Do you prefer using canned or fresh tomatoes?

TD;

That certainly looks like scorched flour to me too. It's OK to use dusting flour on the bench to help form the pizza skins but the trick is to remember to get most of it back off again. When I'm in the shop I simply give the skin a toss or two and all of the surplus dusting flour is gone, but this really doesn't fly well at home so I'm forced to use a bench brush to lightly dust off the skin just prior to transferring to the prep peel. You typically don't need much flour on the peel to get good release, but if you do, try using a blend of fine cornmeal and semolina flour for your peel dust and try to dress the skin as quickly as possible, remembering to give it a shake to confirm that the dough is free from the peel before taking it to the oven. The rest of your crust, where there isn't any scorched flour looks like it is beginning to develop some pretty good coloring.

Neapolitan Style / Re: Burnt crust

V;

I agree with Jeffery. Your flour might have been exposed to less than ideal storage conditions at some time after milling and bagging. Try sifting the flour to remove and clumped flour for now. You might even put some of the clumps into a plastic vial and send them to the distributor so they can take appropriate action.

Remember, if they don't know about it, they can't do anything about it.

Dough Clinic / Re: Small clumps in caputo blue label!! help

Michael;

I've written a lot about pizza ovens and how to choose the one best suited to your specific needs for Pizza Marketing Quarterly <www.pmq.com>. You should be able to find it in the archived articles I've written. A lot goes into selecting the correct pizza oven: type of pizza(s), volume needed, speed of bake desired/needed, closed/open kitchen, store concept, space available are to name but a few. These are all addressed in my most recent article on choosing the right pizza oven.

Commercial Ovens / Re: Commercial Pizza Oven (thin based)

A.D.:

While pizza dough certainly can be made without salt, the flavor might leave a little to be desired, but you could easily drop down to a level of 1% salt based on the total weight of the flour. I also have a very special (brand new product) coming in next week that is designed specifically for individually on a low sodium diet. The product will soon be available at Walmart, but if you will send me a name and mailing address I'll be glad to send you a bottle along with the data sheet on it. I'll be out of the office all of next week but I can send it to you on the following week (July 15th). If you use fresh tomato, either sliced, diced, torn or pureed you can control the salt in the sauce (none is needed) so now you're down to the cheese (which is naturally high in salt). But you can address that too by going to a reduced sodium cheese. I would suggest contacting Boar's Head (800-352-6277) to get information and availability on their reduced sodium provolone and meats. B.H. has taken quite an initiative in developing reduced sodium products for the consumer market.

Remember to send me a mailing address and name, and I'll send the reduced sodium sample to you free of charge.

Dough Clinic / Re: Low sodium flavorful dough?

Scott;

You're not alone, I don't see any significant difference in the flavor of products (breads and pizza crust) when made with either compressed or IDY. Compressed yeast has three recognized aromas 1) Kind of a musty, old, damp newspaper like aroma. This is the normal aroma for compressed yeast and it is indicative of good quality yeast. 2) Compressed yeast can also have an ammonia smell to it. This is also a normal aroma as the ammonia is simply left over from the culturing process. 3) Then there is a somewhat sharp, offensive odor which is common to yeast that is beginning to die-off. In addition to aroma, look at the color of the yeast, it should be a light tan/buff in color with some streaking, but if the yeast is turning a dark color (muddy gray to brown) this is an indication that the yeast is getting too long in the tooth. Because compressed yeast is highly perishable, and as it dies off, it releases glutathione (an amino acid contained within the yeast cell) which actually enhances dough mixing, in many home baking situations it may appear to actually perform better. This is NOT the case in a bakery or retail setting though. Glutathione is a

dough relaxer (commercially sold as "dead yeast") and as such, it works exactly the same as L-cysteine aka PZ-44 giving a softer, more extensible dough with somewhat improved expansion properties during baking which often result in a drier crumb structure, and a crispier outer crust, which can also be said to give improved flavor to the baked product.

Dough Ingredients / Re: The unique crumb characteristics of Cake Yeast

Air;

The salt level will typically come in at between 1.75 and 2.5% of the total flour weight. Without knowing what type of pizza you are making I cannot comment on the sugar level. Nor can I give you any specific amounts without knowing the amount of flour used in your dough formula/recipe.

Dough Clinic / Re: sugar and salt rate?

It is normal for a pizza crust to become soggy with time after baking, but there are some things that will hasten the transition from crispy to soggy.

- 1) Pizzas that are baked at a very high temperature may only develop a very thin crusty layer on the bottom of the pizza. This can quickly go from crispy to soggy. Parbaked pizzas seldom ever experience this problem.
 - 2) Dough weight is incorrect for the size/type of pizza you're making. Typically a pizza skin that is stretched too thin, especially across the center section will crisp during baking but loses that crisp very quickly. This is normally accompanied by a gum line.
 - 3) Excessive use of sauce and/or toppings, or sauce watering out.
 - 4) Failure to place the pizza on a screen so it can steam off immediately after baking without the steam being driven back into the pizza as it would if placed onto a serving tray or other solid tray immediately after baking.
 - 5) If the problem is due to excessive oil, look at the cheese and/or pepperoni, as either of these have a reputation for potential to oil out. Some cheeses and pepperoni exhibit much greater resistance to oiling out than others.
- There are probably a few more that aren't coming to mind right now, but these are what I think might be the most common causes.

New York Style / Re: Why is my crust soggy??!!

G.R.;

A number of years ago we developed a process to help newbies open the dough into pizza skins with a much more consistent cross section thickness. We have demonstrated that we can train a total novice (someone who has never opened a dough ball into a pizza skin) in about 15-minutes in the "art" of opening dough into pizza skins. The procedure is simple, but as you have noted, it does require the use of a sheeter/dough roller. Using the sheeter, set the rolls to open the dough to about 2/3 of the desired finished diameter, then finish opening the dough by hand to the final size. Works like a charm! At A.J's here in Manhattan, Kansas we are constantly training K-State students to work at the dough bench so we are always training someone. That 15-minute time might even be a little on the long side. We typically run the dough twice through the sheeter to get a round shape of the correct diameter, we pre-sheet about 6 dough pieces and stack them up next to the sheeter, then we start bench stretching to finished size. For appearances, we finish with a hand toss.

If you want to learn more about pizza production we have our annual Practical Production Technology and Innovation course coming up October 28 - November 1, 2013. To get information on this course please send an e-mail to Jeff Zeak at <jzeak@aubonline.org> .

[**Dough Clinic / Re: Dough consistency problems, I need help.....**](#)

We allow the bread to cool at least 30-minutes before cutting it. If it will be sliced, we go with 45 to 60-minutes.

[**Off-Topic Foods / Re: Bread is undercooked?**](#)

JD;

I'm not a microbiologist, but I am betting that there is more than just one or two different strains of lactic acid forming bacteria. Each of the different types creates a different flavor. Even in a natural sour, there are different flavors due to the different bacteria that have been cultured. I've seen some cultures selling for as much as \$20,000.00, all because of the unique flavor resulting from that particular microflora. In a natural sour, it is possible to lose the sour all to easily. The easiest way is to let the temperature get out of control (forget to put it back into the fridge?), what happens then is that a different bacteria becomes the dominant strain, thus producing a different flavor in the end product, hence the sour was "lost". This is why we always advise if you have a really good sour, store it in separate containers in different places for management, that way if the sour is lost at one location, you can always use one of the others to seed a new culture, thus preserving the strain/balance of microflora that is responsible for the flavor you are looking for.

[**Dough Ingredients / Re: Who is a bacteria expert?**](#)

Mil;

The key to effective dough management is the temperature of the dough after mixing. In a home setting there are so many variables involved that it is impossible to give a hard and fast temperature. As a rule, 70 to 75F temperature immediately after mixing should work well for you BUT in the end, you will need to experiment to find the temperature that works best for you using your own specific dough management procedure and fridge as well as dough containers, etc. The temperature of the dough ball(s) after 24-hours in the fridge only reflects the temperature of your fridge, and 40F is right at about where I would expect it to be. When using a refrigerated dough management procedure, I think it is best to keep the dough at a temperature slightly below 45F, but do not allow it to drop to freezing (32F). The main thing is to be consistent in always having the same dough temperature off of the mixer, and then using the same management times and placing the dough into the fridge in the same location. Like in real estate, location counts in dough management too.

[**Dough Clinic / Re: Dough ball temperature after 24 hrs in fridge**](#)

JD;

How about just using plain yogurt containing an active culture to start a sour, then propagate the sour for several days and use from that to flavor your doughs?

[**Dough Ingredients / Re: Who is a bacteria expert?**](#)

Cam;

It appears that your baking temperature is too high for the type of bread that you are making.

I'm assuming that you allowed the shaped dough to proof for an hour, or more between forming and baking. This will provide for improved lightness in the crumb structure and a more thorough bake. If you are not already doing this, I would suggest it as a starting point. If that still doesn't work, you might need to reduce the baking temperature to 450F or a little less. When I make those cannon ball

breads I am normally looking at a total baking time of around 25 to 30-minutes. Really great when served with honey butter.

BTW: Your "pizza" flour should be just fine, but if you find the bread to be a little too chewy, just add about 3% fat to the dough formula.

Off-Topic Foods / Re: Bread is undercooked?

Jeff is "spot on". One trick that I occasionally use is to place the tomatoes on a few pieces of paper towel to blot up some of the excess moisture/juice from the tomatoes. Also, make sure you're not overloading the pizza with tomatoes and/or fresh vegetable toppings. This can be especially problematic in a commercial deck oven or home type ovens with limited airflow characteristics. The air impingement ovens that are all the rage to day with the big box chains actually do an excellent job of managing all that moisture, but same cannot be said for deck, woodburning, or home type ovens. One thing that you might try is to very lightly paint the pizza skin with oil before you dress it. The oil will help to create a barrier to the penetration of moisture into the dough, thus allowing more of the moisture to evaporate without soaking into the dough during baking.

Dough Clinic / Re: Pizza dough is gluey and sticky under fresh ingredients.

Is it possible to make a New York "style" pizza using a pizza disk or screen? You betcha! You could probably make it on a block of wood too. The operative word being "STYLE". To a purist, the answer is emphatically NO! but we are not talking "New York" pizza (authentic), we are talking New York style. Just what is a New York style pizza??? There in lies the issue. The word style is open to interpretation. Just a couple of meanings are: In the manner of, or in the appearance/likeness of. Even these definitions leave a lot to the imagination. A number of years ago I served as an expert witness in a high profile legal case where this exact issue was highly debated and I can tell you first hand that there were literally thousands of exhibits showing things made in the "style" of which really didn't look a whole lot like the item it was made in the "style" of. For example, with a pizza, if the crust is soft and chewy like a N.Y. pizza, that would qualify it to be said to be a New York "style" pizza, never mind all of the other features of the pizza.

Just bringing another view point to the table.

New York Style / Re: Is is possible to bake NY-style-ish on a pizza disc?

Pdog;;

I ride motorcycles during my free time and I liken pizza research/experimentation to a motorcycle trip where the journey is as much, or more, fun than the destination. You might be surprised to learn that a couple of notable food items we have today actually started out as a mistake while making something else; Schlotsky's sandwich bun was the result of the baker incorrectly scaling the water (too much) to make the bun. We all know how that turned out.

The pretzel is said to have been created when a baker was making a roll, as he was peeling the rolls into the oven one of the rolls fell off of the peel and landed in the container in front of the oven that held the water used to swab the wood ashes off of the oven deck. Wood ash is an alkali, so the water was presumably pretty alkaline. Since flour and dough were too hard to come by, he plucked the roll from the bucket, wiped it off (or so it is said) and proceeded to place it into the oven. Upon removal from the oven the roll looked different from all of the others (bright shiny appearance) and it tasted different too (like a pretzel rather than a roll), hence the pretzel was born.

Today's mistake, tomorrow's new food/pizza concept. :)

New York Style / Re: Flour for shaping the skin

The biggest problem I had with my steel plate was rusting, especially if I didn't use it for a week or so, until my wife suggested that I season it like her cast iron frying pan. When the steel rusted, even after I scrubbed it well to remove all traces of the rust I still got something of a metallic taste imparted to the crust with the first pizza I baked on it, all was good after that. I even use mine for baking bread on (round loaves/cannon balls) and it even works well in that application.

BTW: Your steel plate will become naturally seasoned over time due to the natural oils in the materials (flour, corn meal, etc.) coming into contact with it, but I didn't want to wait a couple years for that to happen, besides the rust issue was killing me.

New York Style / Re: Help with my first pizza!

Like a good cast iron pan I would suggest seasoning it first.

New York Style / Re: Help with my first pizza!

To the best of my knowledge, a different strain is used for the dry yeast products. It is still S.C. but just a species that is better suited to the drying process, hence improved yeast survival after drying. Since there are literally millions of different strains of yeast available to choose from, this does not surprise me in the least. There are also some select strains that have a thicker cell wall and as a result demonstrate improved survival/performance in a frozen dough application.

Remember, it's the ice crystal that forms inside of the yeast cell which with slow freezing, can grow to such a size as to puncture the yeast cell wall thus reducing its survival and/or performance after the dough is thawed. The thicker cell wall is better capable of resisting the damaging effects of the ice crystals.

ADY is a good product, but it does have some shortcomings, it does not exhibit the consistency in performance needed in commercial applications, but in home applications these differences just can't be seen, not that they aren't there, but who at home ever complains the the dough took an extra 5-minutes to rise to a certain height than it did a week ago? That CANNOT happen in a commercial setting since it would upset the entire timing of the bakery. IDY, on the other hand was actually developed for the commercial baking industry, not here in the U.S., but in Europe, hence more attention has been focused on achieving a consistency level of performance, which it does demonstrate. We have done numerous real world tests on the different brands of IDY and all of them are so incredibly consistent that over a three year testing period control doughs ALL and ALWAYS gave final proofing times within two minutes of the fixed target time (60-minutes). That is a plus or minus of only one minute for doughs that were made by the 70/30 sponge-dough process, given 3.5-hours of sponge fermentation, mixed to full development, given 15-minutes floor time (rest) then divided, given 10-minutes intermediate proof (rest), molded, panned, and given a final proof (rising) at 100F/85% R.H. with a targeted time of 60-minutes. The consistency with the IDY was significantly more consistent than we ever got when using compressed yeast (which in reality is rather variable) giving a variation in the plus or minus range of 3F. ADY was in the range of plus or minus 6-minutes. In a home setting where dough absorption is not controlled, dough temperature is not really controlled in most cases, and room temperature varies considerably, not to mention scaling accuracy, not just with the yeast, but with the other ingredients too, is it any wonder why we don't see these differences? But with that said, those differences still do exist.

Neapolitan Style / Re: Explanation of Yeast Options/Approaches for Neapolitan Pizza

Dhorst;

Actually, Wondra flour is an "instantized" flour, meaning that it has been modified to absorb water very quickly. If this happens to the flour when used as a peel dust it can go from flour to a paste and help to glue the pizza skin to the peel if you are not fast to make the transfer from peel to oven. Another interesting peel dust is the use of Japanese bread crumbs. There is a commercial product available called "Crispit" and another called "Pizza Crisp" that are based on this aspect of the fine ground bread crumbs. With all of the interest in healthy eating these days we are also seeing greater use of different types of fiber materials used as a peel dust too. Fiber is actually a very good peel dust since it is so slow to absorb water/moisture, and when it does, it has a tremendous capacity to do so.

New York Style / Re: Flour for shaping the skin

I'll weigh in on the yeast thing too.

All yeast exhibits some type of a "lag" time from the time it is added to the dough until it begins to actively ferment. For compressed yeast this lag time is typically in the 15 to 20-minute range. This is why large bakeries have a hard and fast rule that the dough must not be allowed to receive more than 20-minutes floor time (rest between end of mixing and dividing/portioning the dough). If the yeast begins actively fermenting before the dough hits the divider the density of the dough begins to change rapidly, making accurate scaling extremely difficult (by law their weights have to be accurate). The fourth type of yeast that most of us don't hear very much about is liquid/fluid, or as it is correctly called, cream yeast. Cream yeast contains about 80% water as opposed to about 70% water for cake/compressed yeast. Cream yeast is the exact same as compressed yeast with the exception for the difference in water content. It is intended for use only by the largest bakeries with suitable refrigerated storage tanks for holding it. The main benefit to cream yeast over other types of yeast is cost (it's cheaper to buy). For a large wholesale bread bakery the difference in cost of \$0.01 (one penny) per pound in yeast cost can amount to something close to \$10,000.00 a year.

If anyone wants to learn more about yeast, a good reference is Baking Science and Technology by E.J. Pyler. This is the hand book of the baking industry. Many libraries will have this book available and it may also be available on line. We also have them available for sale too.

Neapolitan Style / Re: Explanation of Yeast Options/Approaches for Neapolitan Pizza

Steve;

From the looks of your dough ball it should be just fine out at 3 to 4-days. If it begins looking a bit too over fermented, you can always re-round the dough ball(s), then wait a few hours for them to loosen up before opening them into pizza skins. If you can, get yourself a wood prep peel and a metal blade oven peel. If you research back through the archives here you will find some excellent posts on home made wood peels.

New York Style / Re: Help with my first pizza!

Steve;

Don't forget when you turn the dough ball out of the bowl to allow it to drop into a container of dusting flour, which can also serve as a peel dust to facilitate transferring the dressed pizza skin from the peel to the oven for baking. While there are as many different opinions as to what constitutes a good dusting flour/peel dust as there are people making pizzas, my own personal favorite is made from equal parts/volumes of flour, semolina flour, and fine grind corn meal,

placed into a bread bag and shaken (never stirred), and used as needed. I like to open the dough most of the way on the bench/counter top and then pick it up and transfer it to the peel (with some dusting flour/peel dust) where I finish bringing the pizza skin out to finished diameter. Be sure to give the peel a shake occasionally to make sure it remains free from the peel. Once you get a feel for it you won't need to shake it as often. Better to shake it once too many times than once not enough. As for "round" who ever said that pizza had to be round? We make what we call free form pizzas all the time. The irregular shape give it a more rustic look, and it tastes just as good. As for getting the dough skin stretched into a round circle, with practice it will come much easier. Until then, enjoy your pizza making experiences.

New York Style / Re: Help with my first pizza!

Without seeing a copy of the dough formula and dough management procedure employed, along with baking conditions it is difficult to say what the problem is, but if the dough formula doesn't contain any fat, that might be a contributing factor to a hard crust. Since fat is a tenderizer in the world of dough formulation you might try adding fat (oil or shortening) at the rate of 3% of the flour weight to see if that resolves the problem. Also, keep in mind that a dough made with a low absorption rate (50% or less) might also produce a hard finished crust characteristic.

Dough Clinic / Re: My pizza came out too hard....

Jamie;

As I always say, "Temperature control is the key to effective dough management". I'm betting that variations in finished dough temperature are creating greater differences in your dough than differences in kneading/mixing. A thermometer is cheap and it is easy to control finished dough temperature through minor adjustments in the temperature of the water that is added to make the dough. Depending upon how you are handling the dough after mixing, a difference of only a few degrees in finished dough temperature over 50+ hours can have a rather dramatic impact upon the finished dough at the time of use. If you are not already doing so, I would suggest getting a note book (baker's journal) to keep track of your experiments over time. This will allow you to get a better feel for your dough, and develop a history of what works and what doesn't work in your specific application. Be careful though, as you might end up like Norma, with the curiosity of a cat and never ending desire to improve upon your dough. Norma, please take that as the compliment that it's intended to be.

Neapolitan Style / Re: The dark horse that is gluten development

Susan;

Fermentation plays a big part in the flavor equation. You might try making a dough and rather than taking the dough directly to the bench for balling, start by taking only one dough ball from the bulk dough, allowing the rest of the dough to ferment at room temperature for 30-minutes, then take another dough ball, keep repeating this in 30-minute increments until you are out of dough. Be sure to tag each dough ball so you will know how long it was allowed to bulk ferment for. This will provide for significantly more fermentation to the dough, which should help to provide the finished crust with a more pronounced fermentation flavor. You might need to do this a couple of times to find the time that works best for you and gives the finished flavor you're looking for. While I don't normally do it, it is perfectly OK to re ball the dough after allowing it to temper. My only argument with doing it is that it adds another couple of hours to my scheduling. I'd rather just pull the dough from the

fridge, allow it to temper AT room temperature for 90-minutes and then begin making pizza.. You've just got to find what works best for you. The best part about experimenting with pizza is that even the mistakes taste good.

Dough Clinic / Re: Improving Dough's Flavor

Susan;

That makes perfect sense with the SAF Gold.

Do you know what the dough temperature is immediately after mixing?

Do you take the dough directly from the mixer to the bench/counter for cutting and balling, or do you allow the dough to bulk ferment for a period of time before cutting and balling it?

Dough Clinic / Re: Improving Dough's Flavor

Susan;

According to my calculations at 6-grams per teaspoon and approximately 1-pound of flour that you are using, your salt level is only about 1.3% which is a bit low for optimum flavor. I would suggest increasing the salt level to about 1.5-teaspoons for about a 2.2% salt level.

If the top of the pizza is getting done too fast you might also try moving to a slightly lower rack position for your baking as this will increase the bottom heat while decreasing the top heat.

To achieve a more open crumb structure and possibly better crust browning you might also consider increasing the amount of water that you are adding to the dough by about 1-ounce (again, assuming you are using about 1-pound of flour. I also noticed that you are using the SAF Gold Label yeast, is there a reason for this? The Gold Label yeast is actually intended for use with high sugar doughs such as sweet dough and Danish while the Red Label is intended more for typical U.S. bread and pizza dough formulations.

Dough Clinic / Re: Improving Dough's Flavor

Susan;

If we had a copy of your dough formula that would greatly help determine what might be necessary to achieve the flavor profile you're looking for. Two things come to mind:

1) Check your salt level, it should be around 2% of the total flour weight to promote the best finished crust flavor. Crusts that are deficient in salt generally have a flavor that is best described as being flat or even starchy.

2) You said something about not getting enough crust color. Proper baking and development of the crust color are vital in flavor development in the finished crust. I wouldn't recommend using more sugar to improve the crust color as this will also make the crust sweeter tasting, which may not be the flavor profile you're looking for, so at this time I might suggest seeing if you can bake at a higher temperature or for a slightly longer time.

Dough Clinic / Re: Improving Dough's Flavor

Wes;

Here is what I would suggest:

1) Delete the NFDM to reduce the crust burning on the edges.

2) Continue managing the dough as you are, but after you sheet the dough the first time , before giving it the first 3-fold, brush some melted Crisco over 2/3 of the dough surface, then fold the dry side over onto 1/2 of the side with Crisco, then fold the final 1/3 over on top so you will now have layers of dough and fat. Let the

dough rest long enough to sheet it out again and repeat with another 3-fold and Crisco addition. Allow the dough to rest again until the dough can again be sheeted. This time give the dough a 3-fold but without and fat addition, then put into the fridge to rest overnight. On the following day, remove dough from fridge, allow to temper at room temperature until the dough can be easily formed to fit your pan. Use a greased or oiled pan, allow the dough to rise in the pan for about 45-minutes (you may need to experiment to find the best time to give you exactly what you are looking for), then dress and bake.

Note: Each time the dough is sheeted it should be sheeted 90 degrees from the direction it was previously sheeted.

If the dough is sized for just a single pizza, some people like to fold the dough that last time so it just fits into the pan. Be sure to place the dough into the pan so any overlapping dough edges are placed down.

Let me know how if this gets you closer to where you want to be.

Dough Clinic / Re: Advice On Dough Processing

Ron;

When you used the regular vegetable oil exactly how did you use it?

American Style / Re: The secret of pizza hut shiny crust ?

I am working on a concept right now that calls for holding the finished pizzas in a temperature/humidity controlled cabinet, probably like Norma has (The one we are working with is made by Hatco). The pizzas are held at 145F and when an order is placed, the slice is removed from the cabinet, placed in a small counter top conveyor oven (Blodgett) and timed so by the time the money transaction has taken place the pizza is out of the oven. The idea is not to bake the pizza in the small oven, but rather just to heat it up a little bit more and to help crisp it a bit too.

Shop Talk / Re: keep slices warm in the bar..

Norma;

As you may already know, all of the existing flour quality assessment/measuring methods are somewhat time consuming, and to some extent accuracy of results contingent upon operator technique. The use of IR addresses both of these issues, but that isn't the driving force behind our work, as our world population grows, producing food will become ever more problematic and critical. The conceptual vision of a bakery in the future (we're only talking at most, 50-years) is one that is essentially fully automated. The variability of flour has presented the greatest challenge to developing this bakery. Our work is targeted toward using IR to measure (in real time) the absorption and mixing time characteristics of the flour, and then to make automatic changes as needed to produce doughs that are consistently the same (remember GIGO). We also use IR to look for specific ingredients in the dough to ensure the automated ingredient delivery systems are functioning properly. The level of confidence here needs to be high enough to allow for automated correction of any ingredient(s) during the dough mixing cycle, all without human intervention. The rest of the processing line is pretty straight forward and pretty well automated to a hands-off level already today. A good example of this is in the Rheon Bakery in Orange, California. The Rheon Company operates a bakery there making croissants to the tune of several thousand pounds per hour with only two people operating the entire line, and most of the time those two people are pushing brooms doing light cleanup work. If anyone is ever out in this area, check to see about getting a tour of the bakery...it's pretty amazing.

Dough Ingredients / Re: General Mills Neapolitan Hearth Style Pizza Flour?

Z;

Actually, you can put the dough balls into the freezer to help cool them down more efficiently, but I don't recommend using a Zip-Lok bag for this purpose for two reasons. 1) It is difficult to exclude all of the air from the bag so it's easy to end up with an insulating layer of dead air space around a portion of the dough ball which is counter productive when trying to freeze the dough ball. 2) in the event that some fermentation should take place (actually a probability) the Zip-Lok bag can burst, thus allowing the dough to dry out. A much better solution is to use either new or recycled bread bags. Just oil the dough ball and drop it into the bread bag, twist the open end to form a pony tail and tuck it under the dough ball as you place it into the freezer and then into the fridge. This approach will allow the bag to better handle any pressure developed when/if fermentation takes place without compromising the integrity of the bag, plus it is a lot easier to pull the bread bag down tight against the dough which improved the heat transfer properties, thus giving more efficient and consistent cooling of the dough. One home grown pizza maker brought it to my attention some time ago that they even save and reuse their bread bags by placing them into a plastic container for storage in the fridge. I've been pretty successful folding the used bags (these are the bags previously used for my refrigerated dough balls) and placing them into a Zip-Lok bag (see, there is a good use for those bags) for storage. Storing them in this manner keeps them cleaner and reduces any possibility of developing rancidity in the oil clinging to the inside of the bags.

Dough Clinic / Re: Using the freezer to cool dough balls after mixing

Scott;

It's not that it doesn't work, it just doesn't provide consistently accurate results with our hard wheat flours. Our research has now moved past the common laboratory testing methods (Alveograph, Farinograph, Mixograph, Extensograph) for determining flour quality as we are now exploring Infrared as a rapid quality assessment tool. We can now give you protein content, dough absorption, and mixing time date in less than a minute using IR. We are presently working on finished loaf volume (a true test for flour quality) using IR correlation too.

These are interesting and changing times that we live in.

Dough Ingredients / Re: General Mills Neapolitan Hearth Style Pizza Flour?

Like Tom N. said, Butter Flavored Crisco works well. I'm especially fond of using it in my wheat or multi-grain type crust formulas. If you want to get a pronounced dairy note without adding butter, see if you can get some dry buttermilk solids. When used at about 5% of the total flour weight it provides a great buttery flavor to the finished product. If you want to try it, but can't find it send me a message and I'll see what I can do for you. One of the problems with using lard today is that it is so highly refined so as to be essentially flavorless as compared to the way lard used to be. If you have a store that caters to the Latino taste you might be able to find some imported lard (good stuff). Or save your bacon drippings from your frying pan, it also gives a great flavor.

BTW: Liquid butter milk that you can buy at the supermarket doesn't provide the same level of flavor as the dried buttermilk solids (the drying process intensifies the flavor).

Newbie Topics / Re: do you put butter in pizza or bread doughs?

Norma;

The "W" factor for flours is arrived at through the use of the Alveograph which is basically a machine that blows a bubble and measures the volume of the dough

bubble. It was designed for use with soft wheat varieties as well as European wheat varieties but it is not well suited to use with the stronger U.S. and Canadian hard wheat varieties as results are not consistent. This is why you don't see much reference to it in our wheat flour specifications.

Dough Ingredients / Re: General Mills Neapolitan Hearth Style Pizza Flour?

The thing about ash content of flour is that it imparts a dull, or some might say a grayish cast to the crumb structure. It used to be important that bread had a very brilliant, white crumb, but in today's world the average consumer doesn't really look for that anymore, infact, a yellowish/creamy crumb color is more typical today due to unbleached flour. In pizza crusts there is such a small portion of crumb in the crust that crumb color is a moot issue, additionally, with all of the toppings being dragged down over the crumb no one ever really sees the crumb color anyhow. The other thing about the ash content is that while some wheat will typically produce flour with a higher ash content, more commonly, the higher ash content is introduced into the flour through a longer extraction rate (amount of flour milled from a given amount of wheat). Hence a 76% extraction rate would mean that 76-pounds of flour were extracted from 100-pounds of wheat. Typically, the higher the extraction rate, the higher the ash content of the finished flour. This is due to milling the wheat closer to the bran (fiber) portion of the wheat berry. The flour that is extracted this close to the bran contains protein, but not a high quality, gluten forming protein, hence the resulting, high ash content flour will contain a higher protein content than the same wheat milled to a lower extraction rate. This is why we sometimes see higher protein content for flour made from white wheat varieties which don't perform quite the same as a slightly lower protein content flour produced from a hard red wheat variety. Due to the lighter color of the bran in white wheat is is more common for the miller to mill to a slightly higher extraction, to get a better yield while still retaining an acceptably white color. Red wheats, having a darker colored bran, on the other hand are milled to a slightly lower extraction to retain an acceptably white color, hence the protein is more of the high quality, gluten forming protein.

There is still a whole lot more to bran, but this covers most of what is important to us here.

Resources / Re: Shipping Flour to Australia

Cam;

In addition to what Peter has said, I would also wrap the dough balls individually to enhance their cooling. My favorite way to wrap individual dough balls is to lightly oil each dough ball and drop it into a plastic bread bag, twist the open end into a pony tail and tuck it under the dough ball as you place it into the fridge. This will allow for some expansion of the dough ball without fear of blowing out the bag. To use the dough, just remove from the fridge and allow to temper AT room temperature for about an hour, then turn the dough out of the bag into a bowl of dusting flour and begin opening the dough up into a pizza skin. Also, what was your finished dough temperature? The finished dough temperature is probably the single most important aspect of dough management.

Dough Clinic / Re: Too much rise??

Brad;

Your pizzas look GREAT!!

Look! It's a bird! It's a plane! No, it's just Brad's pizza dough! Must be time to eat!
Nice toss!

Dough Clinic / Re: Need help planning dough handling for company picnic

I've not seen a glazed pizza stone, but I have seen glazed floor tiles used in that application. I don't recommend it though as they are more prone to breaking/cracking and any little pieces of the glazed part that got ingested would be like eating ground glass.

Stones/tiles/steel, Pans & Accessories / Re: Glazed pizza stone

And if I remember correctly, in Australia the flour is milled to a slightly greater/higher extraction rate due to the white wheat being milled, and this would account for the slightly higher ash content of Australian flours. To my way of thinking, ash content is more important in flour that will be used for white bread production than in pizza production (taking into account only the impact on crumb color). From a more technical aspect, ash content can be indicative of other flour characteristics too.

Resources / Re: Shipping Flour to Australia

If you can get the domestic, organic, Australian hard white wheat milled with no additives (comes with the "organic" territory) that might also be a pretty good alternative for a lower cost Caputo-00 flour. The protein range is even similar. But I don't know anything about the availability of domestic organic flour there. Just a thought.

Resources / Re: Shipping Flour to Australia

I've got a chest freezer in my basement where I store my bags of flour in. Under these conditions the flour will easily last a full year and more. To use the cold flour I weigh out what I need and allow it to warm up for about an hour before I begin making my dough. If I plan on making dough early in the morning I will weigh out the flour the night before, cover the bowl with a sheet of plastic and allow it to warm overnight then use it as needed on the following day. I've tried keeping it in a sealed container at room temperature but I've encountered problems with flour beetles too many times. Yes, flour suppliers will tell you that their flour can be stored in a cool, dry place for up to a year and that is true IF the flour is not compromised between the time it is milled/packaged and you buy it from the store shelf. There was a reason why Grandma used to sift all of her flour before using it. I just find the freezer approach more appetizing than the sifting approach, but that's just me.

Newbie Topics / Re: flour storage?

Yep, that's why we have prep peels. Lightly topped skins can be transferred to a peel if the dough isn't too soft or warm, but when you start loading it up with some weight things begin getting a little dicey. If I were you, I'd just begin dressing all of my skins on a wood prep peel that way all of your pizzas will still be made the same way regardless of topping selection.

General Pizza Making / Re: large pizzas sticking to bench

Kirk;

The absorption properties absolutely does change. There are three things responsible for this.

- 1) As the flour ages in the bag it can/will dry out thus requiring more water.
- 2) As the flour ages in the bag it oxidizes (becomes stronger) this can result in a tighter feeling dough that is thought to be too low in absorption. Note: #1 and #2 above can combine to give you a double whammy.
- 3) Every lot of flour is made from a different grain grist (blend). No two lots of flour

are made from the same grist so it is always changing. This is why commissaries and bakeries always request Farinograph data to provide them with the absorption and mixing properties of the current lot of flour. Note: The Farinograph is a laboratory instrument used to measure absorption and mixing properties of wheat based flours.

While the flour mill does everything within its power to provide a similar product in the bag each and every time, there will be differences in the wheat used in making up the grist that cannot be accounted for. This is sometimes called crop year variation and it becomes more evident as we near the harvest time for the type of wheat used to make the flour. Winter wheat is harvested during June and July while higher protein content spring wheat is harvested in late August into September in the U.S. and Canada.

Shop Talk / Re: Can a Flour's Absorption rate change?

G.R.;

Bouncer flour is only in the 11.5 to 12% protein content range so it just barely qualifies as a "high protein" flour (whatever that is). Since you are using a bagged flour there is a possibility that the flour has dried out to some extent, thus increasing the absorption characteristics of the flour. For starters, this is what I would do:

- 1) Increase the total dough absorption to 62% of the total flour weight.
 - 2) Put the water (65F) in the mixing bowl first, then add the salt and sugar, followed by the flour and IDY.
 - 3) Mix the dough for 2-minutes at low speed, then pour in the oil.
 - 4) Switch the mixer speed to medium and continue mixing just until the dough takes on a smooth, satiny appearance. The window test is not needed for pizza doughs since they are undermixed.
 - 5) Immediately after mixing, measure the dough temperature. You are looking for something in the 80 to 85F range.
 - 6) Immediately after mixing, scale and ball the dough and place into dough boxes. Wipe the top of each dough ball with salad oil.
 - 7) Place dough boxes as they are filled into the cooler and cross stack. Allow the boxes to remain cross stacked for 2.5-hours, then down stack and nest/cover the boxes.
 - 8) The dough will be ready to use after 18-hours in the cooler, and will keep for up to 72-hours or more.
 - 9) To use the dough, remove a quantity from the cooler and allow to temper AT room temperature for 2-hours before opening into pizza skins.
 - 10) The dough balls will remain good to use for about 3-hours after you begin opening them.
 - 11) Any unused dough balls that are at 3-hours (at room temperature) can be opened and placed onto a pizza screen and stored in the cooler on a wire tree rack for use later in the day.
 - 12) To use the pre-opened dough balls just remove from the cooler and allow to temper AT room temperature for 30-minutes, then remove from the screen and touch up to desired diameter, then dress and bake in your normal manner.
- NOTE: If you are not letting the dough temper at room temperature the dough balls will be difficult to impossible to open in a pizzeria setting.

Dough Clinic / Re: Dough consistency problems, I need help.....

Cam;

If we are talking about just opening a #10 can of sauce or tomato product and pouring it into Mason jars, then capping and storing at room temperature I would

say "NO WAY" as the probability of contamination is just too great. Now, if we are talking about sterilizing the jars and heating the sauce/tomato product to above 160F and then "canning" in an accepted manner, that's a whole different story and very doable.

Sauce Ingredients / Re: Can sauce be stored in mason jars?

Derrick;

I've found that I get better results with bagged dough balls than with boxed dough balls in a scenario like this. It is also easier to keep the dough balls clean, and even if they do over ferment a little you don't have to worry about them all growing together in the box, plus when you consider the time needed to scrape a dough ball out of a dough box (granted it doesn't take long) the time needed to turn a dough ball out of a bread bag might be faster and certainly easier too. I use a plastic food tub (with a snap on lid) to put the dusting flour in and a clean 5-gallon plastic bucket for the used bags. Considering the cost of the dough boxes and the need to wash and sanitize them regularly as you will be required to do as you have taken them out of your immediate kitchen area, the plastic bags might also prove to be cheaper too. You can buy plastic bread bags by the case from anyone selling to the retail baking industry (your corner bakery). If this is something that you will do on a limited basis, you might be able to buy a "wicket" of bags from a local bakery. This might save you the expense of buying a whole case of the bags.

Neapolitan Style / Re: Soupy dough?!

Derrick;

I don't mean to toss out the old and bring in the new, but for comparison, here is a dough management procedure that works well in a scenario as you have described. Possibly you might be able to glean something from it.

- 1) Mix dough normally, but adjust the finished temperature to 80 to 85F.
- 2) Immediately scale and ball the dough.
- 3) Oil each dough ball and drop into a plastic bread bag. Twist open end to close and tuck under the dough ball as you place it into the fridge.
- 4) Dough will keep well in the fridge for at least two days.
- 5) After the dough has been in the fridge a minimum of 16-hours, they can be transported in an insulated chest with a few chemical ice packs.
- 6) The dough balls will be ready to use in about 2-hours after placing them into the insulated chest and they will remain good to use for up to 4-hours, possibly a little more.

Tip: If you need to have more than a 4-hour supply of dough on hand, pack in a few more ice packets, even a little dry ice can be used. Then, when you get to the point of sale, remove about a 3-hour supply of dough balls from the insulated chest and allow to begin tempering in another box without the ice packets. These dough balls will be ready to use in about 2-hours and will keep for an additional 3-hours in the nonrefrigerated box/chest. As you feel you need more dough balls transfer more from the cold chest to the nonrefrigerated chest for use a couple of hours later. Like I said, maybe you can glean something from this.

Neapolitan Style / Re: Soupy dough?!

What was the finished/mixed dough temperature? If it was too high (above 80F) this might be the cause. Also, high absorption doughs do not hold up especially well as a dough ball as they tend to flow out excessively. A quick fix when using a higher dough absorption is to ball the dough, oil it, then drop it into a plastic bread bag (please not a Zip-Lok) I like to use bread bags. Twist the open end to form a pony tail and tuck it under the dough ball as you place it into the fridge. When you

remove the dough ball from the fridge, allow it to temper at room temperature for an hour or more, then turn the dough ball out of the bag into a bowl of dusting flour, then proceed to open the dough ball into a pizza skin in your normal manner. This method pretty well negates any stickiness issues.

Dough Clinic / Re: Transporting dough for off site pizzas

ADY does have a limited shelf life. Retail bakeries and most pizzerias will discard it if it has been opened for more than just a few weeks (30-days max.) This is one reason for the development of PADDY (protected active dry yeast) as it is designed to have a better shelf life after opening/exposing to air. PADDY typically has a shelf life after opening of 4 to 6-months. IDY, on the other hand, works well for up to about 3 to 6-months after opening (the shelf life will depend greatly upon how you handle the yeast after opening). After that you're on your own. Several times I have tried to use IDY that was fresh opened and partially used and stored in the fridge for 11-months only to be disappointed by poor leavening power. As for proving (as the British like to call it) or hydrating and activating the yeast as we like to call it, all ADY must be prehydrated, while prehydration/activation is optional when IDY is used. Actually, I always use IDY and I always add it directly to the flour and then mix the dough as normal and I never experience any problems, but we don't all use the same mixing procedure at home so some see better performance if the IDY is prehydrated. Experimentation will show what works best for you.

BTW: Once you open a bottle of yeast you cannot exclude the air in the bottle, so oxidation takes place regardless. We have found that moisture is probably the biggest enemy to dried yeast performance/shelf life. The fridge is a good place to store it, and I would suggest that you remove it only long enough to weigh out the amount you want to use, then recap the bottle and immediately place it back into the fridge. Our main concern here is the condensation that can form on the yeast in the bottle. It only takes a couple of seconds for it to form. The individual packages are a great way to go if you live in a humid climate, or don't use the yeast very fast. The individual packets are MAP (modified atmosphere packaging) flushed to exclude most of the oxygen, providing for extended unopened shelf life, and since they are essentially a single use packet, condensation is never a problem. I buy my IDY in 500-gram packages (bags). To use it I cut a small opening in the top of the bag and pour out only what I need (extra is tossed in the trash, never returned to the bag due to the possibility of condensation. As soon as the yeast is poured from the bag, I fold the bag back down upon itself to exclude as much air/headspace as possible, secure the bag with a rubber band, and store it in the fridge. I normally get about 6-months of acceptable home performance from the yeast when handled in this manner.

Dough Clinic / Re: My bottled yeast is dead. Why?

P;

I don't think you will have any problems with what you are proposing. I would not transport the dough in the trunk of my car, but instead, put them into the air conditioned passenger compartment where you can regulate the temperature. Then, an hour or less at whatever the warehouse temperature is shouldn't cause any significant issues.

Dough Clinic / Re: Transporting dough for off site pizzas

PLEASE DO NOT hold any home made garlic oil over from one day to the next. Garlic can, and has been known to bring clostridium to the party as a guest (since clostridium is found in the soil is it any wonder why it is associated with garlic?). While we don't normally think of garlic and clostridium together, it is only because

clostridium is an anaerobe (will only grow without oxygen) and the oil provides that environment, hence the *clostridium* can grow to produce the aflatoxin botulinum resulting in botulism poisoning. As an aflatoxin, it is not destroyed by heating...and it is very deadly. It will not grow all the time, but when it does, well..... As Dirty Harry so aptly put it "Do ya feel lucky?"

[**Newbie Topics / Re: garlic oil**](#)

Arnol;

When used correctly, I don't see any difference in bake between steel, aluminum or cast iron. The operative word here is "correctly", as each type of material bakes a little differently you must make baking adjustments to accommodate those differences.

[**Stones/tiles/steel, Pans & Accessories / Re: Best Deep Dish Pizza Pan Material?**](#)

Jack;

What is your total flour weight?

[**Dough Clinic / Re: Crunchy pizza dough**](#)

Derrick;

My professional opinion is that once you achieve a certain level of flavor in a pizza crust it becomes almost impossible to distinguish subtle differences because of all the extraneous flavors associated with pizza from the sauce, cheese and toppings. This is not to say that one cannot distinguish differences between different fermentation processes, such as a sourdough process and a normal yeast fermentation process, but when consumed in context, the flavor of a pizza typically is not greatly affected by a crust that was made from a cold ferment process or a warm ferment process (assuming neither were significantly over or under fermented). Studies that we have done with pizza consumers showed that very seldom did they comment on the flavor of the crust but what they were mainly focusing on was the texture (crispiness or toughness) of the crust. Most home pizza bakers become "pizza connoisseurs" in their own right, so they are much more focused on the individual component flavors and textures of the finished pizza so for this reason we can see differences in flavor and or texture resulting from seemingly slight differences in dough fermentation. I guess what it might boil down to is are you a pizza lover or a pizza connoisseur?

[**General Pizza Making / Re: Bulk fermentaion and kneading?**](#)

Ajay;

In commercial conveyor (air impingement) ovens gas is the most efficient way to go. It produces a crispier pizza with significantly less bake time and at a lower temperature too. As for the power failure issue, if you lose electric you are "dead in the water" with both types of ovens since electric motors are used to drive the conveyor in both oven types (gas and electric) so I think that will be a moot question.

If you are really concerned over potential power failures, a gas deck oven might be a better choice since they typically don't require any electrical supply, so as long as you have gas you would be good to go.

[**Pizza Ovens / Re: Gas vs Electric Conveyor oven**](#)

M;

In bulk fermentation the dough can ferment more efficiently due to heat of metabolism. As the yeast metabolizes nutrient it generated heat at about 1F per

hour; this heating of the dough is conducive to faster, more efficient fermentation. When the dough is fermented in smaller size balls in the cooler/fridge, the smaller mass of the dough ball allows for faster, more efficient cooling of the dough. This is beneficial if the intent is to have the dough last for several days as opposed to just a single day as can be the case in bulk fermentation. There are also different flavors developed due to the differences in acids produced during warm (bulk) fermentation and cold (dough balls in the fridge) fermentation. In all cases, the fermentation period also sets the stage for enzymes and bacteria contained within the yeast to begin doing their work. Protease enzymes work on the flour proteins to give a softer, more extensible dough after fermentation; amylase enzymes convert a portion of the starch in the flour to sugars that can be metabolized by the yeast and the bacteria (*Lactobacillus*) is responsible for developing the unique flavors that we associate with fermented bread flavor. Additionally, the effects of the protease enzyme, and acids formed during fermentation work to reduce/weaken the flour proteins for improved dough extensibility and flavor. A major component of flavor as we know it is a result of protein denaturization during the baking process. The proteins that are exposed to the protease and acids are more readily denatured during baking, and hence impact the finished flavor of the baked crust. These same effects take place when a cold fermentation process is used, but they take place at a much slower rate allowing the dough to be used over a several day period of time. This is just a very brief sketch of the differences in fermentation, there have been whole books written on the topic that you can check out from a local library if you really want to learn the nitty-gritty of yeast fermentation.

General Pizza Making / Re: Bulk fermentaion and kneading?

Fran;

Please excuse me for not getting back to you sooner. I have no excuse except to say that your post fell off of my radar. In reviewing your dough formula, converting it into bakers percent it looks like this:

Flour 100% Water 51.6%

Salt 0.4%

Sugar 0.8%

Yeast 3.22%

Oil 1.41%

Comments: The salt level is much too low and that is severely impacting the flavor of the finished crust. I would suggest increasing it to a minimum of 1.75% (4.34-ounces/Call it 4.5-ounces and you'll be good)

The yeast level is quite high at 3.22% (hopefully this is compressed yeast). If my assumption is correct that you are using compressed yeast I would recommend reducing the yeast level to not more than 1.5% (3.72-ounces/Round it to 3.75-ounces). My personal preference is to have the yeast level at 1% compressed yeast (2.48-ounces/Call it 2.5-ounces). As for dough management, here is a very efficient dough management procedure for pizzerias:

- 1) Add water (75F) to the mixing bowl
- 2) Add salt and sugar to the water (no need to stir)
- 3) Add flour, and yeast (in that order)
- 4) Mix for about 2-minutes or until you don't see any dry flour in the bowl
- 5) Add the oil and mix 1-minute at low speed, then complete mixing the dough in your normal manner.
- 6) Finished dough temperature should be between 80 and 85F.
- 7) Take dough directly from the mixer to the bench for immediate scaling and balling.
- 8) Place the dough balls into plastic dough boxes, wipe the top of the dough balls

with salad oil and immediately take to the cooler.

9) Cross stack the dough boxes in the cooler for 2.5-hours, then down stack and nest or cover the dough boxes to prevent the dough from drying.

10) The dough will be ready to use after about 18-hours and will remain good in the cooler for up to 72-hours.

11) To use the dough, remove about a 3-hour supply of dough balls from the cooler and allow to temper AT room temperature for 2-hours, then begin using the dough balls to make pizza skins as needed. The dough balls will be fine at room temperature for up to 3-hours AFTER you begin opening them into pizza skins.

12) Any unused dough balls can be opened into skins and placed onto screens and placed in a wire tree rack in the cooler for use later in the day. When placed in the cooler, allow the skins to cool uncovered for 30 to 45-minutes, then cover the rack with a plastic bag to prevent drying.

13) To use the preopened skins, remove from the cooler and allow to temper at room temperature for 30-minutes, then restretch to size, dress and bake in your normal manner. If you bake on a screen, NEVER EVER dress the preopened skin without first removing it from the screen, failure to do this will result in the dough locking into the screen openings, making removal from the screen impossible.

You may need to experiment a little with your tempering times to find what works best in YOUR shop, but this should get you pretty close. Try this and let me know if it gives you an improvement, we can always make further adjustments to fine tune the formula and/or dough management procedure.

Dough Clinic / Re: Convolved Mess

My hat's in the ring too!

General Pizza Making / Re: An Idea

Arnol;

Dark colored, heavy weight aluminum pans will provide you with MANY years of great service. Cheap aluminum pans are just that, cheap. They will be easily damaged and the coating is not very durable either. Many of the big box chains have gone to the Lloyd Pans product due to their durability. These box stores probably cycle their pans more times in a week then most of us would do so in a full year. Added to that, the person handling the pans is only concerned about getting his/her next pay check, so the pans are typically handled with tender loving sledge hammer care. I've got one of those cast iron pizza pans (deepsided cast iron frying pan) and it works great, it has been in the family for over 75-years now and it still looks as good as it ever did, but it does take a little longer to heat up.

Rusting??? The only way it will rust is if you wash it, and in my house that is a short cut to a world of pain. Cast iron gets wiped out with a clean paper towel, but it doesn't ever go near water.

Stones/tiles/steel, Pans & Accessories / Re: Best Deep Dish Pizza Pan Material?

Pete;

Allow me to weigh in on this one. We have done a lot of auditing for companies big and small over the years, including some of the bigger pizza chains. When we audit a store we NEVER announce who we are, or why we are there. Instead, we just order prescribed pizza and proceed to evaluate it, along with a shopping list of other store attributes. The reason for this is because a store's product is only as good as the worst product it sends out to the customer. A great store's or chains reputation isn't built on only one pizza, but instead it is built upon the sum of all of their pizzas. I like to rank stores/chains as follows: Consistently good; Consistently

bad; Inconsistently good and bad. If I've got to beg or ask for a decent pizza from a store, there is something inherently wrong there. Just my opinion.

Pizzeria & Restaurant Reviews / Re: How to ensure the pizza you order is top quality?

Arnol;

When it comes to making Chicago style deep-dish pizza one must consider several things when selecting a pan. Steel pans work well, but they must be seasoned to give good release properties as well as improved baking properties. While this next one won't impact you at home, it will have an impact on a store's pan selection. If the pizza is sent out to the table in the pan it is baked in, the food safety laws will dictate that the pan be washed before it can be reused. Steel pans are prone to rusting, but the biggest problem is with the seasoning, if the pans are soaked in hot soapy water for any significant length of time, the seasoning will begin to peel off like a bad sunburn, the consequences of which are to raise the concern of the health department as they ponder where the material went, did it go with the pizza? Did the customer eat it? Not good. Hardcoat, anodized aluminum pans (good ones are made from heavy weight aluminum stock). The dark color of these pans will not lift off even if soaked for an extended time in hot soapy water. The finish on some manufacturers pans is very durable (can't be scratched or abraded with the edge of a coin), but just like a seasoned steel pan, the anodized coating can be damaged by cutting the pizza in the pan. This is why we commonly see the pizza removed from the pan for cutting and then placed back into the pan for serving. Pizza Hut used to do this at one time with their deep-dish pizzas, maybe they still do, but can't tell you the last time I was at a P.H., but the time would be measured in years. The better pans/coatings are also resistant to scratching when the pizza is dug/guided out of the pan using a cake decorating spatula.

Stones/tiles/steel, Pans & Accessories / Re: Best Deep Dish Pizza Pan Material?

Pete;

I like to check the bottom, then the top edge, and the cheese color along with the toppings. Each of us has a crust color or baked characteristic that we are looking for so you really can't apply any specifics, but like Walter said, it soon becomes pretty intuitive and a good oven tender can pretty well nail it "spot on" every time. Then you have the shops using the most popular type of ovens, the air impingement oven. With these ovens you place the dresses dough skin on one end of the conveyor, and a fully baked pizza emerges from the other end. Since the human element has been removed these ovens depend upon consistency to provide a decent bake, by this I mean that you must have a consistent product going into the oven to have a consistent pizza coming out of it. Dough temperature is critical, as is the temperature of the toppings, dough thickness also plays into the equation, and it goes without saying that all like pizzas must be baked on a like platform (pan, screen, etc.). These ovens are set up to bake pizzas for a specific shop, once set up they pretty well run themselves, as long as the operator continually provides a uniform and consistent product to the oven. If that doesn't happen, things go to heck in a hand basket pretty fast.

General Pizza Making / Re: Techniques for ensuring optimum bake time

Peter;

You are absolutely correct in everything you state, however, without knowing how long the dough was allowed to further ferment after the re-ballling took place, there is always a possibility that the dough might not be allowed to rest for a sufficient

time for the dough to relax after the re-ball process, hence my questioning. It is also good to note that a dough that has been over fermented, often times can be brought back to an acceptable level of performance by re-ball it and allowing it to rest until it can be easily opened. This is also an old trick for working with frozen dough that even in its prime is not the best dough, and in a heart beat can go beyond its optimum shelf life/performance, and reworking it saves the day.

As for using a re-ball procedure in a commercial pizzeria setting, I think it would be extremely difficult to keep track of the time the dough was re-balled and kept separated from dough that is ready to use. Add to this the scarcity of refrigerated storage space, and you can see the dilemma that re-ball the dough presents. Aside from this, most pizzerias are in something of a struggle just to have enough dough ready to use throughout the course of the day, and in many cases, the store owner is also chief cook and bottle washer too (help in a pizzeria is hard to find), so in many shops they are short handed to say the least and they are always looking for labor saving steps that can be implemented in their store operation. It's a whole different dimension to pizza making when we are making a minimum of 150 pizzas (minimum) a day, plus doing all of the other things demanded in the shop. Been there, done that, just like Big Dave (Ostrander) that's why we're consultants today and have little if any desire to get back into owning our own shop again, but find great rewards in helping others fulfill their goals and dreams.

Dough Clinic / Re: How do I make dough this elastic?

We love stuffed peppers! For years we have tried to grow our own bell peppers for stuffing but we have never had any real success at it since the largest we have been able to get are no larger than a hen's egg. This year we started plants from seed and grew them in the garage until they were well established and then planted them into large barrel planters along our drive way with a full southern exposure to see if we can get a crop this year. If they fail again, I guess we just were not meant to grow our own bell peppers. Other pepper varieties do excellent in those planters so this will be our last shot at growing bells for us.

Off-Topic Foods / Re: Stuffed Peppers

Spring time has finally arrived here in Manhattan, Kansas. Hard to think that just 3-weeks ago we had nearly 2-inches of snow on the ground! Due to the late spring this year I grew my plants in a protected area (garage) and moved them outside as soon as the temperature got above freezing. Basil will be ready for the first harvest this weekend (we make LOTS of pesto), tomato plants are growing well. We have over a dozen different varieties of tomatoes this year, some of them are heirloom varieties with a record of developing great flavor in our climate. Some of the pepper plants (nothing special, just bells, sweet banana, Peter, and Jalapeno) are budding already. Oregano is doing quite well and we have already been picking leaves from it. Apple and pear trees are in great shape this year, but that last snow (frost) looks like it got the peach blossoms so I doubt that we will get any peaches this year.

Off-Topic Foods / Re: Garden 2013

M;

Did I read that you "reshape" your dough balls during the refrigerated storage period? If you subject the dough balls to let's say 24-hours cold fermentation, and then reshape it you just tighten the dough back up again, so it will need even more fermentation time to become soft and elastic. This is what we refer to as a "bucky" dough condition. In your experiments, you might want to look at corralling your

dough balls in individual plastic bread bags. Oil each dough ball and place into individual bread bags, twist the open end to close, forming a pony tail. Tuck the pony tail under the dough ball as you place it in the fridge. To use the dough, remove from fridge and allow to temper at room temperature for about 1.5 to 2-hours, then turn the dough ball out of the bag into a bowl of dusting flour and immediately begin opening the dough into a pizza skin. Just a thought.

Dough Clinic / Re: How do I make dough this elastic?

PMP;

The yeast should never be allowed to come into direct contact with the salt, and when you have combined the salt and sugar, even in a slurry, you are leaving the door open to inconsistent yeast performance. Compressed yeast can be added directly to the flour without the need to suspend it first. I would still go to a fixed mixing time, if for no other reason, for consistency. Adjust the water temperature if necessary to achieve your targeted finished dough temperature. I would also suggest mixing the dough for about 2-minutes, or just until you don't see anymore dry flour in the bottom of the bowl and then add the oil and continue mixing as normal. This will give you a much more consistently hydrated dough. As for cutting, balling, and getting the dough into the cooler, you should strive to accomplish this within 20-minutes of completion of mixing. Consistency in times and temperatures will make your dough management much more effective. Remember that old adage regarding quality: GIGO, or in this case, inconsistency in, inconsistency out. I wrote an article in my In Lehmann's Terms column in PMQ Magazine on Effective Dough Management that addresses all the steps needed to be taken to develop an effective dough management program leading to consistent/predictable dough performance and improved consistency with regard to finished pizza quality attributes. If you would like some help on this, please feel free to give me a call at 800-633-5137 (ext. 165) and I'll be glad to discuss it with you.

Dough Clinic / Re: inconsistant

All;

Just to clarify a few things, IDY is best added directly to the flour, but when it does need to be prehydrated it should be prehydrated in a small quantity of water at 95F (manufacturer's recommendations) we confirmed this using instrumentation in our laboratory. If the temperature of the water is as little as 5F on either side of the 95F recommendation some gassing power of the yeast will be lost. Cold water is a real bummer with IDY since it will extract glutathione from the yeast for a double whammy, loss of yeast activity and a softer dough (glutathione is an amino acid contained within the yeast cell that when extracted has the same effect upon the dough as L-cysteine (think PZ-44). This is actually sold as "dead yeast" where it is used as a dough relaxer to reduce the elasticity of the dough. When the dough is only allowed to cold ferment you can go too low on the yeast level, this is due to the fact that all of the yeast is typically not working for you in a cold ferment situation unless you allow the dough to fully warm after removal from the cooler, which is counter productive in a pizzeria where you need to have the dough last for several hours after it is removed from the cooler. When you make your dough as "fresh" dough it is not refrigerates, hence all of the yeast is working to leaven the dough so there is less chance of developing the "dreaded gum line". What is a gum line? A gum line is defined as a gummy, somewhat under baked portion of the dough located directly under the sauce. It can range from 1/16 to 1/8-inch thick, and it looks something like a layer of pasta directly under the sauce. There are two ways to ascertain if you have a gum line. 1) Cut a slice from the pie and tear it down the

middle from heel (rim/edge) to the point observing the way the dough cleaves as you pull it apart. If the dough stretches and pulls rather than tearing cleanly, congratulations, you have a gum line. The way I like to use is to turn a slice upside down and carefully cut it using a sharp knife (Exacto Knife or a box cutter) and light strokes to cut through the bottom crust. Once you have cut the slice in half (heel to point) pick up one half and carefully look at the area just under the sauce. A paper thin layer of discolored dough (about the thickness of a business card) is perfectly normal, if it is any thicker you are looking at a gum line. Why do we call it the "dreaded gum line? Because there are so many different things that can cause it (I've written several good articles on the topic in PMQ/In Lehmann's Terms) and until you find the right cause, you can't get rid of it. Why all the fuss? A gum line detracts from the eating characteristics of the pizza, and in a DELCO situation it contributes to unacceptably tough, chewy eating characteristics that won't go away. If you are going to eat the pizza while still fresh and hot out of the oven you might not even notice the gum line, thinking it is just a tougher, more chewy pizza. There are a whole raft of things that can cause the gum line development and these are all discussed in my articles.

Neapolitan Style / Re: Is there a risk when using tiny amounts of IDY?

M;

Can you provide us with the formula/recipe and procedure your wife used and also tell us something about the flour she used.

Dough Clinic / Re: Help with Pizza dough

Brad;

The reason for running the dough balls through the freezer for only 2-hours before transporting them is to super cool them, not to thoroughly freeze them. I've done this many times with good success in places where we transport refrigerated dough balls. The dough balls will begin warming as soon as you remove them from the freezer. I do not recommend leaving the dough balls in the freezer any longer than 2-hours at the most unless you want to have frozen dough balls. The type of freezer that works well in this application is a chest freezer, if you have a reach in or walk in freezer, which operates much more efficiently, the time in the freezer will only be about an hour. Remember, we are only super cooling the dough balls, they might be slightly frozen on the outer edge but not more than that.

With the suggested dough management procedure you will not need to re ball the dough.

Dough Clinic / Re: Need help planning dough handling for company picnic

Lets take a look at a couple of things, Why would the crust be tough and rubbery?
Ans: Either too much protein in the flour you are using or insufficient fermentation for the type of flour that you're using. For your process I would say that a flour with not more than 12% protein content should be sufficient. You might even be able to drop down into the 11% protein range. Examples of this type of flour are; 12% protein: General Mills Washburn's, Full Strength or Superlative. 11% protein: H&R Bread & Pizza, King Wheat, Doughbuilder, and GM-44. By using one of these lower protein content flours you should be able to use your short fermentation time without creating a tough, chewy finished crust. As for the failure of the crust to rise during baking, this can be partially related to an overly strong dough that resists expansion/oven spring during baking, again, going to a lower protein flour should help. The fact that you are blending the salt and sugar together might also impair the yeasts ability to function in a normal manner, so I would suggest adding the yeast separately. If it is IDY or compressed yeast it does NOT need to be suspended

in water before addition. For your operation I think a better dough management process would be to mix the dough to a fixed time (say 15-minutes in low speed) as it is not recommended that you mix a dough to temperature as you will never know what the level of dough development is. Adjust the water temperature to give you the finished dough temperature you are targeting (*I'm thinking 70F water should be about right), then after scaling and balling, allow the dough balls to set out at room temperature for 30-minutes before taking them to the cooler. For a dough of your size, it should not take more than about 15 to 20-minutes to completely scale and ball. For a one day dough such as you are using times and temperatures are more critical than they are with a dough that will reside in the cooler for 24-hours or more.

Dough Clinic / Re: inconsistant

Fran;

Here is where I would begin: Add the water to the mixing bowl (70F) into that water add the salt and sugar (no need to mix together) then add the flour followed by the IDY (it does NOT need to be prehydrated), mix the dough for 2-minutes at low speed, add the oil, then mix for 1 more minute at low speed, followed by about 8-minutes at medium speed. If your mixer won't handle the dough at medium speed mix for 15-minutes at low speed, then manage your dough in your normal manner. I'd suggest leaving the dough warm at room temperature for about 90-minutes before you use it on the following day(s). Note: Dough that is formed totally with a sheeter will have all of the unique raised edge characteristics of a poker chip. To get a more pronounced edge, use the sheeter to only open the dough ball up to about 2/3 of the desired finished diameter, then finish opening the dough by hand to the full diameter. Let us know how this works for you.

P.S. Anything that you can share regarding your formula amounts will also help.

Dough Clinic / Re: Convolved Mess

Brad;

I think you might be over complicating things a bit. How about something like this: Prepare, bag, refrigerate your dough in your normal manner. Then, about 2-hours before you transport the dough balls place them into a freezer to super cool them, even if they start to freeze it really won't hurt them as you will be using them soon. Do not re ball the dough when you get to the site, instead, plan to have the dough balls out of the insulated box about 90-minutes before you plan to begin opening the dough balls into pizza skins. Be sure to oil the dough balls before you drop them into the bags so they will just drop out when ready to use. Drop the dough ball out of the bag into a container of 50% flour and 50% cornmeal, and begin opening the dough ball into a pizza skin. TIP: Drop and flour several dough balls before you begin opening them into skins as this will speed things up quite a bit. Those bags should work well. After dropping the oiled dough ball into the bag, twist the open end to close it, forming a pony tail, then tuck the pony tail under the dough ball as you place it into the cooler, this will allow for some expansion without tearing the bag(s). As you transfer the bags to the freezer, close each bag using a twist tie. Sounds like a fun day!

If you will send me your mailing address today or tomorrow I will be glad to send you a handful of bread bags and twist ties at no cost.

Dough Clinic / Re: Need help planning dough handling for company picnic

M;

With reference to gluten development at the time of mixing, in our annual pizza course we use a planetary type of mixer to develop the dough just to the point of

having a smooth skin. At this point in of development it is impossible to stretch the dough to form much of a gluten film (window pane), however, by the next morning I have a group of 4 or 5 students gather around in a circle and we stretch the dough using the backs of our hands to form a dough skin that any strudel maker would be proud of. The resulting gluten film is thin enough to clearly see skin details of your hands through it. This is the result of what is called biochemical gluten development. This is also the way dough was made prior to Mr. Hobart's creative invention. Back in the early 80's I visited a bakery in Romania that had a total of 60 dough mixing stations, each mixing station was a large bowl into which flour, water, yeast, salt, a little sugar and some oil were added. The dough was then manually stirred by two men with slightly flattened mixing sticks (think baseball bat with a flattened end something like an oar.) The dough was mixed until it looked like wet oatmeal, and then covered and allowed to ferment for several hours, it was then transferred to a work table where it was given a couple folds, cut into pieces (never mind scaling), placed into beehive baskets, proofed, turned out of the baskets onto sheet pans and transferred to the oven for baking.

As for high gluten flour, technically it doesn't exist as was correctly indicated. Flour contains seven different proteins including glutenin, and gliadin which, when agitated in the presence of water combine together to make the adhesive mass that we call "gluten". As a general rule, the higher the protein content of a flour, the more gluten can be formed from it, but this isn't always the case, and to add confusion to this we then encounter differences in gluten properties which basically put, means that some gluten is strong, and some is weak, some is tight, some is more elastic, and this has been the subject of VERY EXTENSIVE research world wide for over 35-years now, and we still don't know why these differences exist or how to test for them aside from an actual mixing or bake test. Flour is not so easy to fully understand, it is a very complex ingredient.

Dough Clinic / Re: How do I make dough this elastic?

Peter;

I forgot to add, that this is most likely the reason why the pizzas are baked on a screen as these issues would be mitigated or atleast greatly reduced in severity. When I did the work many years ago we were trying to achieve a fried characteristic on a hearth baked pizza.

Tom Lehmann/TDD

New York Style / Re: Brushing crust and bottom with EVOO?

Peter;

If the pizza skin is opened on an oiled table and baked directly on the hearth two things will happen. One is lots of smoke and the second is that with time (not very much of it either) the deck will become very well seasoned and literally carboned over effectively reducing its heat transfer properties, then it's time to break out the can of Carbon-Off, a few sheets of coarse sand paper, and a good deck scraper to undo the damage. Like you, I learned the hard way.

New York Style / Re: Brushing crust and bottom with EVOO?

C;

Since it was baked on a screen, I'm guessing that the oil might have been from the dough ball itself. Pressed dough balls are literally dripping in oil, and I've seen even hand tossed dough balls dripping in oil. I would seriously doubt that anyone would go to the trouble, at the pizzeria level to apply oil to the bottom of the crust. To the inside bottom of the crust yes, since when used this way it helps to reduce moisture migration from the toppings into the crust (especially helpful during

DELCO conditions). Some pizzerias do brush the outer edge/rim of the baked pizza with olive oil to improve the appearance and flavor of the crust (especially the edge).

Did you happen to get a look at the screens the pizzas were baked on? If they were extremely dark/black in color and appeared to be carboned up, there is a possibility that they were oiling the screens to compensate for gunked up screens, which do not exhibit the best release properties, some of that oil would be transferred to the bottom of the pizza skin as it is placed onto the screen.

New York Style / Re: Brushing crust and bottom with EVOO?

P.S.

There are some absolutely great nonstick pans available, but not at discount house prices. The best (most durable and nonstick) is made by [Lloyd Pans](http://www.lloydpan.com)

<www.lloydpan.com>. With these pans you just lightly oil the pan the first time and then just wipe them out with a clean towel. It's still a good idea though to very lightly oil the pans again if you wash them/it. Oil is not such a bad thing in a pan. It improves the heat transfer from the pan to the dough, and it can contribute to something of a fried crust characteristic (think P.H. deep-dish) which is crispier than a baked crust, which is what you get in a dry pan. The biggest advantage that I see to a nonstick pan is that any toppings that might spill over will not stick to the pan, making clean up much easier and faster.

Stones/tiles/steel, Pans & Accessories / Re: how good are non stick pizza pans?

M;

Without seeing your dough formula/recipe and dough management procedure I cannot say for sure what the problem might be, but fermentation is a big key to it. Once you have your dough developed just until it has a smooth skin on it, form it into a ball and wipe it with oil then place it into a plastic bag (not a Zip-Lok bag). A bread bag works great. Twist the open end of the bag to form a pony tail, then tuck the pony tail under the bag as you place it into the fridge. This allows for some expansion without tearing the bag. After 24 to 48-hours in the fridge remove the dough ball and allow it to temper AT room temperature for about 2-hours, then turn the dough ball out of the bag and with MINIMAL handling, drop the dough ball into mixture of flour and cornmeal (I like to use a 50/50 blend) now you are ready to begin opening the dough as shown in the video. You might need to make some adjustments to the refrigerated fermentation time and the tempering time depending upon your specific dough formulation, but this should get you started.

Dough Clinic / Re: How do I make dough this elastic?

In your Method #1 it appears that all of the water is at 100F. In most applications this results in a finished dough temperature that is way too hot to allow for decent dough management. It might work OK for an emergency dough that will be used in a very short time, but if the dough will be managed through the fridge, it probably won't cool off sufficiently fast to retard the yeast activity (this can be worsened if you put the dough into a covered container from the "get go"). This results in a dough that is what we refer to as "blown" or over fermented. The resulting dough can be so weakened by the excessive fermentation that it cannot rise, or rises insufficiently during baking, making for a flat pizza. To see if this might be your problem, try making a dough using 65 or 70F water, and leaving the dough uncovered for about 90-minutes in the fridge, then covering it to protect it from drying. If this is successful in preventing the dough from blowing, you can experiment with different finished dough temperatures to see what works best for

your specific application.

New York Style / Re: Dough turning into large flat blob

H;

To put sugar into the mix I would suggest reformulating as follows:

Salt: 15-grams

IDY: 7-grams

Baking Powder: 15-grams

Milk Powder: 4-grams

DATEM: 3-grams

Sugar: 11-grams

I wouldn't be too concerned about the dry milk level as it is the least functional ingredient in this formulation. If you wanted to, you could easily delete the milk powder and increase the sugar by 4-grams.

New Forum Members / Re: Pre mix for dough

Kiran;

Based on the formula you provided (600-grams/0.600Ltrs, not 600 Ltrs of water) for each Kg. of flour weight to get 65-grams of PREMIX I think you will need something that looks like this:

Salt: 20-grams

Instant Dry Yeast: 7-grams

Baking Powder: 25-grams

Milk Powder: 4-grams

DATEM (improver): 4-grams

I think this will come pretty close to replicating the PREMIX based on the function of ingredients.

New Forum Members / Re: Pre mix for dough

DJ;

Is your aluminum tray well seasoned? If not seasoned, or one of the non-stick, dark colored finishes there is a high probability that the pizza will stick to the tray during baking unless the tray has been oiled.

Dough Clinic / Re: Stuck dough

Tony;

Your dough formula doesn't show any fat, and since fat is a tenderizer in baked products it will contribute to a more tender, less chewy eating characteristic. You can graphically see this if you compare the eating characteristics of regular and fat free tortillas. The fat free tortillas eat like a piece of shoe leather. Also, you really are not giving your dough enough fermentation time to develop a tender eating characteristic. I think your crust would be a lot more tended eating if you allowed the dough to ferment in the fridge for 24 to 48-hours before using it. Lastly, I think your flour is WAAYY to strong for what you are doing with it. I suggest changing over to a flour with a lower protein content, something in the 11% range should work better than your present 13%+ protein content flour. Lastly, if you use a generous amount of oil in the pan rather than shortening you will achieve a fried bottom on your pizzas which significantly improves the crispiness, but does not address the excessively chewy issue. If you use oil as opposed to shortening/plastic fat in the pan you should open the dough up to a size slightly larger than your pan size on your bench top, then carefully transfer the formed pizza skin to the oiled pan for final proofing.

P.S. If you opt to go with an overnight or longer fermentation time in the fridge, you will need to delete the Reddi-Sponge from the dough formula.

Dough Clinic / Re: What are the differences between reddi-sponge and pz44?

PE101:

I think what you are making reference to is called "open crumb structure" aka "open grain". The best way that I know to get this characteristic is through a combination of high dough absorption and high baking temperature when combined with sufficient fermentation time (usually 2 to 3-days in the fridge).

New York Style / Re: Spider Web Effect In Rim of Crust - How To Achieve?

Tony;

For all practical purposes there is not difference. Reddi-Sponge is the oldest of the two products (it has been around forever) and it is marketed to the bread making industry to reduce dough mixing time and give a dough with softer, more relaxed machining properties, these properties are critical in high speed bread production. PZ-44, on the other hand, is marketed primarily to the pizza industry to achieve the very same effects, only in this case we say that it reduces dough memory characteristics (also known as "snap-back") and this is the main reason for using it. Yes, it does still reduce the dough mixing time but in pizza production the doughs are significantly undermixed so reduction of mixing time is not as important as it is in bread production.

Dough Clinic / Re: What are the differences between reddi-sponge and pz44?

PB;

The traditional flour used in N.Y. is General Mills All Trumps flour. This flour has approximately 13.5% protein or a little more. For home baking, any good, high protein flour should work well.

Dough Clinic / Re: What flour for New Yorker Pizza?

Jordan;

For a wood fired oven dough there is a lot of sugar being added. This might explain the burning of the edges. The salt is also extremely high at 4.4%, I would be much happier to see it down at 2% or a little on either side of that. Your gum line issue has been discussed in a number of my published articles in PMQ Magazine (In Lehmann's Terms), but for now, I would say that it is resulting from 1)The sugar is so high so as to not allow the pizza to be baked sufficiently without charring (think underbaked pizza). 2) The pizza skin is being stretched so thin that the heat from the deck is passing right through the dough and being dissipated as steam when it is absorbed by the sauce and toppings on the pie which are essentially 90% water. When this happens the dough never gets hot enough to fully bake. To test this to see if it is the cause of the gum line, prepare a pizza skin in the normal manner, then cover with a sheet of plastic and allow the skin to proof at room temperature for 30-minutes, then dress and bake in the normal manner. If the gum line disappears you will have good direction as to what is causing it. If it doesn't, make adjustments to the salt level and delete the sugar and bake again to see if the gum line disappears. Since there are so many different things responsible for the formation of a gum line we may need to do a little more experimenting to find the root cause. Please keep us posted on your progress.

Dough Clinic / Re: not really sure which direction to go.

I'm guessing that the stone is getting heated during the preheating of the oven, but then when the pizza is placed on the stone the latent heat is drawn out of the stone and with the positioning of the burner/flame sufficient heat cannot be put into the stone to maintain a temperature which will induce browning of the bottom crust. I would also bet that the heat is just going right up the back wall of the oven. Think of it like this: If a frying pan was placed with only a small portion of it over the heat, how would that pan bake/fry? With that burner position, I'm not sure what would work except to try baking on a screen and putting some sugar or dairy whey in the dough formula to assist in color development.

[**Newbie Topics / Re: Charring the Base**](#)

Jeep;

Don't rock the Spoodle, just hold it flat. :)

I've got a set from American Metalcraft covering just about any weight sauce I might want to use. They're cheap and work great.

[**Prep Equipment / Re: Flat bottom ladles ?**](#)

Gnatto;

A couple of things come to mind that might cause the problem you're experiencing (no/insufficient color to the bottom of the pizza). 1) is the oven burner shutting off because the oven is up to temperature? This would allow the pizza to suck a good deal of heat from the stone, cooling it to the point where it is not hot enough to properly bake/color the bottom of the pizza. If the burner stays on it would be putting heat into the stone continually resulting in more bottom heat and a better bottom bake.

2) A thicker stone will hold more latent heat to better bake the bottom of the pizza. This is how the wood fired pizza ovens work. They have very thick stones for the hearth and they store a lot of heat, so when a pizza is placed onto the hearth it bakes fast and thoroughly without any appreciable cooling of the hearth surface.

[**Newbie Topics / Re: Charring the Base**](#)

JR;

To make a 90-pound dough you would use 50 to 55-pounds of flour depending upon the dough formulation. Adding 1.5-cups of sugar to the dough formulation would be equal to about 10.5-ounces of sugar or 1.3% based on 50-pounds of flour. This amount of sugar will not significantly impact the finished crust flavor, especially when presented as a completed pizza, but it will impact the browning of the dough/crust during baking. It will brown faster, potentially resulting in a shorter baking time which can mean a slightly less crispy crust, or one that will not hold its crisp quite as long as a crust made without sugar in its formulation.

[**Dough Clinic / Re: so far so .. well**](#)

J:

Were you using the dough formula with sugar? As dark as the crust appears to be it looks like you have sugar in it. When using that dough formula in a deck oven the sugar becomes an optional ingredient as the deck normally provides all the color one might want.

[**Dough Clinic / Re: so far so .. well**](#)

Scag;

Here's a little trick that we use in the lab when we need to weigh an ingredient that is outside of the calibrated limit of the scale. For example, say your scale only weights in 2-gram increments but you need only 1-gram for your dough. Weigh the

two grams and put it into, say two cups of water (could be tablespoons, teaspoons, etc.) now just divide the water equally into two containers, each container will contain half of the amount you weighed. VWG is another ingredient that can be problematic, in this case just delete 50-grams of flour from your dough. Now scale 100-grams of flour and place it into container that can be lidded, scale twice the amount of VWG that you need to add and place it into the flour, apply the lid and shake well to get a uniform mixture, now all you need to do is to divide the flour/VWG mixture in half and you have added the correct amount of VWG and also replenished the 50-grams of flour that you deleted from the formula. Keep the other half of the flour/VWG mixture for the next time you make pizza.

New York Style / Re: Dough sticking to pizza screen

Scag;

You mention that you put three pizzas into the oven all at the same time. Is this normal practice for you? I mention this because the center of the pizza is the last part to get baked. If you overloaded the oven, and slowed the bake (possible to probable in a home oven) the longer bake at a now lower temperature might allow the dough to be forced down and into the screen openings, hence when the dough finally expands and bakes it is effectively locked onto the screen. You might be able to get a feel for this if you look at the center section where each pizza stuck to the screen. Was the dough inside of the screen openings, or was it merely sticking to the top surface of the screen? Also, look at the bottom of the pizzas, if they exhibited a tendency to flow into the screen, the bottom of the pizzas will have a somewhat nubby appearance.

New York Style / Re: Dough sticking to pizza screen

Yakfish;

Never mind the salt, you're at 3.2% already. I would think the crust might be tasting slightly salty.

Is there a possibility that all that salt is inhibiting fermentation to the point of impacting flavor?

Dough Clinic / Re: Does anybody add seasoning to their dough?

Yakfish;

You might want to check the salt level in your dough since salt is a major flavor contributor to the finished crust. We normally look for the salt level to be a minimum of 1.5% of the total flour weight. I personally like to use 1.75 or 2%. Fermentation is also responsible for a good chunk of the finished crust flavor too. Can you share with us how you are managing your dough? By this I mean, what you do with the dough from the time it is mixed until you actually use it. Substitution of the olive oil with butter will add a dairy note to the finished crust. Some other options are to brush the finished crust with olive oil or butter to impart some additional flavor.

Dough Clinic / Re: Does anybody add seasoning to their dough?

Craig;

A number of researchers that I've discussed this with have also alluded to the allianase reaction due to the limited reducing effect on the protein chain. Both L-cysteine and Glutathione work to break the bonds at the S-H bonding points on the protein chain (of which there are many), hence the ability of these products to literally liquefy a dough. I did the original application work on papain in wheat based doughs back in the late 60's. In addition to being an excellent meat tenderizer, it is also an excellent dough reducing agent, but extreme care must be

exercised when using it due to the fact that it works very fast, and like the Eveready Bunny, just keeps on working, and working, and working, and to add insult to injury, to the best of my knowledge, the action cannot be reversed by simply oxidizing the S-H bonds on the protein chain so the effect is more like that of a proteolytic enzyme. Bromelain, on the other hand, has been tamed and is, or at least was, available as a commercial product for softening wheat doughs at one time.

Dough Clinic / Re: Dough "relaxer" question.

Flavor is the combination of aroma and taste. An herb flavored crust is just the opposite of a saltless soup cracker. It is loaded with flavor from the herbs that are added even if the dough itself doesn't contain any salt, the herbs can still carry the flavor of the finished crust. This is how the salt substitute "Mrs. Dash" works, at least from a flavor stand point.

Dough Clinic / Re: Does anybody add seasoning to their dough?

Yak;

A number of years ago all of the big box chains were offering an herb crust, then there was the "dirty" crust with the herbs tacked on to the outside of the dough. We have made herb dough by using the packaged Italian seasoning mix and just blending it into the dough and we have also made it by making our own herb blend consisting of dried basil, oregano, garlic, onion, sundried tomato, dried red and green pepper and a little ground white pepper. Depending upon how much onion and garlic that you use the dough might be a little softer than normal, but if you do any hand kneading you can just knead in a little additional flour to compensate for the softening effect of the onion/garlic. Aside from that, no real surprises.

Dough Clinic / Re: Does anybody add seasoning to their dough?

Grathan;

Also, what you were seeing is completely normal for two such different flours. The All Trumps flour is a very strong, high protein flour that is capable of producing a very strong and elastic dough (this is why it appeared so tough and hard/firm, and kept wanting to climb up the dough hook). Additional water would have helped soften the dough making it more manageable but it would still have been more elastic than one made with an AP flour. The high protein flours typically require more water and fermentation.

Dough Clinic / Re: Mixing all purpose vs high gluten

Your dough formula in bakers percent looks like this:

Flour: 100%

Water: 62.5

ADY: 0.82

Oil: 1.028

Salt: 1.028

Sugar: 1.44

For an American style thin crust these percentages look to be pretty normal, so the formula is probably OK, if that's the type of pizza you are targeting.

Heating all of the water to 100F is going to give you a very warm finished dough temperature. Since you are using ADY the water used to hydrate the ADY should be at 100 to 105F, with the remainder of the water somewhat cooler, to give you a finished dough temperature in the 80 to 85F range. Warmer dough temperatures are OK if you can handle it, but often the dough tends to over ferment and gives a

finished crust with varying degrees of flavor both from excessive yeast fermentation and from potentially unwanted bacteria growth (lactobacillus) which can result in a vast array of different flavor development.

For mixing the dough just add the remainder of the water, followed by the salt, sugar and flour, then add the yeast suspension on top of the flour and begin mixing. As soon as the flour is hydrated in the mixing bowl (you don't see any white flour) add the oil and continue mixing in your normal manner. After mixing, divide the dough into pieces, oil and place into individual containers or plastic bags, then place in the fridge for two to three days or more as you desire. Remove the dough pieces from the fridge about 3-hours before you plan to open them up into pizza skins and proceed with making your pizzas. This modified procedure should result in greater uniformity of the dough pieces, resulting in greater uniformity of your pizzas each time you make them. By this procedure you could also make a number of dough balls one day and hold them in the fridge for several days, using them as needed and getting pretty decent uniformity from day to day.

Dough Clinic / Re: Critique my dough please

Peter;

Yes, we used to buy generic garlic and onion powder from the supermarket and it performed similarly to the commercial stuff we now get from our supplier. The thing is that the mechanism of these products in breaking the gluten structure is different from L-cysteine or glutathione in that it breaks the protein chain at a different point (which I still don't fully understand) as a result the reducing effect is limited (not limited with L-cysteine, glutathione, or enzymes) to providing not much more than about a 25% reduction in dough mixing time. This makes it a pretty gentle and easy to use relaxer. Easy to use in that you just can't over dose a dough with it. When used in a home pizza making setting the natural thing to do is to slightly adjust the water (absorption) in the dough to compensate for this softening effect, or even add a little additional flour. I can't speak for others, but when I make my pizzas at home if the dough seems a little slack/soft I just use a little more dusting flour during the kneading of the dough to correct it. I'm guessing that this is what others are doing at home when they use onion or garlic powder in their doughs. Since the dough making process is much more regimented in a pizzeria setting they don't see the softening effect until after the dough has been mixed, and since they don't hand knead there is no way to correct for the softening until they make another dough, at which time they normally just reduce the dough absorption several percent to correct the dough consistency and handling properties.

Dough Clinic / Re: Dough "relaxer" question.

Jeff;

All of our research has shown that about 0.25% of either garlic powder, onion powder, or a combined blend of the two will give the desired reducing effect. This is the reason why we suggest keeping the combined onion/garlic level to not more than 0.15% of the total flour weight when you don't want to experience the reducing effect.

Dough Clinic / Re: Dough "relaxer" question.

Hi Jeff;

Norma is right, with the correct formulation and the right dough management procedure there shouldn't be any need for a dough relaxer, but for those times when we just can't make our pizzas without them we have a number of them to select from.

Garlic and onion (powder or flakes) is a pretty decent dough relaxer especially well suited for those times when the dough just needs a little encouragement to open into a pizza skin.

For those time when more encouragement is needed, especially when we're making no-time or short time doughs something with a little more "oomph" is needed, this is where we get into L-cysteine (commercially available as PZ-44) or glutathione (dead yeast). You have to be careful with these last two since they can/will liquefy a dough if used at excessive levels. In the pure form this translated to about 90-parts per million based on the flour weight, but thankfully, there products are commercially blended to make scaling much easier so we're looking at 1 or 2% of the flour weight when used in a commercial ingredient blend. When used within the recommended use levels, you will never know it is there in the finished crust, but if used at excessively high levels, assuming you can handle the dough, which is now very soft and sticky, the finished crust can impart a slight stinging or tingling sensation to the lips as the crust is eaten. This closely mimics the effect of thirst on the lips (yes, you will be licking your lips), but that's about the extent of it. If you are holding the dough over in the fridge for several days, you might end up with an overly soft, unmanageable dough that has been so weakened by the reducing agent that the finished crust takes on a flat, poker chip appearance with a knife edge. Plus, if the dough cannot support the weight of the toppings, it will collapse in the center section resulting in a beautiful gum line. How do these things work? The work by breaking the protein molecules at their bonding points (sorta like taking a bicycle chain apart by removing the master link(s)). This can be reversed to a great degree by using an oxidizing agent such as ascorbic acid, or potassium bromate, just to name a couple. Enzymes (protease enzymes) can also be used to achieve the same end result but unlike L-cysteine and glutathione (both are amino acids/protein building blocks) the enzymes hydrolyze the proteins so they are no longer proteins, hence the dough softening resulting when protease enzymes are used cannot be reversed, plus, the enzymes have a nasty habit of continually working to hydrolyze the proteins, so they just don't stop working in most cases. This can make long term management of the dough in the cooler much more tricky, and management of scrap dough is all but impossible. Excessive use levels will easily turn a dough into a bucket of slime way before you will ever have enough to impact the finished flavor of the crust. Think of it like this, when we imbibe in a little relaxer it can be good for us, but too much can result in unwanted problems, the same can be said for relaxers and dough.

Have a great day, and use those relaxers in moderation.

Dough Clinic / Re: Dough "relaxer" question.

Sammy;

Rather than going with gas, can you go with a wood fired oven? There are some excellent plans available for building your own, so with some local contractor assistance I'm thinking you might be able to get a first class pizza oven at a fraction of the cost of a commercial one. Just a thought.

Dough Clinic / Re: When cooking - dough will not rise

Cam;

No, it is probably even more important under those conditions. If the dough is too cold when it goes into the fridge you may not get enough fermentation on the dough during the time in the fridge, and if it is too warm/hot you might get more fermentation than desired and find that the dough blows while in the fridge. Where temperature is more important is when you are going to use the dough soon after mixing it. By soon, I mean within the same day or even a few hours. This is where a

warmer dough comes into its own. The warmer dough ferments faster so the dough receives sufficient fermentation within the time allocation and we are rewarded with a better finished quality pizza. If you need to source a good, low cast thermometer, try your local drug store/pharmacy, an oral thermometer or one of the newer infrared thermometers are designed to give readings pretty well within the temperature range that most of our doughs will be coming off of the mixer at. A trip to your local auto parts store and \$7.00 will get you a dial/stem type thermometer that is used for checking your car's air conditioning unit. This thermometer works well for measuring colder temperatures such as water temperature.

Dough Clinic / Re: Why warm water??

Cam;

The temperature of the water is the controlling mechanism for the finished dough temperature. Depending upon how the dough will be managed, different finished dough temperatures will be targeted. For example, I like to cold age (ferment) my dough for several days before I actually use it, so my preference is for a colder dough, such as 80F. It is not right or wrong, it's just what works best for me. Others like to use a warmer finished dough temperature, again, it's what works best for them considering the type of dough they are making, and how they have elected to manage it. For the most part, doughs that are made at home are somewhat warmer than the doughs that are made for use in a pizzeria. If your dough temperature is too warm you will find that the dough exhibits a pronounced tendency to blow (over ferment). Of course, it might also have too much yeast for the temperature you're using too, but that's a whole different story. Experimenting with making pizza at home is half of the fun, the other half is eating it, and for the most part, our failures taste almost as good as our successes.

Dough Clinic / Re: Why warm water??

Rick;

I'm in agreement with Jeff V.

I would take the dough directly to the fridge right after the final kneading, then cut into dough balls, lightly oil the dough balls and place back into the fridge for an overnight cold ferment, then out a few hours on the following day before you open them into pizza skins.

Dough Clinic / Re: Air Bubbles and rising

Sammy;

Also keep in mind that whole-wheat flour does not rise as well as regular white flour does. Think of it like this, whole-wheat flour is actually a blend of 80% white flour and 20% wheat bran (fiber), since only the white flour portion can develop gluten it is the portion that rises, the bran portion is just carried along for the ride. Also, the bran particles have a cutting effect upon the gluten structure resulting in a dough that is somewhat less capable of holding gas resulting in a lower rise than what you would normally get with a regular white flour dough.

If you can, open the dough up by hand rather than using a rolling pin, and then allow the dough to rise for at least 30-minutes between fitting the dough to the pan and dressing/baking it. This should help get you on track to a thicker crust.

Dough Clinic / Re: When cooking - dough will not rise

Ed and Joe's Pizza was a family favorite after we moved into town (Tinley Park) from the farm. I was 10-years old at the time and everytime I go back to Chicago to visit family we always get a thin crust pizza from Ed and Joe's. Yup, they are still in

business after over 55-years, and the best part is that for all practical purposes, their pizza hasn't changed one bit! Only the very edges of the 4 corner pieces (party cut) have a little crisp to them, that's why they're always the first to go. The rest of the slices are akin to a piece of wet pasta, but a lot better tasting. Beggar's Pizza, a south side chain does a pretty decent job on this type of pizza too.

Chicago Style / Re: South Side Thin Crust..

Maybe I'm missing something, but why not use a 20 degree-L dry malt powder? A one pound bag is about the same size as a bag of IDY and you can get it from any bakery ingredient supplier. Just be sure to keep it tightly closed so it doesn't absorb moisture from the air and lump up. In almost all cases, all you ever need of the dry malt powder is about 0.25% based on the flour weight.

Dough Clinic / Re: Going organic and getting a bit more rise

SB;

Here's your formula in bakers percent:

Flour 100%

Active dry yeast .57%

Water 65%

Salt 1.71%

Brown sugar .71%

Ingredient weight divided by the flour weight X 100 = bakers percent.

A couple of suggestions:

Yeast: Hydrate the ADY in 100 to 105F water without the sugar and salt for improved yeast performance. At the same time allow the yeast to hydrate for about 10-minutes before adding it to the mixing bowl.

Dough Temperature: Get yourself a cheap thermometer to measure and record your dough temperature. This will help you to control the rate of fermentation as you continue to experiment with your dough. Decide what temperature is presently working best for you and then strive to maintain that temperature with future doughs.

The addition of some olive oil or butter would add another dimension of flavor to the finished crust. I would add about 2% or (700-grams flour X 2 (press the "%" key and read 14-grams in the display window) You can always experiment with this level to see what you like best.

Without knowing your actual finished dough temperature I cannot say how long your dough can be refrigerated for, but with the small size pieces you are making, I would guess that the dough should be good for 2 to 3-days in the fridge, possibly more.

As for the type, I would say from the formulation you have an American style thin crust that is leaning slightly toward Neapolitan (due to the higher absorption).

Have fun and some good eating while experimenting!

Dough Clinic / Re: Input on my Dough Recipe Please!

Len;

Yes, I think that would be a reasonable expectation for a "normal" dough. Keep in mind though that at the lower yeast level, the dough may not be sufficiently conditioned/fermented after, say, 24-hours to provide optimum performance, but on the other hand, it should perform well several days out. As a rule we say that when you formulate or manage for a long refrigerated shelf life you give up on the short shelf life side of the equation and when you formulate or manage for the short time you will give up some of the long term storage days.

Dough Clinic / Re: Reducing IDY

Tom;

Letting the dough sit out and ferment for a period of time is a part of his dough management procedure. It gives him the end product he is looking for when used with his formula and dough making process. Large scale, pizzeria operations are not especially fond of the process as it can be difficult to ensure that the recommended times will always be adhered to resulting in potential dough handling issues, or product quality issues, especially after several days in the cooler. With that said, we do see this done at a lot of the independent pizzerias where they have better control over how the dough is managed in their shop. It might have been in PMQ that I wrote an article on dough management techniques where I discussed the pro's and con's of different dough management procedures as they pertain to the pizzeria.

Dough Clinic / Re: Let the dough set out before putting into the fridge???

One of my personal favorites is to use slices of fresh tomato in place of sauce on my pizzas, but when ripe, fresh tomato is not available I like to use whole peeled tomato that is first drained well, and then cut or torn into pieces and allowed to drain once again. I don't add anything to the tomatoes, but rather put a very light application of olive oil on the pizza skin, then add sliced or diced garlic followed by several leaves of fresh basil torn into pieces, a little white pepper, and then I add the tomato pieces, followed by the cheese and desired toppings. I think the large pieces of tomato add a lot to the flavor and texture of the pizza as well as providing something of a rustic appearance. I don't add salt to as I believe the cheese provides all the salt needed.

Sauce Ingredients / Re: If I gave you a can of Peeled Tomatoes? How would you make pizza sauce?

DD;

At home I slice my pizzas on a large metal serving tray and then bring it to the table on the same tray. In a store/pizzeria setting some operators do the same thing, others will cut their pizzas on cutting board made of UHMW (hard plastic), or any of those man made hard counter tops work well too. My favorite is a wood cutting board or even a cutting peel, but some health departments may push back on them so be sure to discuss your intention with them first. The reason why I like to cut my pizzas on a wood peel is because the wood is easier on my cutting tools (doesn't dull the edge) and it allows me to easily transfer the cut pizza to nicer serving tray.

One man's opinion.

General Pizza Making / Re: Serving pizza for dine-in

Sly & Peter;

Within the range that your yeast was used at there would not be an issue, but if you were at 1% IDY or more and doubled it, you might have brought a different crust flavor to the table. The flavor wouldn't be bad, but just different from the "norm", some might describe the flavor with high yeast levels as "yeasty", at least for me, this is not the normal flavor that I associate with a great tasting pizza crust. Peter brings up a good point with the temperature of the home fridge, typically being warmer than desired, not through a fault of the fridge, but rather because we're always opening and closing the door during the normal course of the day. Then too, our home fridge has a big temperature difference between the top and bottom, so much so that when we are gone for a few days the things in the lower vegetable

drawers end up getting frosted. I can't begin to count the amount of lettuce we have had to toss-out because it got frozen while we were gone. I guess opening and closing the door frequently may not be all that bad afterall. Because of this, I really think it is better to make an adjustment in the water temperature to achieve a higher finished dough temperature rather than to increase the yeast level. It is actually pretty easy to get a dough that is about 10F warmer than normal by just using warmer water when making the dough. How much warmer? My experience with making pizzas at home has shown that an increase of 10 to 15F in the temperature of the water added to the dough should do the trick. Don't have a thermometer? You can get an inexpensive one from Walmart in the automotive department for \$7.00. They read up to 125F and are used to check the temperature of a car's airconditioning. I've also used a cheap oral thermometer that I had left over from when the kids were young. The exact finished dough temperature is a goal but not a prerequisite in making an emergency dough, just getting it warmer than normal will almost always do the trick, but in order to have repeatability, you never know when company will unexpectedly drop in, nothing beats working with actual temperatures whenever you can.

Dough Clinic / Re: Let the dough set out before putting into the fridge???

Sly;

You could have also just increased the dough temperature by 10F and accomplished the same thing without changing your dough formula/recipe. This is how we normally make no-time/emergency doughs.

The down side to increasing the yeast level is that should you want to hold the dough for additional time in the fridge, you would stand a good chance of the dough "blowing" or becoming over fermented, plus depending upon how much yeast we're talking about, you can also change the flavor of the finished crust with an excessively high yeast level.

Dough Clinic / Re: Let the dough set out before putting into the fridge???

Tom;

Letting the dough sit out at room temperature is not recommended when the dough is to be frozen as it allows the yeast cells to swell in size, thus rendering them more prone to ice crystal damage during the freezing process, this in turn allows glutathione (first cousin to L-cysteine, think PZ-44) to leak out into the dough creating an undesirably soft and sticky dough condition when the dough is finally slacked out/thawed for use. As to allowing the dough to set out prior to going into the cooler, this allows the yeast to begin leavening the dough, thus effectively making it less dense and more difficult to cool in a repeatable, and efficient manner. A lot of stores that still follow this practice are doing it because they have always done it that way, or that was the way they were taught to do it by a previous owner. We have found that there is significantly improved cooling efficiency when the dough is divided/scaled, balled, boxed or bagged, and taken to the cooler all within 20-minutes of coming off of the mixer. This also results in improved consistency of dough performance when the dough is to be held for several days in the cooler and we are striving to get the same pizza on day 1 as we will get on day 3. When making pizzas at home these issues still remain, but the ramifications are not so great as we can easily accommodate changes in the way the dough handles (try explaining/showing that to the average highschool or college student working in a pizzeria) and if the pizza needs an adjustment in baking time, so be it, but with the use of an air impingement or other conveyor oven those changes cannot really be made from pizza to pizza unless a deck oven is being used. For the most part, pizzerias work on the old adage of GIGO when it

comes to dough.

Dough Clinic / Re: Let the dough set out before putting into the fridge???

B2D;

What you are experiencing is common for a pan style pizza store. First, there is no need to toss any dough out. Just remove any unused or over proofed dough from the pan and store it in the cooler until you make your next dough then incorporate into the new dough at a level not to exceed 15% of the total dough weight. This is also a good dough to convert to breadsticks or garlic knots. But that doesn't address your question; what I would propose is to manage your proofed dough (in the pan) directly from the cooler. Remove the proofed dough from the cooler, and place onto a heated shelf at 160 to 180F (anything close to this will work), think heated shelf for holding pizzas on for delivery or pickup. PVI used to make such a shelf but have discontinued it. Shucks! You could make your own with a piece of stainless steel and a couple of heat lamps under it. The idea is to allow the cold dough to set on the heated surface for about 2-minutes, then dress it and bake. As the overall dough temperature will be colder, you may need to experiment with baking using a screen under each pan to control bottom bake. There are several regional chains that use a similar process with good success. As a last resort, you can always par-bake your crusts too. This really works well for the deep-dish style pizzas. Par-bake the crusts using about 1/2 of the normal amount of sauce on the dough to control bubbling, depan, place on rack to cool, then store at room temperature until needed (should not be an issue with health department) to finish the pizza, place back into a pan, apply remainder of sauce, and dress to the order, bake with a screen under the pan to prevent over baking the bottom of the pizza. Can you say "crispy"?

Dough Clinic / Re: Warm up time on racks

Walter;

The bromated flours are not illegal in California, but they are so frowned upon that you might have a problem finding a supplier that carries it, hence the reference to the non-bromated version of All Trumps. The bromate has essentially no impact upon the flour when it comes to making pizza, so you shouldn't see any difference between bromated or non-bromated All Trumps except for availability.

General Pizza Making / Re: Yes, I DO bake pies. All Trumps 1st

I'm glad you got to see that huge pizza. While Jeff was developing it I had the dubious honor of cutting one of those babies into 3-inch square party slices. That's the first time slicing a pizza was ever work for me! Jeff always tries to do something a little different every year, we can only guess at what he might be thinking about for the next Pizza Expo.

Did anyone have a chance to sample some of the other things he was baking in the air impingement ovens? Breads, rolls, ribs, wings, shrimp, fish, brownies, muffins, dessert pizzas, breakfast pizzas, the list of things he makes with those ovens just goes on and on, not to mention all of the different types of pizzas he makes. Jeff has become the master of the air impingement oven in my opinion.

Events Calendar / Re: Report and pics from Pizza Expo, Las Vegas 2013

I had a number of PM individuals come up to me during both of my presentations at Pizza Expo. My presentation on Tuesday (room 260-N) went from 4:00 p.m. until right at 10:00 p.m. we had a great group with lots of great questions.

Did anyone get over to the XLT Oven booth? My partner, Jeff Zeak was working in their booth making some fantastic pizzas (one was a 64-inch diameter monster!) as

well as a lot of other tasty items using the XLT ovens.

[**Events Calendar / Re: Report and pics from Pizza Expo, Las Vegas 2013**](#)

Absolutely GREAT looking pie! I agree, just cut the peppers a little smaller and they should bake just fine.

Great color, great edge, great balance between toppings and edge dimension too, just an all around great looking pizza. :) :) :)

[**Dough Clinic / Re: Soggy in the middle**](#)

You can get All Trumps flour un-bromated by requesting product code #50143. This one is malted and enriched only.

[**General Pizza Making / Re: Yes, I DO bake pies. All Trumps 1st**](#)

G;

Probably the single most commonly used flour by N.Y. pizzerias, to make New York style pizza is General Mills All Trumps, coming in at 14 to 14.2% protein content. But from a realistic point of view any patent or straight grade flour with 12 to 14% protein content will also work. Very few pizzerias use a blend of flours to make their pizzas unless it is a specialty type of pizza dough such as wheat or multi-grain.

[**Dough Clinic / Re: flour combinations**](#)

I totally agree with Peter. One possible cause of the problem is due to hand kneading the dough as opposed to machine mixing the dough. During hand mixing we fold and push the dough so there is a distinct possibility of developing an air pocket in the dough during kneading, as the dough ferments, gas, created by the yeast moves into this pocket and expands it to create the bubble which you have observed. Just pop the bubble and continue in your normal manner.

[**Dough Clinic / Re: air bubble on top of dough ball**](#)

I don't like to use plastic wrap as it does not allow for any expansion of the dough, instead, I like to put oil the dough piece and put it into a plastic bread bag, twist the open end into a pony tail and tuck it under the dough ball as you place it into the fridge. It still comes out nice and round but this method allows for some expansion of the dough ball. To use the dough ball, remove from the fridge about 90-minutes before you want to open it into a pizza skin, then strip the bag away from the dough ball, allowing the dough ball to fall onto/into some dusting flour and begin opening the dough in your normal manner. Note: DO NOT use a zip-lok bag as the seal can open allowing the dough to dry and crust over.

[**Dough Clinic / Re: Best way to refrigerate dough?**](#)

C.G.;

A couple of things are probably happening here. The bright pan color is reflecting heat away from the pan, making it nearly impossible to bake the most difficult part of the pizza, the middle section. If you got just a little color development around the bottom edge, the dough might be pulling up slightly off of the bottom of the pan, thus creating an air gap between the pan and the dough, under this condition, it is all but impossible to get any bottom color at all. I think if you had been baking on a stone you would have had better luck with the bottom color. As for flavor, most of the crust flavor is developed as a result of baking, so if the dough is not properly baked, you do not develop any of the flavors that are characteristic to a baked pizza crust. You can see this if you take an English muffin and eat one half of it without toasting, then toast the other half and you will see a significant improvement in

flavor.

Sicilian Style / Re: First attempt at Sicilian didn't turn out great...why?

Varun;

I can't say for sure that you will succeed with your oven, but it is worth a try. Here is how I would start:

Pan: Deep-dish (1.5 to 2-inches deep having a dark color (anodized or seasoned to a dark color)

Dough: 100% flour; Salt: 1.75%; Shortening/Butter: 4%; IDY: 1%; Sugar: 2%;

Water: 55%

Procedure: Add water (65F) to the mixing bowl, add flour and the remainder of ingredients, mix at low speed for 3-minutes, then mix at medium speed for 8-minutes, or do all of the mixing at low speed for 15-minutes. Targeted finished dough temperature is 80 to 85F. Immediately after mixing, scale the dough into 400-gram weight pieces and form into balls, wipe dough balls with vegetable oil after placing into plastic dough boxes. Cross stack in the cooler for 18 to 36-hours. Remove dough from cooler and allow to temper AT room temperature for 2.5-hours, then either open the dough balls with a pin, and place into a lightly oiled baking pan. Cover and set aside to proof/rise for 45 to 70-minutes, take to the oven for baking. I think you will be able to bake right on the deck. Baking time will be about 4-minutes. NOTE: If you see a spot on the par-baked crust that appears to be an oil spot, it isn't. What you are looking at is an area of collapse. To correct the problem you will need to bake the crust a little longer, possibly at a lower temperature. Remove the baked crust from the pan immediately as you remove it from the oven and place onto a wire grid or shelf to cool. Let me know if you have any questions or problems.

Dough Clinic / Re: Unique oven config, need dough advice

L.A.

There are a whole bunch of other options that you may not be as sensitive to:

Sunflower oil

Peanut oil

Blue Bonnet Margarine (ya gotta try it)

Straight olive oil

Are you sure the canola oil you tested wasn't rancid?

Chicago Style / Re: Chicago Deep Dish without Corn Oil

American Metalcraft shows an 8-inch round peel (20-inches long) item # 17080.
<www.amnow.com> 800-333-9133.

Stones/tiles/steel, Pans & Accessories / Re: Small diameter turning peels

Mozzarella is really a pretty bland tasting cheese, even when blended with a higher butterfat Provalone cheese, the flavor is still on the bland and non-exciting side of great. To compound this, there seems to be a tendency to use too much dried oregano and basil these days and that pungent flavor completely over powers any flavor from the cheese. We have been working on this for some time now and we have found if we replace the dried basil and oregano with fresh, green leaf basil and oregano (my personal preference is to use just fresh basil and forgo the oregano completely) the cheese flavor comes through much better. Additionally, the addition of about an ounce (a good pinch) of shredded Parmesan cheese to replace an equal portion of Mozzarella does a lot to bring out the cheese flavor of the pizza.

New York Style / Re: Really disappointed in Grande 50/50 blend

MC;

A sponge is different from a sourdough. A sponge might also be called a preferment. A portion of the flour (with yeast and a portion of the water) is blended together and allowed to ferment for 1 to 24-hours to develop flavor. This is then combined with the remainder of the flour and other ingredients to make the dough. A sour would be allowed to ferment for several days or more to develop an acidic flavor and also provide leavening. Only a part of this is used in making the dough. The remainder is replenished (fed) and used to make more dough at a later date. A sour that you made years ago might still be with you today if you have managed it properly so as to maintain the same microflora, hence it will always function the same and produce a like flavor profile. If the sour is mismanaged, either by allowing it to become contaminated or by allowing it to be subjected to incorrect temperatures for the microflora you are cultivating the performance of the sour can change drastically, as can the flavor, normally when this happens it is said that the sour was "lost". TIP: If you work with a sour, store it in multiple containers in different storage facilities (locations), this way if the sour is lost at one location, for whatever reason, you can still use one of the others to inoculate a new sour, thus preserving the performance and flavor imparted by the sour.

Newbie Topics / Re: Homemade yeast

Adding a small amount of baking soda to your tomato product is an effective way to reduce their acidity. Without actually running a TTA (titratable acidity) to measure the amount of acid present it is impossible to predict just how much soda would need to be added. For most of us, when we have excessively acid tomatoes we just want to take the edge off of them, so a lesser amount of soda is probably the best way to go. While on the topic of pH and tomatoes, please remember that it is the acidity of the tomatoes that inhibits microbial growth with long term storage (think canned). A few years ago a young housewife poisoned her entire family when she canned low acid, yellow tomatoes following the same procedure that she normally used when canning regular tomatoes and used it to make a pasta sauce. The microorganism that grew in her canned, low acid tomatoes was clostridium, and the outcome was not good.

One last thing about pH and tomatoes, it is the acidity of the tomatoes that helps to prevent them from scorching during the baking of the pizza. We did some work on this a number of years ago and we found that the addition of 1-ounce of grated Parmesan cheese per gallon of tomato product did a pretty decent job of taking the edge off of the tartness of the tomatoes. You won't see/taste the difference though until you cook the sauce either by itself or on a pizza.

Sauce Ingredients / Re: Baking Soda To Reduce Sweetness

With reference to blowing under the dressed pizza skin to help release it from the peal, it has more to do with perception than food safety. How would you feel if you were at a restaurant where some snotty nosed kid was blowing, or coughing on your pizza? Don't worry, it will be sterilized in the oven. You might have a hard time selling that to your customers whose only comment might be "GROSS!". Then too, there might be a hard sell to your health department inspector. One old trick that I've used with very soft doughs is to open the dough into a pizza skin and place it onto a pizza screen for dressing, I then put the dressed skin (still on the screen) in the oven to bake for a couple minutes, then slip a peal under the now forming crust, remove the screen and continue baking on the stone. This is similar to a procedure called "decking" the pizza, but when decking the pizza, it is typically removed from the screen and placed on the stone/deck during the last couple minutes of baking to achieve a crispier crust than can be had by baking only on the

screen.

Dough Clinic / Re: Using a Pizza Peel with your dough???

I'm not sure I'm correctly following the last reply, but industry standard is to crumble the compressed/fresh/cake yeast into the flour and then begin mixing. There is no need to suspend it in the water unless you are mixing the dough by hand. If you are mixing the dough by hand you can put the cake yeast right into the cold water, or warm water, whatever you're using and stir it to suspend the yeast and you're good to go. Active dry yeast (ADY) should always be pre-hydrated in warm water (100 to 105F) for about 10-minutes before it is added to the dough. Once hydrated, it can either be added to the water in the mixing bowl, or it can be added to the flour just before you begin mixing. Instant dry yeast (IDY) is the one that can be added directly to the flour just as it is, but again, if you are mixing the dough by hand, you will need to pre-hydrate the IDY. To hydrate IDY put it into a small quantity of warm water (95F) and allow it to hydrate for 10-minutes, then you can add it either to the water or to the dry flour just as you would the hydrated ADY.

Regardless of which form of yeast that you're using, it is not a good idea to allow the yeast to come into direct contact with either the salt and/or sugar while you're assembling the dough, BUT IDY when used without pre-hydrating, can be put into direct contact with salt and/or sugar without any problems. This is commonly done by pizzerias when they make "goodie bags" containing salt, sugar (if used), IDY and a little flour.

General Pizza Making / Re: Kneading times and finished dough temp

To find the ingredient amounts in bakers percent divide the weight of the ingredient by the weight of the flour and multiply by 100. This will give you the bakers percent for each ingredient. To work your formula in bakers percent do the following:

- 1) Decide how much flour (by weight) you want to use.
- 2) Using your calculator, enter the ingredient percent you want to find the weight for, then press "X" and now enter the flour weight and press the "%" key and read the weight for that ingredient in the display window.

Also, please keep in mind that the absorption of any flour can/will change to some extent from bag to bag, so don't be too hesitant about making slight absorption adjustments to your dough as this is entirely normal. Normally these variations in absorption are in the magnitude of about 2% of the total flour weight.

Newbie Topics / Re: Dry dough

Steve;

Spot on!

Just think of all the places where food coloring is used.

Just to name a few:

Chicago deep-dish pizzas (Egg-Shade coloring is what gives it the characteristic yellow color)

Peppermint; Red and green aren't the natural colors for this popular flavoring.

Whole-wheat bread uses caramel color to mask the typical muddy color of whole grain/wheat bread crumb.

Kool-Aid; You didn't really think all those colors were natural, did you?

M&M Candies are in the same boat as Kool-Aid.

Chuckles Candy (now that's an old one) suffers the same fate as the Kool-Aid too. As you can see, the list could just go on and on, and if the colorings were all banned, eating might not be as much fun or appetizing as it presently is. Please

don't share this with Mr. Nanny as he might see it as a solution to obesity in New York City.

Oh, one last one...Red Velvet Cake! Please don't take that one away!!

Pizza News / Re: Nestle sued for "poisoning" pizza

Wow!

If alcohol is a poison (which it is) then beer, wine and distilled spirits should be taken off of the market. Wait! We've already tried that, and how did that turn out? Why not bacon too? No trans fats, but lots of cholesterol (and that's bad for you too).

Personally, I think these people need to find a hobby! How about making pizzas at home? Then they can have them any way they want them!

I like to live a little out on the edge, so please put some sausage on mine.

Pizza News / Re: Nestle sued for "poisoning" pizza

What ever happened to the old fashion rolling pin? Pie pin? Hand tossing? Table stretching?

My favorite when making pizza at home is to use a pin to open the dough up to about 2/3 of the finished diameter (pretty easy to do) then table stretch or hand toss to final size. Note: I have gravitated to table stretching at home due to the fact that hand tossing creates a bit of a mess with getting flour all over the place. Table stretching is a lot less messy when you're making pizza at a friends home too.

Prep Equipment / Re: Has anyone tracked down a manual dough sheeter for home use?

When I'm baking my Chicago style pizzas on a stone I always place a pizza screen under the pan to create a heat break which helps to prevent the bottom from getting overly done, heck, without it the bottom of the pizza burns in my oven.

Chicago Style / Re: Baking a Chicago style on a stone?

Bacon grease, aka lard can also be used to make unique flavored breads and pizza crust. If you buy commercially rendered lard it can be used to make some of the best pie crusts you have ever had too. When I was a kid growing up on the farm we used to have a lard can on the kitchen stove that we poured any leftover frying grease into, and we used from that can to fry things too, so it really developed a lot of flavor. One of our favorites was to spread it onto rye bread like butter, salt it and eat it as is. It doesn't work though when you begin adding vegetable fat into the mix as the mouth feel is all wrong.

Off-Topic Foods / Re: Bacon Grease

You might look into any "organic" flour as these will not typically be malted.

General Mills has a very good one "Sperry Organic Flour" that comes in at around 12% protein. You might be able to pick up a bag from your local restaurant supply. We use this one quite often without any problems, as was mentioned, if you have a problem with supporting long fermentation times with this or this type of flour just add some sugar to your formula. About 2% sugar should be all that you will ever need.

Dough Clinic / Re: Barley free pizza

I do not recommend trying to mail fresh yeast. We are in Manhattan, Kansas and we have difficulties getting several cases of it to us each week from Kansas City. Instead, consider buying a supply of IDY instant dry yeast. Unopened it has a shelf life of a year or more and you should be able to get it from any restaurant supply.

You might even be able to talk a local baker into putting in an order for a few extra pounds when they place their yeast order. If you want just small quantities, your local supermarket probably carries the small packets of IDY.

Resources / Re: Where to buy yeast?

Chaze;

Pretty easy to do with some limitations. Think DiGiorno (supermarket) pizza. Here we have a pizza made on a raw dough that is leavened with both yeast and fat encapsulated chemical leavening (you can get the fat encapsulated leavening from the Wright Group <tonyo@wenrich.com> the product is called "Wrise". It is used at 2 to 3% along with about 1% IDY. Another option is to go the Freschetta (another supermarket pizza) route. In this case you pre-proof the pizza skin before you dress it. For a thin crust allow the pizza skin to proof (rise) for about 20-minutes, then apply a very light coating of oil to the dough, sauce and dress as desired. For a thick crust, like the Freschetta product, allow the dough to proof for about 45-minutes, then dress as described above. Here are the limitations: Figure on no more than 10 to 15-day frozen shelf life when frozen in anything but a commercial blast freezer at -30F. It is best to use either canned or lightly sauteed vegetables because fresh vegetable toppings will break down during the freezing process only to release scads of water onto the pizza when it is finish baked. The commercial pizzas get around this in two ways, one by using moisture controlled vegetable toppings, and by blast freezing which is not as injurious to the vegetable toppings.

General Pizza Making / Re: Has anyone prepped a pie and then froze it to be baked at a later time?

Gig;

Just like in baking pizzas from scratch, latent heat is the name of the game in reheating pizza slices. If the steel plate is too thin, it won't hold much latent heat, so it will cool more rapidly than a thicker steel plate or thicker stone deck. You also need to make sure the deck has been thoroughly heated, which might take an hour or more before reheating the slices on it. If you are reheating your slices in a home oven, try using a low rack position in the oven rather than a high(er) rack position. This will bring the deck closer to the heat source thus improving the bottom heat while reducing the top heat to the slice to help prevent melting of the cheese.

Pizza Ovens / Re: Slice Reheating, steel vs. stone

Todd;

I can't remember working with an 1100 series Blodgett oven, but I have worked with enough 1048 series ovens to say that they are, in my opinion, a great pizza oven.

Pizza Ovens / Re: Seeking Blodgett Oven Advice.

C;

You bet! We use it regularly to make N.Y. style pizza. The absorption is a little lower than what we use for domestic flour, but on the other hand, the dough is a bit softer and handles (opens) nicely.

Newbie Topics / Re: Help with caputo 00 pizzeria flour

Todd;

Make sure you have a sufficient gas supply to operate those ovens (line diameter and pressure are critical). You may need to get an external gas pressure regulator for the ovens too. Be sure to contact Blodgett to obtain a set of installation

instructions for the oven(s) too. Since those ovens put out a lot of heat you will need to consider some type of ventilation for your garage too, not just for the heat, but also for the combustion gasses and the fumes given off from the baking process. Be advised that this might need to be hooded ventilation (\$\$\$\$\$). You might also contact your utility/gas company with the burner specifications to get an idea of the operating cost of those ovens. Ours take nearly 90-minutes to come up to full operating temperature, then you might spend another hour baking pizzas so figure on at least 2.5 full hours of operating time to use the oven to bake your pizzas.

Pizza Ovens / Re: Seeking Blodgett Oven Advice.

Beau;

One other thing, I don't know if it applies in this case or not is the thickness of the deck material and burned BTU's. Commercial pizza ovens tend to have thicker decks, capable of holding more latent heat than the thinner deck of a home or noncommercial application oven. Additionally, the commercial ovens have massive burners putting out a lot more BTU's than any home oven can. Of course they are significantly more expensive to operate too. With the greater capacity burners the commercial ovens will have a faster recovery time than a home type oven, and here again, some of the newer deck ovens exhibit almost no variation due to heat loss from the deck when multiple pizzas are baked in the same spot on the deck for a period of time. This might explain why many home pizza makers use a higher baking temperature than many pizzerias do while still getting the same end results.

Dough Clinic / Re: Oven Temp

Beau;

I'm not quite sure that I fully understand your question, but I'll have a go at it. Commercial pizza ovens are calibrated in such a way so that the set temperature on the thermostat corresponds to the temperature of the deck, regardless of whether it's stone, composite or steel in the place where the thermostat heat sensor is located. They try to locate the sensor in a spot that provides a representative actual temperature of the oven deck. Depending upon the oven design, you can, and usually do have hot spots on the deck, hence the need to rotate and move the pizzas around in the oven during baking. Some oven companies have been pretty successful at designing their ovens to have a more uniform temperature across the entire deck surface, and in fact, their literature and demonstrations promote the fact that the pizzas don't need to be rotated/moved during baking in their ovens. I have found these claims to be correct in principle, and work well when baking only a few pizzas at a time, but when you are trying to bake 6 or 8 pizzas at a time, and you are constantly opening and closing the oven door, those pizzas in the back of the oven get a different bake from those near the door opening, so it's back to rotating and moving the pizzas around again.

Dough Clinic / Re: Oven Temp

Craig;

You're right, the heating/toasting of the flour will most likely denature the protein, rendering it incapable of developing "gluten".

Dough Clinic / Re: toasting flour

Boyd;

The "big" thing that All Trumps flour has going for it is that it is one of the highest protein flours commonly available. It's great for making any kind of pizza where a chewy crust texture is desired. It is not the only flour that will impart this

characteristic, but since it is one of the highest protein flours, it is presumed to do this the best. In actuality, any flour with about 12% protein content, give or take 0.5%, will make great pizza.

Dough Clinic / Re: All Trumps

JJ:

The DiGiorno Pizza was developed using a combination leavened crust technology that I developed about 27-years ago. Made a small fortune showing all the other companies how to make it once it was commercialized with the DiGiorno pizza by Kraft.

If you want to see some good working formulas for making your own version, please go to the PMQ web site at <www.pmq.com> and go to the RECIPE BANK. I've got three different bake to rise dough formulas posted there.

Dough Ingredients / Re: Baking Powder Crutch for Quick Dough

I one had a mobile unit that I used for visiting local fairs, sporting events, etc. Just be aware that you will be licensed for your county and state. You may need to get additional licensing to operate in a different county, and if you are located near a state line as I was, you will need to be licensed in that state too. Plus, depending upon your concept, your trailer may need to be licensed in the "other" state too. Just a whole lotta things to be aware of.

Chitchat / Re: Dealing with Health Department for mobile business

J:

I neglected to add, if you want to make a truly chemical leavened crust the best solution is to use a fat encapsulated chemical leavening system. This is the type of leavening system that is used in conjunction with yeast in making the DiGiorno bake to rise pizzas sold at your local supermarket. To buy the fat encapsulated chemical leavening contact The Wright Group, Tony Oszlanyi at <tonyo@wenrich.com> They make the leavening material available in small quantities for use in single unit pizzerias or they will sell it to you by the truck load too.

Dough Ingredients / Re: Baking Powder Crutch for Quick Dough

J:

No two ways about it, fermentation does develop flavor in the finished crust, but to some the flavor has been said to be "beer like" as I said, fermentation, but they find it not so desirable as others do, so what's the solution? Chemically leavened crust. When I was a kid, soon after moving into town from the farm, I discovered Chef Boyardee (don't know about the spelling) pizza in a box. The crust was a dry mix to which you only added some water and stirred the mass together. It came out much like a biscuit dough. I pressed it onto a baking sheet, topped it with the supplied sauce and added our toppings. As I remember, I wasn't too excited about it back then, but hey....it was still pizza. I have gone so far as to make a totally unleavened pizza crust. This is easy to do, just make a dough as you would any other dough, except delete the yeast. Allow the dough to hydrate about an hour, then roll it out to fit a baking sheet. Dock the crust well, and parbake it. As soon as you remove it from the oven, dress the parbaked crust as desired and place back into the oven to complete baking. Very cracker like. We have used baking powder, but we find that it imparts a biscuit like flavor to the finished crust. This is due to the acid component in the baking powder (sodium aluminum phosphate) but we also found that when this acid was changed to sodium aluminum phosphate) so did the flavor, now it tasted something like a cake donut. Different brands of baking powder have

different compositions, so just be aware and be sure to read the label. We have had our best luck using this type of dough when we made it as an herb flavored crust.

Dough Ingredients / Re: Baking Powder Crutch for Quick Dough

Boyd;

All Trumps is a General Mills brand of flour. The next time you get ready to place an order for flour from Restaurant Depot give them a call to see if they carry, or can get the General Mills Organic High Gluten Flour. It comes in at about 12.5% protein content so it should work fine for all but the most die-hard New York pizza makers. We use it all the time so I can say that it would work very well in your application.

New York Style / Re: NY Style Pizza-All Trumps High Gluten Flour-Guilty Pleasure

We have a saying here at AIB International: The only bad question is the question that goes unasked. I like to tell my students that while it took me 45+ years to gain my knowledge of pizza, by asking the right questions you can gain that knowledge in just a few minutes. I think I can speak for everyone here in saying that this also applies to everyone here too. Questions = the shortest route to knowledge and understanding.

Sauce Ingredients / Re: Is this truly a New York pizza sauce recipe?

Barry;

Yes, I would recommend increasing the water temperature slightly to give you a warmed finished dough. For use in a home setting where refrigeration is not so great, I would suggest a finished dough temperature of about 75F.

Dough Clinic / Re: Adjust finished dough temperature before cold fermentation?

It is impossible to say just how long they will last without knowing more about the dough.

Formulation

Finished dough temperature

Your dough management procedure (what do you do with the dough from the time it comes off of the mixer until it is placed in the cooler for storage)

What kind of container do you use to store the dough in?

With all of these questions answered we should be able to give you a realistic expectation. Otherwise, I like to say that with the right formulation and dough management procedure you should be able to store the dough for a minimum of 2-days. With the correct formulation and dough management practices, you might be able to store it for 5-days or more. It all depends....

Neapolitan Style / Re: How long will dough last

If your flour is malted, and you manage the dough through the refrigerator for up to two days, you can normally get away without the need for any added sugar. If the flour is not malted, then you're going to need to either add some sugar, or create it through the addition of DIASTATIC malt.

Newbie Topics / Re: Sugar? Why?

John K.:

This past weekend I was at our local thrift store/bargain store, junk store, whatever you want to call it. I found three 1.5-inch deep, dark colored pans (7, 10 and 12-

inch diameter) for just \$5.00. What a deal! If you have anything similar to one of these near you check it out. It sure beats paying retail, even at Walmart.

Ours is a pretty good size store with a lot of "stuff" so you never know what you're going to find, looking through it all is half of the fun. Over the years I've picked up an assortment of stainless steel mixing bowls, deep-dish pizza pan grippers, and several plastic containers for ingredient storage. If you or anyone ever attends the NAPICS show, in Columbus, Ohio, be sure to stop at the Restaurant Equippers booth, they have a lot of really neat stuff there too, and their prices are great to boot!

Chicago Style / Re: First successful Deep Dish

C. Bob;

About the only thing it doesn't do is talk to you....probably a good thing.

That scale has great capacity (8000-grams), and weighs in both lbs/oz as well as metric.

I gotta get me one of those!

Thanks for sharing,

Prep Equipment / Re: Just bought a 100.00g scale from Amazon for \$7.80

I've seen a lot of the Hamelton Beach and Waring commercial duty mixers in service. You might check out E-Bay to see if you can find a deal there on one.

Off-Topic Foods / Re: Malt Blender

Sugar in the dough can provide additional food for the yeast to feed upon, this is especially true if you are planning to give the dough a very long fermentation time. It also contributes to the crust color development in the oven. This can be a double edged dagger though. While the sugar can help the dough color up in the oven, it can also lead to excessive charring/burning of the crust, especially if you are baking at high temperatures. The shorter baking time brought about by the faster crust color development with sugar present, can reduce the crispiness of the finished pizza, and lastly, depending upon the type of sugar used, it may contribute to the finished flavor profile of the baked crust (think sweet, or malty as when nondiastatic malt syrup is used).

Newbie Topics / Re: Sugar? Why?

For the price, the 1000-gram capacity scale looks like an excellent companion scale for weighing the larger things like flour and water. :)

Prep Equipment / Re: Just bought a 100.00g scale from Amazon for \$7.80

Wes;

It's pretty easy, but you do need to make a couple of changes.

The whole wheat flour will carry more water than your regular white flour. You will need to experiment to find the exact amount of extra water to add, but for starters, I'd recommend adding 8 to 10% more water. Since the whole wheat flour is slower to hydrate than white flour I suggest using a "soaker". To do this, put the whole wheat flour in a suitably sized container, and add the full amount of water to the flour, stir until the consistency of wet oatmeal (it should look sloppy). Set aside and allow to hydrate for at least 1-hour. More time won't hurt it. I have even put it in the fridge to hydrate overnight for use on the following day. Transfer the soaker to your mixing bowl and add the remainder of ingredients and mix just until the dough comes smooth and springy to the touch. From that point on, you should be able to manage the dough in your normal manner. Keep in mind that whole wheat doughs do not hold up very well for more than about a day in the fridge after it has

been mixed as a dough. Some ideas for consideration:

- 1) Use butter as your source of fat.
- 2) Use 3% NONDIASTATIC malt syrup to replace any sugar in the dough recipe/formula.
- 3) After opening the dough into a pizza skin, wet the edge of the dough with a little water and sprinkle the edge only with some sesame seeds. The flavor complements the whole wheat.
- 4) If you can find whole white wheat flour give it a try since the flavor is better than the flavor of whole wheat flour made from a dark red wheat variety.

Dough Clinic / Re: Whole Wheat Flour

PB;

Our research has shown that pizza dough is best mixed to a point of under development. The best way to describe it is to say that the dough should be mixed just until it begins to take on a smooth, satiny appearance. Any more mixing than this will over develop the gluten for the characteristics that we're looking for in a pizza crust, namely an open, porous crumb structure. Over mixing of the dough typically results in a more "bread like" sound familiar? finished crumb structure. I'm used to seeing mixing times in the 4 to 6-minute range, but it is difficult to say if that is correct for your flour and mixer load. In any case, you might want to look at a series of doughs with progressively less mixing time to see if that helps. Good luck with your new mixer, once you get it sorted out you'll love it.

Prep Equipment / Re: Just switched to Bosch, dough doesn't seem to turn out right -advice?

I can't comment on the authenticity, but further cooking of tomato paste?

They got the tomato concentrated down into a paste by heating and removing a good deal of the water, so I would be hard pressed to see anything good happening flavor wise by again heating the sauce, prior to application, and then finally putting it on a pizza where it will again be cooked. Seems like a lot of cooking to me. Most N.Y. style sauce recipes/formulas that I've seen use either crushed tomato or San Marzano tomatoes that have been torn apart for use as part of the sauce, some with the other part sometimes consisting of a much lesser amount of tomato paste used for thickening the otherwise thin sauce. I don't precook mine either as it will get all the cooking it needs on the pizza, and I always like to include a small amount of olive oil to give added dimension to the flavor profile.

Sauce Ingredients / Re: Is this truly a New York pizza sauce recipe?

Norma;

After 45+ years of eating, sleeping, breathing, researching, and consulting on pizza, a little has to eventually rub off.

My job has always been fairly easy since I've got all the tools and toys one could wish for at my disposal for making, developing, and researching pizza. You and all of the other folks here are the truly innovative and creative individuals as you are all researching the different aspects of pizza, developing different styles of pizza, reverse engineering pizzas, and just plain making great pizzas all without the big and expensive toys that we work with. Now, that's a challenge. It is also interesting to note that there is a strong interest displayed here to make what we like to call "artisan" pizzas, be it in a home oven, or a wood fired oven out in the back yard. For what it's worth, this closely mimics some of the direction that pizza industry is now going in as we are beginning to see more artisan type pizza offerings in the frozen food cases, and pizzerias, in general, are asking more questions about how to make them. So the knowledge that I'm gaining here helps to shorten my learning

curve too.

Sauce Ingredients / Re: Cooked vs Uncooked pizza sauce....

Here are a couple things that I learned about sauce.

1) You know how good the kitchen smells when you're cooking a sauce? Those aromatics are being driven off from your sauce, never to be smelled again. Moral of the story, don't cook the sauce since it will be cooked all it needs to be on the pie during the normal baking of the pizza, and it will actually provide a better flavor. From a commercial perspective cooking the sauce presents some problems too.

There is the 4-hour food safety rule which basically states that a product cannot be allowed to be at a temperature that will support microbial growth (lower than 140F and greater than 40F) for an accumulated time not to exceed 4-hours. When cooking a sauce it MUST be heated to a temperature of 160F or more, then it must be cooled, and the time it spends in that critical temperature range (40F to 140F) erodes the 4-hour rule time period.

2) Oil of any kind in the sauce helps to entrap the flavors released during baking of the pizza, potentially resulting in a better flavor profile. Have you ever eaten a piece of cake taken home from a party where there were smokers? On the following day the cake and icing would have a very decided smoke flavor. This is why the butter container in the fridge always has a cover on it. If it isn't covered the butter will pick up and aroma in the fridge. No, sauce doesn't need the added oil, but if your sauce is too oily I'm betting that you have added too much oil. Many sauce formulas contain at least some oil for the reason cited above, but in my experience the amount of oil seldom exceeds 2 to 3% of the total sauce weight.

3) For use on pasta, always pre-cook the sauce since it won't get cooked upon application to the pasta, unless you're making lasagna, then at least for me, I'm back to using uncooked sauce.

Sauce Ingredients / Re: Cooked vs Uncooked pizza sauce....

Peter;

Yes it is, actually I sent it to her under separate cover right after I wrote my response.

Tom Lehmann/TDD

General Pizza Making / Re: Favorite "quick" dough? I need something with an 8 hour or less rise

Pete;

In the right hands the tapered rolling pins will work, but the tendency is to just attack the dough with the pin which results in getting an uneven thickness, whereas the straight pin (I like to round the ends over to help prevent snagging the dough) will automatically give you a flat dough surface with uniform thickness after very little practice.

Cracker Style / Re: Pizza Shoppe-style?

Heather;

I'm sending you a copy of my Home Made Pizza Dough Recipe. Not knowing anything about your flour, the best I can offer is to say to adjust the water as necessary to give you a moderately soft dough consistency after about 3 or 4-hours fermentation. Allow the dough to ferment in the bowl for about 3-hours, then turn it out and knead a few times, if the dough feels a bit stiff, add a little water to the dough and work in in, then place back into the bowl to continue fermenting for another 30-minutes, turn it out again and check the consistency of the dough. If it needs more water repeat the above, if it feels OK just place the dough back into the

bowl to continue fermenting until about 90-minutes before you want to begin opening the dough into pizza skins. Turn the dough out of the bowl and divide into desired size/weight pieces (I suggest that you make a 3 X recipe and divide the dough into five or six pieces for 12-inch diameter pizzas) round each piece into a round ball (don't try to make it too tight, just a lose ball will work fine) set the dough balls aside on a floured area, lightly dust the top of the dough balls with a little flour and cover with a piece of plastic to prevent drying. Allow the dough balls to ferment until you are ready to begin making your pizzas (about 90-minutes). Open each dough ball into a 12-inch pizza skin, dress and bake. Note: This recipe works best using a higher protein content flour such as a bread type flour. I normally use Pillsbury Bread Flour available at most supermarkets. If you will be baking your pizzas on a stone, try shaping the dough skins into heart shape for something a little special.

General Pizza Making / Re: Favorite "quick" dough? I need something with an 8 hour or less rise

IE;

I know the feeling. I one had one but I sold it to a new upstart pizza shop that was struggling to get up and running on its very limited funds. A workable solution is to use a "pie pin" these are better than a rolling pin to roll out stiff doughs. With a rolling pin you will most likely ruin it by bending the handles (called dog earing it) but with a pie pin you can put a lot more force onto the dough without damaging anything. A pie pin is nothing more than a wood rod about 18-inches long and a minimum of 2-inches in diameter. If you know anyone with a wood turning lathe you might be able to talk them into making you one in exchange for a pizza. Dirt simple: wood cylinder 16 to 18-inches long X 2 to 3-inches in diameter. After you make it, be sure to wipe it down periodically with a little white mineral oil. This will both seal the wood and keep it from splintering or warping.

Note: I've tried to use just the barrel from a small wood rolling pin (with the rod and handles removed) but it was too short for ease of handling in my case, but if you've got an extra one in the drawer you might give it a try to see if it works better for you.

Cracker Style / Re: Pizza Shoppe-style?

Pete;

That's one fine looking 2 X 4!

Prep Equipment / Re: Pizza Peels

Some time ago I had indicated that I would look into this formula and procedure, I haven't forgotten that promise, as I've been doing just that. My son lives within walking distance from the Olathe store so we were able to visit there several times over the Holidays. Here is my best effort to date:

Flour: 100%

Salt: 2.5%

Sugar: 1%

Olive oil: 1%

Yeast:(IDY) 0.2%

Water: 45% (variable)

Procedure:

Put water (75F) in mixing bowl followed by the salt and sugar, then add the flour and the IDY. Mix until thoroughly whetted, add the oil and mix until the oil is just incorporated. (this dough is too stiff for my K5-A) cover the bowl and allow the

dough to ferment for at least 4-hours, turn the dough out of the bowl and knead for about 2-minutes, lightly oil the bowl and put the dough back into the bowl to ferment for 1-hour, turn the dough out of the bowl and cut into desired size pieces (16-ounces) place into plastic bags and refrigerate for 24-hours, remove dough from the refrigerator and allow to warm at room temperature for 3-hours, turn the dough out of the bag and pin the dough out to approximately 1/8-inch thickness, dock the dough sheet and drape it over a lightly oiled cutter pan and roll over the top of the pan with a rolling pin to cut the dough into the pan, set aside for 20-minutes before dressing and baking. They bake in a deck oven at (as close as I can see) 500F. Their process closely follows one of the older dough making procedures used back in the 1950's except back then the dough was stored in a bulk contained and a piece of dough was grabbed and pulled off of the bulk piece, it was then taken to the sheeter where the dough was sheeted to thickness and then cut to size.

Cracker Style / Re: Pizza Shoppe-style?

Peter;

The way the oil is typically added is as follows: Dry ingredients are first added to the mixing bowl, then the water is added and the mixing cycle started, as the mixing cycle starts the oil is pumped into the mixing bowl and the dough is mixed in their usual manner. This prevents large clumps of oil soaked flour.

Dough Ingredients / Re: What do they use>?

Peter;

I helped them to make the transition from store to wholesale, and I also helped them to set up their pressing parameters. The dough that they use is unique in some perspectives but pretty normal in others, here's what I mean. UNIQUE: They do mix the oil into the flour to achieve a weaker, more tender eating dough characteristic. They can get away with it to an extent due to the high speed mixing that they employ. PRETTY NORMAL: The dough is then divided and processed (pressed) without any human hands touching the dough. Any stickiness the dough might have is negated by the addition of oil.

If you look at the nutritional facts panel on commercially made frozen pizzas more often than not you will see high calorie counts from fat as well as high salt levels. This is pretty normal for this type of pizza, but to the credit of the industry, some manufacturers are beginning to address this by reducing fat and salt (sodium) levels in their pizzas as consumers demand healthier foods.

Dough Ingredients / Re: What do they use>?

Peter;

What you end up with is a bunch of gray colored oil that is oil soaked. Because gluten is formed when two of the wheat proteins, (glutenin and gliadin) are agitated in the presence of water, and the water, in this case will not displace the oil that has soaked into the flour, a good portion of the flour is incapable of providing to the gluten matrix, as a result the doughs are wet and somewhat sticky not to mention lumpy if mixing is not vigorous enough to break up those lumps of oil soaked flour. The shortening or solid fat, as it is called, works because it does not soak into the flour, instead, it only coats the outside of it which still allows for the flour to be hydrated to form gluten. Going one step above the Blitz method as I described, commercial producers use hard fat flakes (kinda look like those old soap flakes), and they mix these into the dough just about 4-minutes prior to the end of the mixing time. They can get away using the fat flakes in this manner because those flakes are so hard that they are almost impossible to work into the dough as

can happen with shortening if it is mixed too much. Those hard fat flakes then melt during baking and the fat is absorbed into the surrounding dough. The holes remaining serve the same purpose as the chunks of shortening, to give a pastry like appearance and to some extent mouthfeel/eating characteristic.

Dough Ingredients / Re: What do they use>?

Absolutely right, all oils impact the dough, or should I say the "flour" in this manner. Shortening is a whole different matter as the crystalline nature of the shortening prevents it from being absorbed by the flour, unless it is melted, and in that case it now acts like an oil.

Dough Ingredients / Re: What do they use>?

Peter;

We continue to use pomace oil as our main "go to" olive oil in our annual pizza seminar. The question was also raised if the oil had any influence on the browning properties of the crust or the way the dough absorbs water. While there may be slight differences in color attributable to the source of oil, the color variance is well within the normal for color variation with normal baking properties, so for all practical purposes, the type of oil has no real impact upon crust color characteristics. However, we do know for sure that oil can/will impact the way the flour absorbs water. We have all heard stories of how the humidity affects the dough absorption, just an old wives tale. But, if you put the oil and water together in the bowl, and then add the flour, the oil floats to the top of the water where it contacts the flour and promptly proceeds to soak into it, rendering the proteins responsible for forming gluten ineffective in that important role. Remember how/why you make a rue when making gravy? Same thing happens here. When this happens, the doughs take on a different feel due to the difference in gluten development. To correct for this condition, I developed a mixing procedure (called the delayed oil addition method) where the oil is not added to the dough until the flour has had a chance to hydrate on the water, which is typically about 2-minutes into the mixing cycle for 60 and 80-quart size mixers, the oil is then added and incorporated into the dough without any problems due to interference with gluten development.

Dough Ingredients / Re: What do they use>?

An excessive amount of cornmeal on the peel will create problems as described as will an excessive amount of any kind of dusting flour. It might have something to do with the way you are opening/handling the dough. I always use plenty of flour when opening the dough into a pizza skin, but then I pick it up and give it a toss or two, if you elect not to toss it, try brushing the excess flour off of one side then flip the dough piece over and brush off the other side, with that done, immediately place the pizza skin onto a lightly dusted peel (my personal favorite peel dust is made from equal parts of semolina flour, regular flour and fine cornmeal. Once you have the skin on the peel, give it a few shakes to ensure it is free from the peel, now dress the skin and take it directly to the oven, in some cases I've been known to give the peel a couple shakes while I'm dressing the skin just to make sure it is not adhering to the peel. I have both wood and metal peels and of all my peels, the wood ones work best as a prep peel. The solid aluminum peels are best relegated to use as an oven peel. A good wood prep peel is, in my opinion, worth its weight in gold. There have been a number of excellent discussions on the use and making of wood peel here.

General Pizza Making / Re: Burning Cornmeal Help

SG;

If you are asking what do most pizzerias use for fat, that will get you a mixed bag of answers. Some pizzerias use nothing but pure olive oil, for others that is too expensive, or doesn't provide the flavor profile their customers are looking for so they will use any of the following: canola oil, corn oil, and common "vegetable" oil. Others who want the flavor of oil but not the associated cost will use a blended oil typically consisting of about 20% olive oil and 80% canola oil. The blended oil is probably the one most commonly encountered. In a few places butter, margarine or lard are used, but these are by far the exceptions.

Dough Ingredients / Re: What do they use?

A couple of other things come to mind. Try eliminating the sugar entirely from the dough formula. This will force you to bake the pizza a little longer to get the bottom crust to color up resulting in a more robust bottom crust characteristic. Also, you might be stretching the dough skin a little too thin across the center section. This can give you a condition where the crust is initially crispy, but very quickly turns soft and soggy.

Dough Clinic / Re: Soggy in the middle

Is there a possibility that the stone might be too thin and not storing sufficient latent heat to bake the bottom of the pizza? Remember we're only looking at a baking temperature of roughly 465F. Once you suck the heat out of the stone it won't recover much during the baking time of a pizza.

Newbie Topics / Re: Cooking underneath of pizza

Gene;

Most health departments take less than a positive view on wood and food coming into contact with each other. We have seen this in the bagel industry where wood bagel boards were used since the first bagel was made, but now they are relegated to relics that are hung on the wall. Bakers used to use wood troughs (the bacteria in the wood would inoculate the dough to retain specific flavors similar to using a starter) but alas, these are gone too. Now they are looking at wood table/bench tops and it looks like they are on their way out too. I realize that the wood dough boxes are great, and for the most part they are as safe as anything, but as you know, you can't argue, or reason with your local health department. Been there, done that, never won one yet!

Here is a classic: We're making creme filled bismarks, you see them all the time. Health inspector says we need to refrigerate them, I ask why? He says "Because they contain CREAM. I say "no, that's wrong, they are only called CREME filled, as in the fact that they use a CREME filling". He says "Doesn't matter, they are CREAM filled" I pull out the bucket of prepared CREME filling that plainly states "Does not require refrigeration after opening" and then I show him the label, it reads basically, water, emulsifier, stabilizers, food gums, citric acid, artificial color, artificial flavor. He points to the label and says "Right here it says Bavarian CREME Filling". Sometimes you just can't argue with intelligence at that level and expect to win. So be it with wood.

In the home, it is an entirely different matter, as at this time we can still pretty well do what we want to.

Prep Equipment / Re: Poor Man's Proofing Boxes

Gene;

These are OK to use for home use, but be aware that in a commercial setting, such as in a pizzeria, most, if not all health departments will require that they be made

of a plastic that is approved for food contact. Also, it cannot be made of a hard plastic. A common health department violation is one where we go to Walmart and buy a roll of plastic trash bags for use in covering sheet pans of dough balls. Since the bags are not stated as being approved for food contact, it becomes an issue. It's this way with a lot of the cleaning supplies too where you can't use it if you don't have a MSDS on it. Life is truly interesting at the store level, but a lot more fun and less stressful at home.

Prep Equipment / Re: Poor Man's Proofing Boxes

Dave;

I'm very familiar with the problem that you are having. Pressed pizza doughs require a VERY relaxed dough in order to press out without the dough snapping back excessively. Our normal approach is to add a reducing agent to the dough to weaken it, thus reducing the snap back. Reducing agents that are commonly used are L-cysteine at 20 to 60 parts per million (based on total flour weight), PZ-44 <www.foremostfarmsusa.com> which is a blend of dairy whey and L-cysteine, and because it is diluted into the whey the use level is typically given at 1 to 2% of the total flour weight, and then there is "dead yeast" this is a commercial product made up of dead yeast which contains the amino acid glutathione, a substance very similar to L-cysteine. Many yeast manufacturers offer this product. The normal use level is about 2% of the total flour weight. While sulfites and protease enzymes can also be used as reducing agents we don't normally recommend their use in this application. The sulfites also impact yeast activity by slowing it down and the enzyme approach can't be turned off, so the dough just keeps getting softer and softer until it is finally baked. Other options that could be explored are the use of milk to replace the water. Do not scald the milk prior to use. The unscalded milk contains specific proteins which can also impact the dough by making it softer and weaker, and that's what we're looking for. But be aware that the milk may cause the crust to bake out to a darker than desired color. Possibly the least offensive action that you can take would be to maximize the dough absorption (use as much water as you can while still being able to handle the dough, and then rounding the dough into balls , coating the dough balls with salad oil and placing into individual plastic bags, like bread bags. Twist the open end of the bag to close and tuck the pony tail under the dough ball as you place it into the cooler to cold ferment at least overnight. On the following day, remove the dough balls from the cooler and allow them to temper AT room temperature for about 2-hours, then turn the dough ball out onto the press platten and press the dough ball out into a pizza skin. As you pick up the pizza skin from the platten and transfer it to a screen, disk or peel you can adjust the final shape and size of the skin pretty easily. The key here is to make sure the dough has been well fermented and receives a minimum amount of handling after the fermentation period, this is why the bag method works better in this application than the dough box procedure since you run the risk of over handling and tightening the dough ball as you work it out of the plastic dough boxand transfer it to the press platten.

Dough Clinic / Re: Dough won't stay stretched.

PB;

Yes, that would be the black Dura Coat finish. Doing the math, your 12 X17 pan is 204-square inches (L X W) and the 13 X 18 is 234-square inches, a difference of 30-square inches (larger) so, dividing 30 by 204 we get a 14.7 (call it 15%) increase in pan size, so if you're making one dough for one pan, you will need to increase your dough size by 15%. If you have dough left over after filling the pan, then you will need to go with using

the "dough factor" method for calculating the weight of dough needed for the new pan size. In this case you would divide the dough weight used with the 12 X 17-inch pan and divide that number by 204 (the surface area) to get your dough loading factor aka dough weight per square inch of pan surface area. Now all you need to do is to multiply the dough factor by the square inches in your new pan size (234) and you will get the dough weight needed for your new pan. Here's a neat trick, put your dough formula into bakers percent and add up all of the percentages (you'll probably get something around 164), move the decimal point two places to the left so now you would see 1.64 and divide the total dough weight by this number, the result will be the flour weight needed to make your new dough size, once you have the flour weight the rest is easy to calculate the amounts of each ingredient. Or, you can just use the conversion tables.

Stones/tiles/steel, Pans & Accessories / Re: Steel Pan Woes... Suggestions?

I'm not familiar with "pizza Yeast" but I am very familiar with IDY. Most forms of IDY contain some ascorbic acid to counter the softening effect of the glutathione present in all forms of dried yeast (less in IDY than any of the other forms), but there is also one, I want to say it is SAF Green Label IDY that does not contain the ascorbic acid, so it will exhibit a slight softening effect upon the dough, possibly making it a little easier to open into a pizza skin.

New York Style / Re: Fleischmann's Pizza Yeast

Just as an FYI, both onion and garlic contain a compound that will catalyze the pectin in the tomato causing it to gel/thicken to the point where it takes on the appearance of tomato jelly rather than pizza sauce. Yes, it does the same thing to pasta sauce too but because we typically cook a pasta sauce we add enough water to compensate for the thickening and evaporation so we don't usually recognize it as a problem. To correct the problem in pizza sauce, or any tomato based sauce all you need to do is to "nuke" the onion and/or garlic in a little water until it comes to a boil (you're actually looking for a temperature of about 180F) but 212F, or close to that won't hurt anything, assuming you're at or reasonably close to sea level. Once the onion/garlic is heated to this point it can be added to the sauce without visions of it turning into tomato jelly.

I am also an advocate of using fresh onion and garlic, but if I must use a dried form, I really think the onion flakes provide a better overall flavor than the onion powder.

Sauce Ingredients / Re: Onion Powder vs. real onions

I made a couple of pizzas a number of years ago using a similar formula. It went from concept (LET'S MAKE PIZZA) to a finished product (PIZZA) in well under an hour, if I remember correctly we had those pizzas on the serving table in something like 38-minutes (included scaling, mixing, rest period, if you want to call it that, forming, dressing and baking). OK, it was pizza, but don't ask me about the flavor of the crust. Thank goodness the sauce, cheese and toppings had, and provided, some flavor.

General Pizza Making / Re: Pizza in an hour

We have made the PH type of deep-dish pizzas many times and we have found that with our dough formulation, using a dough temperature of about 55F (our dough was cold fermented for 24-hours, then removed from the cooler and allowed to temper at room temperature for 2.5-hours before being rolled and panned) requires a final proof time of 70-minutes for optimum results. Our old PH pans even have a line stamped into the side of the pan indicating the height the dough

should be allowed to proof before dressing and baking. Keep in mind that proof times will vary with dough absorption, dough temperature, and yeast level so some experimenting will be needed to find the proof time that works best with your dough formulation and procedure.

General Pizza Making / Re: Dough Prep Question

Mark;

You are absolutely correct in stating that "launching" the pizza can in effect, rearrange the toppings on a pizza. A good oven man will know how to both launch and shake a pizza skin off of the peel. Shaking is used when you either don't have the needed room to launch (one motion into the oven and a reverse motion pulling the peel out of the oven, hopefully leaving the dressed pizza skin behind in a recognizable shape or form) while shaking the dressed pizza skin off of the peel is just a rapid series of short, back and forth strokes that result in walking the dressed skin off of the peel. We use this method commercially when we are putting that last dressed skin into the oven. and the only space for it is surrounded by other pizzas being baked. I normally begin the peel motion outside of the oven and continue it until the dressed skin has safely left the peel. One thing to note is that successful launching should actually begin with the more gently shaking of the dressed skin on the peel outside of the oven, the only real difference in in the last stroke (launch) or strokes (shaking).

General Pizza Making / Re: Do toppings migrate towards the middle of the pie during baking?

The last time I saw Naan being made it was when I was in Yemen. A lady would dip her arm into a tub of water, wipe her hands, and then lightly oil them, she would then pick up a dough ball (if you want to call it that) and press the dough against the inside wall of the oven, which by the way was heated by burning cardboard. To remove the baked bread she used two long sticks, like drum sticks, or fryer sticks and holding them much like chopsticks, she deftly removed them from the oven and placed the hot bread into a wicker basket. The reason for putting her arm into the water was to prevent getting burned as she was reaching elbow deep into the oven, but using cardboard to fire the oven wasn't exactly the best thing to do to my liking as all of the Naan had a rather distinctive cardboard like taste, but then her daughter was selling it as fast as her mother could fish it out of the oven. Your oven looks a whole lot more practical. Nice looking Naan!

Off-Topic Foods / Re: Naan in a Home Tandoor

Gene;

Yes on both counts, yes they are expensive, and yes they are worth it. You can safely soak them in hot soapy water, then scrub them out using a plastic bristle brush, rinse, and sanitize, then wipe dry and if you want, give them a quick pass through the oven to thoroughly dry and be ready to reuse the pans. You can't soak the seasoned pans as this will result in the seasoning peeling off like a bad sunburn (been there, done that, pictures available upon request). I would suggest getting one or two pans to experiment with, and let the pans sell themselves. Be sure to request the black anodized, non-stick finish. In our annual pizza seminar we do a simple test with these pans where we forcefully scrub the edge of a quarter across the pan (back and forth numerous times). The only damage that occurs is to the quarter where a flat spot has been created on the edge of the quarter. I can only account for these pans lasting close to 20-years as that is how old some of ours are, and they are still in great shape. As for baking quality, they bake as good as the best seasoned and blued steel pans, and better from the "get-go" since you don't

need to wait for the seasoning to cure. With the Lloyd pans you just wash them when you get them, dry thoroughly, oil lightly with the first use, and then either don't use oil for a baked appearance/texture, or use oil in the pans for that fried texture and appearance.

Stones/tiles/steel, Pans & Accessories / Re: Steel Pan Woes... Suggestions?

Welcome Jim, I'm only 140-miles or so west of you in Manhattan.

New Forum Members / Re: Jim from KC

Gene;

I believe it is NY, MA, and CA where they are really keen on carbon in food. Seasoning on a pan = polymerized and carbonized oil. At one time MA did not allow the use of seasoned pans for that very reason. I don't know the current state regs at this time. This is why anodized pans became so popular. Some of the anodized pans are also non-stick, such as those supplied by Lloyd Pans

<www.lloydpan.com> with these types of pans you can still use the oil in the pan to achieve the fried effect, but unlike seasoned pans, you can also soak them in hot soapy water to clean without destroying the pan finish. Unlike other non-stick coatings the anodized coatings do not wear off. We have a good number of them in our inventory that have been in use for over 15-years without any deterioration of the non-stick coating. BTW: Steel wool is not a good thing to use on any seasoned pan as it will scrub off the seasoning, resulting in the pizza sticking to those surfaces. That sticky feel that you mentioned is perfectly normal on a spun steel pan. As you continue to use the pan (just a couple bakes are needed) the seasoning will continue to harden into a brown/black finish that we see on so many of the old, well used bakery pans in use in many of the retail bakeries.

Stones/tiles/steel, Pans & Accessories / Re: Steel Pan Woes... Suggestions?

When using steel pans we typically season them with canola oil, and after several bakes when the pans have turned to a darker color (both inside and out) we will always add a small amount of oil to the pan to help the dough/crust release, additionally, this also allows the pan to continue seasoning, developing an ever darker color (some of our pans are essentially black in color both inside and out). Our experience is that you will always get a better bake if you add at least some oil to the pan for each bake. This is because the oil improves the heat transfer between the pan and the dough. Additionally, a number of years ago we looked at shortening (like Crisco) v/s oil in the pan. We found that in all cases the oil provided for a firmer, crispier bottom crust than did the shortening. A lot of people have commented on the crispiness of the Pizza Hut deep-dish pizzas. This is accomplished through the addition of oil to the pan prior to baking, making the finished crust closer to fried than baked

Stones/tiles/steel, Pans & Accessories / Re: Steel Pan Woes... Suggestions?

My own personal experience has been that when I bake two pizzas at a time I usually end up with an atypically long baking time. I attribute this to the fact that I'm baking on two oven shelves (two different heights in the oven) so they end up baking differently, this necessitates the need to open the oven door more frequently, thus losing heat from the oven (especially top heat). I also find that I need to turn/rotate the pizzas more frequently with two pies in the oven. It just seems to be more of a balancing act when I bake two pizzas at a time than when baking only one pizza.

Newbie Topics / Re: Oven Adjustments

Peter;

You are correct in the order of dominance for the ingredients, with a single caveat, the 2% rule. This states that once an ingredient is at or below the 2% level it no longer need to be shown in the order of predominance. With a lot of baked items you can use salt as a marker, that is; salt is typically used at about the 2% level, so for any ingredients listed before the salt, it's a good bet that it will be used above the 2% level. In pizza though, salt is rarely used at that high of a level due to all of the other salt contributions, so my feeling is that oil might be a better indicator for the 2% level.

Cracker Style / Re: pizza hut thin crust???

Yep, I'm familiar with that pizza, affectionately known as "quick stop pizza". A good formula for making it is as follows:

Flour: Superlative or equivalent (12.5% protein content) 100%

Salt: 1.75%

Sugar: 2%

IDY: 0.4% or ADY: 0.5% or CY: 1%

Blended oil (20% olive oil + 80% canola oil) 3%

Water: (65F) 60%

Place water in mixing bowl, add salt, sugar then the flour, add yeast on top of the flour and mix for about 2-minutes at low speed or just until you don't see any dry flour in the bottom of the bowl, then add the oil and mix for 1 more minute at low speed. Finish by mixing for 8-minutes at medium speed, or if you can't mix the dough at medium speed, go for 12-minutes at low speed. Target finished dough temperature is 80F. Immediately take the dough to the bench and scale 13-ounces for a 12" crust (dough weight factor of 0.1150442) or 0.1150442-ounces of dough per square inch of surface area). Form the cut dough into balls, place into plastic dough boxes, wipe each dough ball with salad oil, cross stack in the cooler for 2-hours, then nest/cover and allow to cold ferment for 24 to 72-hours. To use the dough, remove some from the cooler, keeping it covered, and allow to temper AT room temperature for 2.5-hours, then pass through a sheeter.dough roller to open the dough to 66 to 75% of the desired diameter, finish opening the dough up by hand to full diameter, or if you're good at it, you can open the dough up entirely by hand. Place the opened pizza skin onto a well seasoned wire screen, dress the skin as desired, and bake at 450 to 475F until golden brown, remove the pizza from the screen and "deck" it. This is where the pizza is removed from the screen and allowed to finish baking for the last minute right on the oven deck.

This should come pretty close to what you are looking for.

General Pizza Making / Re: Looking for Better Pizza Dough Recipe

Morgan;

There is a distinct possibility that the "00" flour that you are using isn't treated with malted barley flour (malted), if you still have the original bag you bought it in check the label to see if it says anything about malting/malt. If not, you may want to add some sugar or diastatic (enzyme active) malt to the dough formula. Most diastatic malt preparations are rated at 20 degrees L so in this case the proper amount to add would be between 0.25 and 0.35% of the total flour weight. Keep in mind that as you increase the durum flour content the finished crust may become more chewy, especially after 10 or 15-minutes out of the oven. We have found this to be somewhat of a problem in doughs containing over 25% durum flour, but otherwise, the durum flour will also contribute to added crispiness of the baked crust when fresh out of the oven.

There is a current thread here on organic flour that addresses this same potential issue.

Dough Clinic / Re: Mixing durum&Tipo-00

Tom;

I've been using a very similar (almost identical) method for making pizza and bread doughs ever since I studied bread making practices in Romania almost 40-years ago. It works like a charm, and the 60 to 65% dough absorption is about right. We refer to the process as "biochemical gluten development". The only thing kneading or use of a mixer really accomplishes is faster gluten development, however faster gluten development goes bring some baggage in the form of a tighter, more springy dough that has to be addressed before the dough can be given its final shaping. I spent a good part of the Holidays this year at our son's home in Kansas City and during that time I made breakfast rolls, dinner breads, pizza and calzones all using this dough making process because it required so little of my time.

Dough Clinic / Re: No Kneading Pan Pizza Dough???

In addition to the lack of malt in the flour, there might also be a difference in flour/dough absorption properties between the two flours which could also contribute to the difference in oven spring properties as well as the bottom crisp. The best way to determine this would be to make doughs with 3% more and 3% less water/absorption and see if there is any apparent difference or improvement.

Dough Clinic / Re: Going organic and getting a bit more rise

I've worked on wood, marble and stainless steel, and my preference is for stainless steel. It is a snap to clean, and the dough really handles well on it for my way of opening the dough into pizza skins. I like to push the dough out to size on the table top and finish with a toss or two. The dough slides well on the stainless steel top but exhibits too much cling to the wood top. The marble top is also great, but more expensive.

If you opt for a wood top, the preferred oil to treat the top with is white mineral oil. The oil is applied after the top is scraped and damp wiped, then apply the oil liberally and allow it to soak in (overnight) then wipe off any excess and you're good to go again.

Prep Equipment / Re: Dough Stretching Prep surface

JD;

We raised two boys, both are young men now and very successful. I always made it a point to make sure I would spend as much time with them as I possibly could when they were young. Fishing, boating, hiking, nature studies (walking nature trails), and then as they grew older more fishing and outdoor things and we attended every sporting, school and church activity they were involved in. I always made it a point to emphasize that there were winners and losers, and that there was nothing wrong with being either one (that's one of life's realities that we don't teach our kids anymore), along the same lines I always said that there were leaders and followers, the leaders get to take a lot of the credit, but they are also burdened by a lot of the blame when things don't work out just right, while followers are pretty well exempt from both, again there is nothing wrong with either, they just need to make the decision as to what they want out of life. My work requires a lot of travel, but until the boys were out of college, I never allowed my travel schedule to exceed 25%. Above all else, remember, you and your wife are going to set the examples they will grow up and live by. Have fun and enjoy every moment it. Congrats!!

Chitchat / Re: Soon to be new Dad: Looking for wisdom

Bruno;

When baking in my conventional home oven I use my pizza stone. Thin crust pizzas are baked at approximately 550F in a center rack position, while deep-dish pizzas are baked at 450F using an aluminum screen between the stone and the pan. If I try to bake the pizza entirely on the stone I always end up with too much color on the bottom crust. Typical baking time for my pan style pizzas run about 18 to 20-minutes.

Dough Clinic / Re: help me dough dr!!!

If your scale has the tare capacity I like to put some of the flour in the scale pan, then weigh the starter directly onto the flour, then add directly to the mixing bowl...no loss of anything.

Dough Ingredients / Re: Weighing preferment starter - technique?????

We have looked at delivery bags from time to time and while there is some difference between bags of different manufacturers, the biggest difference that we found was due to the number of pizzas in the bag. Using 140F as the cut-off temperature, we found that a single pizza in a bag sized to hold a single pizza was good for about 30-minutes at most, while two pizzas in a bag sized for two pizzas was good for about 45-minutes. When we did three pizzas we got something close to an hour. Keep in mind that this was for conventional bags. If you use one of the high-tech bags with the heated ceramic disk I'm betting that you can best these numbers. You will need to do the work to find out what those times are though as we have not done any studies using any of these bags.

Shop Talk / Re: delivery bag question

Chaz;

I think another way of looking at it might be as follows;

Levain as shown is made with 250-grams of total flour weight and 50-grams of mature active levain or 20% of the flour weight in the levain is mature active levain. Then on the dough side we have 900-grams of total flour weight and 180-grams of the levain or 180 divided by 900 X 100 = 20%, so in this case we are using levain at 20% of the total flour weight in at the dough side.

Dough Clinic / Re: Using a starter instead of ADY

To get the full benefit from the starter you should use the starter to provide all of the leavening for your dough. If you use both starter and yeast, there is a high probability that the yeast will become the dominant microflora in the dough, resulting in more of a yeast leavened flavor in the finished product rather than the unique flavor provided from the starter which is developed through both yeast (wild yeast) and bacterial ferment (some form of lactic acid forming bacteria). You will need to experiment with the amount of your starter to determine how much will be needed to provide both flavor and leavening leavening to the dough. Some starters are quite active so only a relatively small amount is needed (5 to 15%) while others are less active so more (20 to 30%) is needed. These percentages are based on the total flour weight.

Dough Clinic / Re: Using a starter instead of ADY

Pizza Expo is a great show to attend and also a great pizza experience. True, it is focused on the owner/operator rather than the home pizza baker, but the science behind both forms of pizza making are essentially the same. There is also a wealth

of information on suppliers of both ingredients and equipment, and the reference materials that you will pick up on the show floor will be an asset to you for years to come.

I would highly encourage anyone to attend. Additionally, if you are located east of the Mississippi River, take a look at the NAPICS (North American Pizza and Ice Cream Show). It is held in Columbus, Ohio around the end of February. It is a very low cost show to attend, with a lot of suppliers to the pizza industry (bring some pocket change too as you can buy some equipment right off of the show floor at this show). They also have seminars at a very low cost just like Pizza Expo. We used to do a Test Kitchen there but this year we will not be attending, but still a great show to keep on your radar. For information on this show contact the Ohio Restaurant Association at their website.

[Chitchat / Re: Anyone attended the Pizza EXPO in Las Vegas???](#)

We do it all the time when we are testing dough ingredients or different dough experimentals. We go through the entire process of making the dough and then when we are ready to dress the pizza skin we use only tomato sauce but we do use the cheese that we plan on using with the finished pizza. This way we can determine what the optimum bake time and temperature is (reasonably close).

[Dough Clinic / Re: Can you make the dough and bake it without making a pizza](#)

What is your finished dough temperature? Too high of a finished dough temperature can result in excessive acid formation in the dough. Typically, we see temperatures of 65 to 70F used where long cold ferment periods are employed. That said, if you still want to reduce the acidity of the dough you might include a buffer in the dough as an ingredient. Calcium is an excellent buffer, so you might look at using calcium sulfate, or even something as basic as milk or yogurt which are good sources of calcium. The calcium will buffer the acid formation, making for a less acid dough in the long run. This is why antacids such as Tums contain calcium.

[Dough Clinic / Re: cold rise acidic control](#)

It all depends upon the size of dough that you are making. In a commercial setting we are making upwards of 80-pounds of dough at a time. It is all but impossible to uniformly cool this dough as a single piece, but when subdivided into individual dough balls, it can be uniformly cooled without much problem, what this means is that all of the dough balls will be the same with regard to dough performance and finished crust quality. In a home setting, some refrigerators can cool a 3 to 4-pound dough ball without much problem, while others will struggle, so in this case dividing the dough into individual balls prior to placing it into the refrigerator will result in more consistent cooling of the dough. What this means to you is that when you make the dough again and manage it in the same manner, it will perform very similarly to the way it did previously. It is done in the name of consistency. I have also found that when I make my dough balls right after mixing and place them into individual plastic bread bags, I can turn the dough ball out of the bag into a bowl of dusting flour and open it into a pizza skin more easily than I can an irregularly shaped piece of dough. Yes, I could form those irregularly shaped dough pieces into balls and set them aside to rise again, but that takes additional time which I don't always have.

[Dough Clinic / Re: Cutting into dough balls after kneading](#)

Deactivated or dead yeast is used both as a flavoring agent (no, it does NOT

provide a yeasty flavor), and as a reducing agent, similar to L-cysteine (PZ-44) to both shorten the mixing time of the dough and provide greater extensibility in the dough for easier forming, especially under commercial (large scale) production/processing parameters.

Dough Clinic / Re: deactivated yeast

There is no problem in cutting the dough into balls immediately after kneading/mixing. This is how it is commercially done. Yes, the elasticity is affected by the length of time the dough is fermented. The longer the dough is allowed to ferment, to a degree, the softer and more extensible it becomes, then at a certain point, the dough becomes what is referred to as "bucky" or tight, lacking extensibility.

Dough Clinic / Re: Cutting into dough balls after kneading

From a food safety stand point there should not be any issues with a yeast leavened dough in the cooler, but as the dough ages, even under refrigeration, it continues to develop the byproducts of fermentation (acids, alcohol, and carbon dioxide) and all of these will slowly take their toll on the dough, specifically the protein content. If you can mix the dough cold, and then get it into a cold refrigerator (34 to 36F) two to three weeks is not uncommon. It all depends upon how well you are able to manage the dough temperature as well as the temperature at which the dough is being held. Remember, even just plain yeast has a maximum refrigerated shelf life of 30-days, though significant deterioration will normally take place inside of two weeks refrigerated storage. Since a good deal of the flavor results from a denaturing of protein during the baking process, as a dough continues to age in the cooler, more of the proteins in the flour are damaged and denatured during baking to provide a "different" or changing flavor, which can be a good thing, or it can be a bad thing depending upon your perspective and your likes.

Dough Clinic / Re: Cold Rise Expiration Dates?

From what we have seen, the answer to this question is yes and no. Yes, the hydration level can impact yeast performance, but once you reach a plateau on absorption, generally speaking about 56 to 58% the effect of additional water is minimal, but what you see is a softer, more fluid dough that responds to the byproducts of fermentation (alcohol, carbon dioxide, and acids) to a much greater magnitude than it would at a lower absorption. IE, the softer dough expands more readily, gets bigger faster and appears to show the effects of greater fermentation, but it's just the softer dough that you're seeing, not more or faster fermentation. It is really pretty complex and would take a small book to do it justice, so this is just a very general summation of what is happening.

Dough Clinic / Re: Hydration and yeast amounts

I can't sat too much about it but it is a ready made (pre-sheeted) frozen crust that is received from their commissary then slacked out at the store and used as a fresh dough would be.

Newbie Topics / Re: Donato's

Benji:

Those pizzas look GREAT! Especially the last one.

General Pizza Making / Re: What type of cheese(s)? And how do my pies look?

Seasoned pans are nothing more than pans coated with oil and baked multiple

times until the oil polymerizes, turning into a type of "varnish" and then turning dark/black with continued use. The thing to remember about seasoned pans is that they need to be washed in a special manner. Here's how we recommend washing a seasoned pan: Hold pan in one hand and soft plastic bristly scrub brush in the other hand, dip pan in soapy water and scrub gently, immediately followed by a rinse dip, immediately followed by a sanitizing dip, set the scrubbing brush aside and pick up a clean towel and thoroughly dry the pan (NOTE: The pan has NEVER left your hand up to this point) Now place the pan in an oven to force dry for a couple minutes. Failure to follow this procedure may result in the seasoning peeling off of the pan like a bad sunburn, allowing you the honor of stripping all the remaining finish from the pan and starting all over again...Ugh!

The dark colored anodized finish pans, on the other hand can be soaked in hot soapy water for a few minutes to help soften any debris adhering on the pan, but the truth id the matter is that this is seldom an issue as in most cases you can just wipe off and adhering matter. Why wash in the first place? 1) All pans should be washed to remove any residual oil before being put into extended storage. This is for sanitation purposes, and it will also prevent the pans from going rancid due to the residual oil in the pan. 2) Some place require that all pans used in a commercial food establishment be washed daily, in this case the non-stick, pre-seasoned pans are a no-brainer. 3) If you serve a pizza while in the pan, the pan MUST be washed and sanitized before it can be reused (restaurant application). Lastly, have you seen those commercials for non-stick cookware where the guy fries cheese in a frying pan, then just lifts it out? The commercial non-stick finish on some of the pizza pans is just that good.

Chicago Style / Re: Blackened DD pans

P.A.

I have a Dough Management Procedure that I can send to you. This is a management procedure that is common to a good many pizzerias. You might be able to take a look at it and possibly modify it to meet your specific needs. To get a copy of it just send me a private message I'll be glad to send it to you.

Shop Talk / Re: Chilled dough balls

Hi Mark;

Remember, we're all just rendering our opinions. In many cases my opinions are based on over 47-years of experience in pizza, bread, and fermentation research, but in the end, it's still just an opinion just like everyone else's, and that is what makes these web sites so informative, you can get opinions, and guidance based on collectively over 100-combined years of experience on some postings. While it has taken some of us (speaking for myself) over 45-years to learn what I know, a simple question can get you diverse answers from many knowledgeable individuals with highly diverse backgrounds, to just about any question on pizza making you might have, allowing you to educate yourself while getting direction or an answers to your questions, and it's my opinion that everyone has something to add and something to learn here. When I stop learning is when my pulse drops to zero, and being able to contribute is the carrot in front of me to keep me learning, as it should be with everyone here. Knowledge is a terrible thing to waste, so jump right on in any time you are so inclined.

Forum Info / Re: Protocol in replying to the Dough Doctor Forum?

With the fermentation that you are giving the dough I don't believe your kneading is at fault. We have just barely incorporated ingredients into something that more closely resembled oatmeal that a pizza dough, but after 24-hours in the cooler it

exhibited very good gluten development due to biochemical gluten development.

Dough Clinic / Re: Springless Dough

Tyler;

Tow things come to mind. 1) The Durham flour might be slow to hydrate, as such the dough will feel just fine, but then with time it will begin to hydrate and the dough will stiffen up, but since you didn't mention anything about that I'll assume that's not the problem here. 2) You did mention rolling the dough out. Is there a possibility that you are rolling/sheeting the dough too thin? How thin is too thin? 1/8-inch or less might be too thin for a rolled dough. To test this, try hand forming the dough ball into a pizza skin and let's see if the resulting crust looks better. A dough that is rolled too thin will readily allow heat to pass through it where the heat is dissipated as steam from the moisture in the sauce and vegetables (all of which are about 90% water). Sorta like trying to solder a water pipe which still has water in it. One other thing comes to mind too, 450F seems a might cool unless you're baking for an extended time. Can you bake at a higher temperature?

Dough Clinic / Re: Springless Dough

LM;

No difference in flavor is attributed to the brand of yeast. This is by design of the yeast manufacturers allowing bakeries to have multiple suppliers.

Dough Clinic / Re: Pizza Dough Recipe

La Sera;

All purpose flour can run from a low of 9% protein to a high of about 10.5/11.0% protein content. While all purpose flour works well, research that we have done here at AIB International has shown that the higher the protein content, the crispier the fried coating becomes. Without knowing what your customers are looking for in regard to crispiness of the fried coating, I would suggest that you fry up several chicken pieces coated with each of your different flours and choose the one that you like most. Do keep in mind though that there is a limit to the crispiness that can be imparted by the flour. If you go too much above 12.5% protein content in the flour you might run into what we refer to as a "flinty" fried coating. This is where the fried coating becomes so hard that it must be chewed/ground on ones molars, akin to trying to eat a china plate.

Dough Clinic / Re: Flour question for The Dough Doctor...

Not so long as there is dough in it.

Most pizzas baked in a pan will be best baked at temperatures of 400 to 475F for the most part. Sure, you can put them into a 1000F oven but all you will get is a pizza that is possibly done on the top and raw on the bottom. Since the pan is a heat sink you must be able to heat the pan first, then the dough inside the pan all the while the top of the pizza is baking, hence the typically lower baking temperatures employed when pans are used.

Stones/tiles/steel, Pans & Accessories / Re: What depth pans do I need?

LM;

Snap-back, or excessive dough memory is what you are experiencing. It can result from insufficient water, yeast, or dough temperature, just to name a few things. Your yeast level looks good, but ADY must be hydrated in warm (100 to 105F) water (just a small portion of the total water is all that's needed to do this), then add the yeast to the cold water in the mixing bowl, no need to stir. Add the flour, salt and sugar to the flour, and begin mixing just until the flour is hydrated (wet),

then add the oil. This will provide optimum yeast performance. Check your finished dough temperature, it should be in the 85 to 90F range for most home made pizzas, unless you plan to hold the dough more than 2-days in the fridge, in that case go for a finished dough temperature closer to 80F. After at least 24-hours in the fridge, bring the dough out, keeping it covered, and allow it to temper AT room temperature for about 3-hours, then turn the dough out of its container into a bowl of dusting flour and you're ready to begin opening the dough up into a pizza skin.

Dough Clinic / Re: Pizza Dough Recipe

Also, you won't know what kind of flavor the starter will impart until you actually bake something with it. This is because it is anybody's guess what kind of microflora is being cultured. If you like the flavor imparted by the SD be sure to split it up into multiple containers in DIFFERENT locations and regularly feed each one on the same schedule. This way if you loose one batch of starter you can always use another as an inoculate to start another SD with the same microflora.

Starters/Sponges / Re: help with a grape starter

GC;

Your total dough absorption figures out something close to 66%, as you are trying to duplicate a commercial (pizzeria) type of pizza, I would add that very few pizzerias use an absorption much above 58 to 60%. They do this for ease of handling. Based on this, you might begin by reducing the amount of water you use to about 60%, or 10.5 to 11-ounces. This will give a less wet and sticky dough which should handle better and possibly come closer to giving the product you are looking for. Also look at your baking time and temperature as a longer bake at a lower temperature typically results in a crust that is both crispier and one that holds its crisp for a longer time after baking.

Keep us posted on your progress.

Dough Clinic / Re: help me dough dr!!!

Huuuuuh??

Somebody please tell me this is just a spoof!

In Chicago a party slice (squares) is the norm for thin crust pizza from the indies and regional chains. If he wants a wedge (pie) cut all he needs to do is to go to one of the box chains. There is a reason why they use the party cut in Chicago for the Chicago thin crust pizza, it is so soft that it would be almost impossible to pick up and eat in any other shape. Fact is, when eating a Chicago thin crust it is perfectly acceptable, and in good manners, to fold the square in half, kinda New York style as this allows one to pick up the pizza slice (square) without dumping the toppings.

Pizza News / Re: Retired engineer-- perfect way to slice a pizza

Cool!

Waaaaay Cool!!!

Neapolitan Style / Re: Ev's Neapolitan Camper

Woody;

Which burb?

I'm a "South Sider" from Tinley Park.

New Forum Members / Re: New member in the Chicago burbs

Letterpress Man;

Keep in mind that there is no standard for "Hi-Gluten" when it comes to flour. We have tested some HG flours and found them at between 10 and 11% protein

content, while others are at 12 to as high as 14%, especially for the commercial flours such as All Trumps, Remarkable, Big Spring, Power, Regal, Gigantic, Hi-Rise, and Dominator, to name just a few. I agree with Norma, and I'll go so far as to say that regardless of what it says on the bag, if the flour works for you, it's the right flour for you. By all means shop around and evaluate different flours, experimenting is half of the fun of making pizza, the other half is eating your creations, and as I've been known to say, "don't worry about making mistakes, they'll taste good too".

Dough Clinic / Re: Pizza Dough Recipe

Jim;

I think what you are looking for is Stanislaus Full-Red Extra Heavy Tomato Puree.

Resources / Re: Looking for a place to order Full Red pizza sauce

Why Norma, you're just a youngster!

I've got ya beat by 3-years.

That don't make us "old" by any stretch of the imagination though, it just, on our resumes we can put "has vast experience".

It must be something about pizza that keeps us so young!

Chicago Style / Re: dough

Mark;

Hydration percent should always be based on the actual weight measures.

Dough Clinic / Re: volume vs weight %

That big wood mixing bowl looks a whole lot like one we have in our baking museum, the only difference is that ours is a lot older. It served the same function though. The neat thing about wood mixing bowls and wood dough troughs (commonly used here in the U.S. until the 50's especially in cracker production) was that they would hold bacteria (lactic acid forming bacteria/lactobacillus) and inoculate the dough that was placed into them much like we would use a sourdough starter today. When the cracker industry moved away from the wood troughs they had to identify the specific bacteria, culture it, and add it to the dough to get the same finished flavor profile that they had with the wood troughs.

As for mixing the dough without power, there is a pizzeria in the Pittsburgh area where the owner has a long stainless steel trough, he measures out his water in a pail, adds it to the trough, adds flour, salt and sugar, then wets his hands and arms and spreads cake yeast over them as one might use soap, he then proceeds to hand mix the dough just until it comes together, after that he allows biochemical fermentation to do the rest of the work for him. It is quite a store, people come in just to watch him make his dough.

Prep Equipment / Re: Dough Trough size?

I agree with Tom N. that lack of sufficient fermentation is probably responsible for the finished crust tasting too much like bread.

Also, look at the amount of fat and sugar used in the dough formula/recipe. If the fat level is too high, (above 2%) the finished crust flavor can be compared to that of bread, be sure the fat you're using is olive oil to give the crust a different flavor, too much sugar can also be a cause. Try making the dough without any added sugar and cold ferment for 24 to 48-hours to see if that addresses the problem. Lastly, insufficient salt in the dough can have an impact upon flavor of the crust. We typically look for salt levels of around 1.75 to 2% of the total flour weight.

Dough Clinic / Re: dough tastes like bread

My own personal comments:

From the look of the picture (white colored crust with highly contrasting char, actually beyond char. My gut feel is that the dough may well have been over fermented to the point where the acidity formed as a result of fermentation is inhibiting the browning reaction, hence the only place where the crust can actually develop any color is at the site of the bubbles/blisters, where the surface of the crust gets exceptionally hot, while the remainder of the crust doesn't actually get hot enough within the allowed bake time to develop color (remember the acidity), hence the strong contrasting of colors. As for the bottom bake, I would guess that it might have been rather spotty and inconsistent.

Neapolitan Style / Re: Super long fermentation

Dr. Pepper, interesting....since it is based on plum juice it might add a pleasant fruity flavor note to the dough.

General Pizza Making / Re: New Dough-Barqs Rootbeer

While on the topic of woods, check around for neighbors with apple, cherry or pear trees, they need to trimmed periodically resulting in a lot of useful smoker wood. Also, after a storm, such as a wind storm or especially an ice storm (fruit trees are typically the most commonly damaged trees) look for damaged trees or tree limbs. As a result of an ice storm here in Kansas a few years ago we had two large pear trees, a cherry tree, a peach tree, and several large limbs from an apple tree available to anyone who wanted them. What was left ended up as firewood in our furnace. It really gave a great aroma in the house!

BTW: Check out the local dumping ground for tree limbs. At ours the city encourages us to help ourselves to all the free wood we want. We can easily get an abundant supply of oak, ash, and fruit tree woods from there too, and if you're into cottonwood, elm and cedar there is a lot of that too, but it's best reserved for the chipper unless you're completely out of firewood.

Hearth Ovens / Re: Wrong place to ask about tropical woods

I'll do some experimenting along these lines on my next foray out into the pizza lab. I'm also wanting to look into using unflavored Greek yogurt as a possible sauce replacement for a white pizza. When I get some news I'll report back on our findings.

In the mean time, if anyone else has done any of this, or wants to do their own research, please feel free to post your findings/results.

General Pizza Making / Re: New Dough-Barqs Rootbeer

I have heard a lot about using soda (root beer, 7-Up, and gingerale) are mentioned quite frequently, but I have not done a lot of work along those lines. It would be interesting to see the differences between regular (sweetened with real sugar) and diet versions of the same sodas. Sweetness might change as the artificial sweeteners used in the diet versions are typically not heat stable, but the flavor should remain. Hummm, an interesting project.

General Pizza Making / Re: New Dough-Barqs Rootbeer

Beck;

Yes you can do as you propose.

Increase the temperature of the finished dough to around 90F by using warm water to make the dough with. All other ingredients should remain as they presently are for right now. Immediately after mixing, form the dough into dough balls of desired

weight, lightly oil and set aside (covered with a piece of plastic) to rise for at least 30-minutes (45 to 60 is better). Prepare the pan by greasing with shortening (Crisco) or margarine, place the dough ball into the pan and using your fingers, press the dough out to fit the pan. If you have difficulty, cover the pan and set it aside to rest for about 20-minutes, then finish pressing the dough into the pan. Once the dough is pressed into the pan, cover it and allow the panned dough to rise for 20 to 30-minutes, uncover the pan and place it into the fridge. After about 90-minutes in the fridge, cover the pan with a piece of foil crimped over the top rim of the pan. Allow the dough to remain in the fridge until the following day, then remove from the fridge about 60-minutes before you plan to dress it. From that point on dress and bake the dough as you would any other deep-dish pizza. Be aware though that you won't get the same flavor profile as you would from a dough that was given 24 to 48-hours of cold fermentation prior to panning the dough.

Dough Clinic / Re: Batches of dough, sized and rolled straight onto pan?

John;

Pretty soon those friends will be dragging in friends of theirs and you might find yourself working in front of an oven in your pizzeria! More than one pizzeria got started that very way.

Welcome!

New Forum Members / Re: Newbie - Imabadman

Hi Norma;

There aren't many of us that either go back that far, or can remember back that far, much less partook in such a gourmet delight!

You probably remember TV Time Popcorn too.

Tom Lehmann/TDD

Chicago Style / Re: dough

Wow!

I'm honored!

Here at the American Institute of Baking/AIB International we are very research oriented, but even more importantly we are educators in that we disseminate the findings of our research to the general public (unless it's gained through private contracted research) through publications, our seminars/classes, and participation in other programs such as the NAPICS Show, PMQ Pizza Show, and Pizza Expo. I have also traveled quite extensively on the International circuit teaching and demonstrating all aspects of making pizza (science, technology, function and interaction of ingredients, processes, etc.) all to spread the good word. The things that I cannot do as you have correctly stated is make people listen, follow known successful practices, and to take our advice. This is even in light of the fact that there are some amazingly large companies out there making and selling pizza on a scale that most of us can only dream of, that don't have a technical staff knowledgeable in the science and technologies of pizza formulation or processing. It is a lot like complimenting the pilot of a Boeing 747 on a great, smooth landing under adverse conditions, and having the pilot respond back to you "thank you, after I get my pilot's license I should be able to do even better".

As for the quality of commercial pizzas, well, lets just chalk it up to pride (we have made and sold the same pizza for X-years), fear of rocking the boat (it took us 20-years to get to where we're at and we ain't going to change anything), and economics (we provide a product that a certain segment of the population finds to be acceptable (mind you I said acceptable, not great) at a price point that they are willing to, or can afford to buy it at). There are a bunch of other reasons, but I see

these as the major ones, with my job being to help them achieve their goals, whatever they might be.

General Pizza Making / Re: Gotta give it up to Mr. Lehmann

Flour millers typically offer their stronger flours as bromated or non-bromated, such as General Mills Full Strength (12.6% protein) and Remarkable (13.6% protein) as I am sure other flour millers do. If you live in California, it may be difficult to find a bromated flour because, as a potential carcinogen, all products containing KBRO3 and sold in California must have a warning label similar to that which is found on a pack of cigarettes or a bottle of wine. In Canada it is not approved for use in food, but anywhere else you should be able to find it. If you can't locate it at a local store, or buy it directly from a distributor, you might be able to talk to a local retail baker to see if he will sell you a partial or full bag, or maybe you can place an order for a 50# bag of bromated flour with his next flour order. FYI: Full Strength W/bromate (#53391 or #53381); Remarkable W/bromate (#57140 or #57122).

Dough Ingredients / Re: Retail Bromated Flour

Norma;

Pizza on a biscuit dough.....this reminds me of the old (dating myself here) Chef Boyardee (SP) pizza mix. As a kid I thought it was great, just add water to the dough portion of the mix and stir, then turn out onto a floured surface and form to about the size of your pan, place the dough into your greased pan and finish by pushing the dough into the corners and sides of the pan, then pull the dough slightly up the sides of the pan. Open the sauce pouch and apply to the dough surface, then apply the supplied cheese. Anybody else remember those days? Probably not the best pizza in town, but it worked in the moment at the time.

Chicago Style / Re: dough

Weemis;

When mixing dough by hand, some of the things which we have found to be beneficial are as follows:

Always suspend compressed yeast in the dough water. If using either ADY or IDY pre-hydrate it in a small portion of the water warmed to between 95 and 100F, then add it to the dough water.

Put all or the greatest portion of the dough water in the mixing bowl first

Add the suspended/hydrated yeast to the water in the mixing bowl

Add salt, and/or sugar to the yeast water in the mixing bowl, then give it a quick stir and add the flour.

As you mix the dough during the first couple minutes, add the oil or shortening. If shortening is used (Crisco, margarine, butter, etc.) heat it to just melting temperature before adding it to the dough. This will help to disperse the fat throughout the dough mass.

Dough Clinic / Re: Order of ingredients in Dough?

Stud;

What was the color of the pan? Bright silver inside and out? Bright silver outside and dark on the inside, or dark both inside and out?

Also, can you share how the pizza was baked? This additional information will be helpful in determining why your pizza wasn't properly baked.

Newbie Topics / Re: aluminum pie pan for pizza making?

Chicago Bob;

PJ's uses air impingement ovens to bake their pizzas. I agree, I think their pizzas are underbaked too, but that is not my call. Would their pizza quality be improved with a longer bake time? For my tastes I would have to say yes, but they are in the delivery business and evidently they are making money at what they are doing so who am I to criticize them, except to say "it ain't my piece of pie", and to each his/her own.

American Style / Re: My PJ clone...

I agree totally with Don, what you are using is not designed, or intended to bake anything close to pizza. They do a good job of baking cakes, but that's about as close as it gets. If you want to do square deep-dish pizzas on the cheap, look for some used square cake pans (normally in 7-inch format). The best ones are made of steel and have a dark green coloring to them. You can also buy square pizza pans from American Metalcraft <www.amnow.com>. These will be made of aluminum, and can be had in a dark anodized finish.

If you get a pan(s) with a bright finish, they should be well seasoned for best baking properties.

Newbie Topics / Re: silicone square cake pan cooked pizza is wet in the middle section?

You say you're using a square silicone cake pan, is this one of the newer flexible ones, or are you referring to a square cake pan that has been silicone coated aka glazed? What is the color of the pan? What is your baking temperature?

Newbie Topics / Re: silicone square cake pan cooked pizza is wet in the middle section?

What is your business concept?

Shop Talk / Re: How important is an open kitchen.

If you can get it, General Mills All Trumps flour at 14+% protein content is the pack leader, but the Pillsbury Bread Flour available at many supermarkets comes in at about 12.2% protein content, plenty strong to hand toss. Check the bag labels for different flours at the supermarket, you want to look for a label indicating 12 to 13, or more grams of protein for 100-grams of flour weight.

Dough Clinic / Re: Frustration with Dough Tearing

BD;

Your problem is not unique, infact it is really quite common. A good method to use in opening the dough, so it opens without the excessively thick and thin areas across the center is to first pre-flatten the dough ball, in your case using a rolling pin. Open the dough ball to about 2/3 of the desired finished diameter using only just a couple passes with the rolling pin as too many passes will only serve to tighten the dough making further opening more difficult. Once you have the dough pre-flattened, set the dough piece aside to rest for a couple minutes, then begin opening the dough by hand in your normal manner. We just finished with our annual pizza seminar last week and I showed this procedure to a good number of our first time students, without exception, all were opening the dough really well within just a few minutes. This is also the way I open my dough when I make pizza at home.

Dough Clinic / Re: Frustration with Dough Tearing

Bisquick is a chemically leavened mix for making biscuits. The leavening system typically used is made from a blend of sodium aluminum phosphate and baking

soda, and this is where that flavor you mention comes from. If you want to replicate this flavor try adding a baking powder based on these two ingredients. I stand to be corrected, but if I remember correctly, Calumet brand baking powder is based on SALP and soda, check the labels when you're at the supermarket and you should find it. The amount to use will be about 3% of the total flour weight, and be sure to thoroughly blend it into a little Crisco to encapsulate it before adding it to the dough. Remember, biscuit doughs are just barely stirred together, they are not mixed like a typical pizza dough, and for making pizza, they are best portioned, placed into a plastic bag and refrigerated overnight, then allowed to temper AT room temperature for a couple hours before rolling/sheeting into a pizza skin.

Chicago Style / Re: dough

Roberto;

What we do is to get an exact weight for each of the ingredients used, then divide the weight of each ingredient by the weight of the flour and multiply by 100. This will give the bakers percent for each ingredient (flour is always 100%). Once you have your dough recipe in bakers percent you can now manipulate the formula into any size you wish and it will always be in balance. To do this, first decide how much flour you wish to use. Enter this weight into your calculator then enter the ingredient percent you want the weight for, now press the "%" key and read the ingredient weight in the display window. When you have done this with each ingredient you will have your new batch sized and ready to go.

Dough Clinic / Re: You've probably had this question before about hydration

Roberto;

You can't do bakers percent using a mix of weight and volumetric measures. Everything must be in the same weight units such as grams, kilograms, pounds or ounces. While we could use approximate weights for the volumetric portions (bread flour: unsifted 4.75-ounces or 4.25-ounces sifted once) it is always best to portion it and then weigh the portion to get an accurate weight of the portion since there can be differences depending upon the technique of the person doing the portioning. Once you have the weight of the flour you can then divide the weight of the water by the weight of the flour and multiply by 100 to get the percent flour absorption used.

Dough Clinic / Re: You've probably had this question before about hydration

Ryan;

My favorite N.Y. Pizzeria is Patsy's (Brooklyn) or is it now Grimaldi's? Whatever, if it was good enough for Frank Sinatra it is plenty good for me. Truthfully, it's my favorite pizza place in New York.

Tom Lehmann

Dough Clinic / Re: Pizza Dough Recipe

Norma;

It was off of my radar.

Tom Lehmann/TDD

Dough Ingredients / Re: freekehlicious flour for testing

Norma;

Being "roasted", my concerns would be with gluten quality. Wheat flour/protein is easily denatured with heat, hence my concern about the gluten quality.

Dough Ingredients / Re: freekehlicious flour for testing

Cindy;

For overall dough consistency, we don't recommend allowing the dough to ferment at room temperature before putting it into the fridge. The change in dough density makes the dough too difficult to cool uniformly. Instead, immediately after mixing, take the dough to the bench (counter top) cut and form the dough into balls, wipe them lightly with oil and place into individual plastic bags (bread bags work well), DO SEAL, but instead, twist the open end into a pony tail, and tuck the pony tail under the dough ball as you place it into the fridge. By doing this you don't need to use a dough box, and there is no fear of the dough balls drying out. To use the dough, remove from the fridge and allow to temper AT room temperature for 1.5 to 2-hours, then turn the dough out of the bag into a bowl of dusting flour, then open into pizza skins using your preferred method. The purpose of cross stacking the dough boxes (applicable to pizzerias) is to allow for uniform cooling of the dough without the development of unwanted sweating due to condensation forming on the dough during the cooling process. The use of the plastic bags makes the need for dough boxes unnecessary, and it is more compatible with a home refrigerator with its space limitations.

Dough Clinic / Re: Cross Stacking

Ryan;

Your observations are the same as ours here at AIB. When it comes to making pizza, less mixing is almost always better than more mixing. Actually, if you open the dough up and "window pane" it after two days in the cooler you will be able to see first hand what biochemical gluten development is all about. Our annual pizza seminar begins today and that is one of the things that we show our students. Under mixing the dough promotes a more open crumb structure, less snap back, and is a lot easier on your mixer, or arms to boot.

Dough Clinic / Re: Looking for Guidance - NY Style

I frequently get asked where and when I've had my best pizza. To answer this question honestly, I have to reply that it was the last time I made it at home. The reason being not that the pizza was by far the crispiest or most flavorful pizza ever created, but it met all of MY expectations for a truly great pizza, and if it didn't I knew who to blame. This came after more than 40-years of practice making pizza at every scale imaginable, and teaching it to literally hundreds of students, if not more. Like everyone else, I had my successes as well as my failures, and for the most part the failures tasted almost as good as the successes, but once I got the pizza that I liked nailed, I make it a habit of preparing it for family get togethers every opportunity I get, or put another way, the family has come to expect it from me. Is it their most favorite pizza? Probably not, but they eat it like a hungry wolf anyways. The up side is being able to enjoy eating MY very best pizza.

Newbie Topics / Re: Walmarts Dough ball \$1.19 each!!!!

L.M.;

You struck a note when you said "flavorless". Salt has a significant role in the flavor of the finished pizza crust, and many other foods for that matter. Maybe your dough formula is lacking in salt as compared to your target dough/crust. Maybe as a first step I would suggest that you make a couple doughs with increasing salt levels from where you're presently at. While we normally recommend salt levels in the neighborhood of 1.75% of the total flour weight, I've seen it as high as 3% too. If you go much beyond 3% the finished crust will begin to take on a bit of a salty

taste.

[**Dough Clinic / Re: Pizza Dough Recipe**](#)

Also, keep in mind that all deck ovens are not the same. Some have substantially thicker decks and a different burner configuration below the deck, typically deck ovens with these attributes are not as prone to having hot spots (pies don't need to be rotated or moved during the baking process) while others have a thinner deck, or a deck made from a different material, and usually have a different burner configuration beneath the deck all of which can result in the need to turn and move pizzas during the baking process to achieve a uniform bake to each pizza in the oven. Have you baked any of your pizzas using a screen under the pan for a portion of the baking process?

Tom Lehman/The Dough Doctor

[**Dough Clinic / Re: New Pizza Shop**](#)

Scott 123;

You have not been to any of the PMQ Pizza Shows. A few years back Dave Smith took first place with a pizza baked in an air impingement oven. I'm not going to get into any type of contest here but I will add that "world class pizza", whatever that might mean, may not be the pizza that everyone wants or needs. I personally like a pizza baked in a wood fired oven at high temperatures, but then again, that is not everyones cup of tea. So, once again, the oven that works best for YOU is YOUR best oven. We should remember that quality, like beauty is really nothing more than a perception.

[**Newbie Topics / Re: "Good pizzas are 90% oven" "conveyor ovens are not great" Oven primer for newb**](#)

Nick;

You have to define what constitutes a great pizza oven first. For some it is an oven that operates at a very high temperature, and gives up a pizza every 2 to 3-minutes, but it requires a lot of valuable floor space, needs to be manually operated (in/out/rotating), requires free space in front of the oven for the oven operator to work (again a valuable commodity), is relatively expensive when sized for the volume needed, will not be allowed in some locations, may be expensive to operate, lacks portability, gee... the list just goes on and on. Now, lets look at an air impingement oven (conveyor oven). It has a relatively low purchase cost, economical to operate, has high volume capacity, requires a minimum of floor space, minimum to no operator expertise needed, can bake just about any type of pizza along with a plethora of side dishes, can bake both thin and thick crust pizzas side by side, the airflow helps to provide a consistently dry pizza, again the list goes on and on. It just so happens that from a commercial point of view there are a lot of advantages to the air impingement ovens that other oven types just don't have. Deck ovens as well as wood fired ovens are great for small stores (independents) and even small chains, but when you start looking at 25 or more stores, not to even mention thousands of stores for some of the larger chains, you want things to be as simple as possible and as economical as possible from both a purchase price v/s pizzas per hour, as well as space allocation in the store (space is a very costly commodity). So, what is a great pizza oven? It's the one that works best in your specific application. Air impingement ovens can also be set up to replicate most types of pizzas too. The word versatile comes to mind.

[**Newbie Topics / Re: "Good pizzas are 90% oven" "conveyor ovens are not great" Oven primer for newb**](#)

Are you talking home or pizzeria? Unmodded gas oven would suggest home use, but just checking.

Dough Clinic / Re: Dough type for NY style in gas oven

Please note that all of that work was done on bread doughs, using pan bread, not pizza dough using pizzas as the end product. There is a huge difference in how a dough responds when being pushed to a height of 4 to 5-inches as opposed to a maximum height of maybe 1.5 or 2-inches as is the case with a pizza crust. When making pan pizzas we have seen a slight improvement in proofing time when a solid fat is used over oil, but I sure wouldn't think that in a home setting 5-minutes in proof time would make a big difference, especially when we typically see greater differences than that due to differences in finished dough temperature, gluten development, and scaling accuracy of the ingredients. What I'm saying is I wouldn't sweat it. If you want to add a solid fat/plastic fat, just heat it slightly to soften it, then work it in right behind the water. I make dough by hand all the time at home and I find it pretty easy to work it in as I stir and knead the dough.

General Pizza Making / Re: Solid Fat

Brendan;

No changes to the yeast level are needed when adjusting the dough absorption up or down within reason. Even though the total dough weight will change, the amount of water present, or the change in water content will have minimal impact upon the yeast fermentation properties. This does not mean that you will not see a difference between doughs with differing absorption, it just means that the difference you see will be the result of a softer, more hydrated dough, which will probably expand more easily, or exhibit more/different flow than a lower absorption dough, rather than the effects of fermentation. Keeping this in mind, when we make a very soft dough with a high absorption, it is common to reduce the yeast level to some extent, not because of the difference in fermentation rate, but because the softer dough ball as well as shaped dough may exhibit excessive flow properties and flatten out too much with a higher yeast level.

Dough Ingredients / Re: Question about adjusting yeast % to compensate for hydration.

Nick;

I'm thinking that your fermentation is too long for your conditions and flour at hand. You might try this:

Begin with less water, say 65% and make further adjustments as necessary. Suspend the yeast in the water, are you using Engadura yeast or a locally produced fresh yeast? In either case, do suspend it in the water. Then add the flour, salt and sugar if used. Stir the ingredients together until thoroughly whetted, add the oil of shortening and continue stirring for a few more minutes. Cover and set aside to rise for 2-hours, then punch the dough down in the bowl and turn it over. Allow to rise for 30-minutes more, then turn the dough out onto a bench for cutting/scaling and forming into dough balls. Set the dough balls aside, sprinkle with flour and cover with a sheet of plastic to prevent drying. Allow the dough balls to rest/ferment for 30 to 60-minutes, or until they can be easily opened into pizza skins, then dress the skins and bake in your normal manner. I've used this procedure in a number of developing countries and remote areas with very good success.

Dough Clinic / Re: Need a variation on a 24hr room temp no knead fermentation with more strength

You're on the right track.

The old bakers used the word Arkady in reference to the mineral yeast food that they commonly added to their doughs. Mineral yeast food (MYF) is a mixture of calcium salts, ammonium salts, and back then potassium bromate. It was typically added at a level of 0.25 to 0.5% of the total flour weight. Today, most bakers don't use MYF, instead, they use calcium sulfate instead.

Chitchat / Re: Arkady. trying to figure out what this is.

We make seafood pizzas all the time, every chance we get. In fact, I just got back from working with a pizzeria in Detroit where I demonstrated the making of seafood pizzas....they were great!!

Use your regular pizza dough and open into a dough skin for a thin crust. Lightly brush with olive oil and add just a hint of garlic (I like to use diced garlic), then spread on just enough Alfredo sauce to cover the surface of the dough, leaving a slight exposed rim. Give this a good sprinkling of dried dill weed, then add pieces of shrimp (baby shrimp works well), cod cut into 1/4 to 1/2-inch cubes, and pieces of crab meat, squid, clams, etc., finish by adding some sliced red onion and fresh tomato pieces, for cheese, add only 3 to 4-ounces of Mozzarella cheese for a 12-inch pizza, and about an ounce of shredded Parmesan cheese. Please don't go heavy on the cheese as it will detract from both the appearance and flavor of the pizza. Bake the pizza as you would any regular thin crust pizza.

Enjoy!

Pizza Toppings / Re: pizza with sea food?

A couple of things to keep in mind;

When hand kneading the IDY should always be prehydrated in a small amount of 95F water for about 10-minutes, then add it to the dough water, and follow by then adding the remainder of the dough ingredients.

Also, the dough will not rise as much in the fridge as it will at room temperature, and this is just what we are looking for as it allows the yeast to do its job and develop a wonderful flavor in the dough while also contributing to further gluten development. Personally, I like to lightly oil the dough ball, place it into a bread bag, twist the open end into a pony tail and tuck it under the dough ball as I place it in the fridge. For best performance I like to hold the dough in the fridge for at least 2-days. As for the size of the dough balls, I normally look for about 25% expansion after 24-hours and something closer to 50% after 48-hours in the fridge, assuming a finished/mixed dough temperature in the 75 to 80F range and normal yeast levels (IDY: 0.375%) your IDY level is higher so you might experience a bit more expansion in the size of the dough balls. To use the dough after refrigeration, remove it from the fridge, keeping it in the bag, and allow it to temper AT room temperature for 60 to 90-minutes, then turn the dough ball out of the bag into a bowl of dusting flour and proceed to open the dough ball up into a pizza skin. I like to LIGHTLY brush the opened pizza skin with olive oil prior to dressing as this both improves flavor and helps to prevent migration of moisture from the sauce and toppings into the dough where it can end up creating an undesirable gum line under the sauce.

Newbie Topics / Re: Cold Ferment / Overnight Fridge Rise HELP !!!

Chicago is home to great tasting pizza that is unique in its own special limp crust. When I was a kid, growing up on the south side we used to get pizza from Ed and Joe's (yes, they are still there) and when we went to the store to pick it up it had some attribute that might be construed as crispy, but by the time it got to our home (3-blocks away) with exception to the four edges/corners of the party cut

pizza crispiness was just a memory, but it still tasted Ooooooh soooo gooood!

Tom Lehmann

The Dough Doctor

[Stones/tiles/steel, Pans & Accessories / Re: quarry tile versus cordierite versus Fibrament...](#)

P.N.

Great idea! I'm going to have to try that the next time I have to freeze my Mozzarella cheese.

Thanks for the tip!

[Pizza Cheese / Re: How will a grande mozzarella loaf last me in the fridge?](#)

PY;

If the loaf is unopened, DO NOT FREEZE it as the quality will be decreased.

Instead, store it at refrigerated temperature (38 to 45F). The cheese should last for about 40-days. Once opened, it is suggested that you use it within a week. OK, if you freeze it the cheese won't melt down into a toxic puddle, but it will be impacted in terms of flavor, texture, and melt when you use it on a pizza, thus negating the fine quality characteristics of Grande Mozzarella cheese. I've frozen it, and if you're not overly fussy, it will work OK for you, it won't win you any competitions, but it will satisfy your taste for a pizza now and then over the next 3-months.

[Pizza Cheese / Re: How will a grande mozzarella loaf last me in the fridge?](#)

Cosgro:

Your approach to pizza reminds me of what we always tell our students...."Don't be afraid to experiment and try different things, your failures will taste almost as good as your successes".

Tom Lehmann/TDD

[General Pizza Making / Re: Using beer in your pizza dough](#)

F.C.

Let me say that again...Wow! That is quite an oven! Have you fired it up yet? How much stone is in the hearth? How long does it take to heat before you can bake in it?

Tom Lehmann/TDD

[New Forum Members / Re: new member](#)

The significance of the total percentage comes in with more advanced use of bakers percent/bakers math. For example, lets say your formula has a total percentage of 171%, if you have calculated that you need 10-pounds of dough to make something all you need to do is to divide the dough weight by the total percent. Move the decimal point two places to the left and divide: 10-pounds divided by 1.72 = 5.84-pounds of flour will be needed to make 10-pounds of dough by your dough formula. Another way to use it is to calculate how much dough you can make from a known quantity of flour. Again, our total formula percent is 171%. We have 6-pounds of flour, how much dough can I make? $1.71 \times 6\text{-pounds} = 10.26$ -pounds of dough can be made from my 6-pounds of flour by my formula.

Here is another one, if I know your formula in bakers percent, and I add the percentages and get 162%, and I know that you made 7-pounds of dough, I can calculate how much flour you used, then I can make the very same size dough. 7-pounds divided by 1.62 = 4.32-pounds of flour were used in making the dough. Now I can calculate the amounts of each of the other ingredients to make the dough (this is just like the first example above).

[**Dough Clinic / Re: Bakers Percentage**](#)

F.C.

Welcome to the forum. Built your own wood fired oven...Wow!

We'd be disappointed if you didn't share with us. I know that a lot of other people here have an interest in building their own wood fired ovens. Please tell us something about your wood fired oven project. Do you have any pictures to share?

[**New Forum Members / Re: new member**](#)

Anthony;

Welcome to the forum. New perspectives are always a welcome addition here. This is definitely the place to learn and share.

[**New Forum Members / Re: Introducing....the New Guy!**](#)

Just a word of caution here. If you make your own garlic infused olive oil (I'm sure most of us do), remember that it is not a good idea to save it from one day to the next due to the possibility of growing clostridium in the anaerobic environment created by the oil. Clostridium is soil borne, so the garlic can be potentially contaminated with it. Clostridium can result in botulism poisoning. Botulism is too deadly, and olive oil is too cheap to take any chances. Our advice is to play it safe and dispose of any unused home made garlic infused oil at the end of each day. Commercially produced garlic infused oil is perfectly safe to hold from one day to the next.

[**General Pizza Making / Re: Brush Oil on the Crust?**](#)

Some very good points have been brought up about dried tomatoes and apples. Allow me to share a short story about how good tasting those dried apples are (with the skin).

Several years ago I brought several large zip-lok plastic bags of dried apples with me on a deer hunt. I gave each of the other hunters a quart size bag of them to snack on. At the end of the day, when we were all back in camp, "Camp Momma", that's me, asked the guys what sounded good for dinner that night. Amongst the moans and groans I heard that not much sounded good to them. Why? I asked. Well, it seems that they had all consumed their entire bag of dried apples during the afternoon hunt. Did I mention that there were nearly a dozen apples in each of those bags? Well....the apples were now expanding, but the best part of the story came later that night (try eating a dozen large apples and you will see what I mean). End of story.

But they are oooohhh soooo gooood! Almost addictive.

[**Pizza Toppings / Re: Partially-dried tomatoes**](#)

That's only on my likeness on the back of my business card, thanks to the graphic artist at Lloyd Pans.

Tom Lehmann/TDD

[**Chitchat / Re: What is your real name?**](#)

Actually, the lab coat came to the scene by accident. I used to travel with an apron or two in my baggage, but then an employee here at AIB left. I was his size so I had the opportunity to inherit his lab coats (Gary was a chemist), so I started packing the coats rather than the aprons just to use them. With time they became part of The Dough Doctor persona, so when it was time to get new aprons, I ditched the aprons and ordered new lab coats, but this time the inscription "The Dough Doctor" and the transformation was complete.

Tom Lehmann/TDD

[Chitchat / Re: What is your real name?](#)

The greatest impact that variations in finished dough temperature will have is on the rate of fermentation, with warmer dough temperatures promoting faster fermentation. This can lead to problems if you are holding the dough for several days in the refrigerator as many of us do. I've seen doughs fail to rise properly after two to three days in the fridge when the yeast level was high (relative) and the dough temperature was also high (for the yeast level used). For greatest consistency in dough performance, along with predictable flavor and crust color characteristics it is adviseable to control the finished dough temperature as closely as possible. Here is a simple method for doing this. It is from Red Star/Lesaffre Yeast Corporation.

Subtract the flour temperature from 145 to find the correct water temperature to give you a finished dough temperature of approximately 80F. Note: Since there are so many different dough mixing methods employed by visitors to this web site, I suggest that you experiment a little with that 145 number. For example, if your flour is 65F it will suggest a water temperature of 80F to give you a finished dough temperature of 80F. If the actual dough temperature is higher use a number LOWER than 145 or if the actual dough temperature is lower than 80F, use a higher number. This would also hold true if you want a finished dough temperature higher or lower than 80F. Once you find your number you should be able to lock it in and get consistent finished dough temps.

[New York Style / Re: What water temp do you think gives ny pizza dough a better flavor?](#)

Tom Lehmann "The Dough Doctor"

I got that title hung on me back in the 1970's when I was working in Mexico (traveling for U.S. Wheat Associates) visiting bakeries fixing their problems and showing them different types of products that can be made using flour made from U.S. wheat. When I started writing for Pizza Today Magazine, Jerry Durnell (editor) asked me for a title for my column, after some discussion, I told him that I was known as "The Dough Doctor" in Mexico, and much of Latin America. It took him about two nano seconds to agree to the name of the column as "The Dough Doctor". Actually, I wanted to it to be named "In Lehmann's Terms", a play off of my last name. A few years later when Steve Green started Pizza Marketing Quarterly Magazine (PMQ) he asked me to write a column for him too, this time I got my wish, so the name of my column for PMQ is "In Lehmann's Terms" both by "The Dough Doctor", so now I am known as The Dough Doctor, or Dough Doc, or just Doc. It is more than just a name to me, it is an honor given to me by the pizza industry.

[Chitchat / Re: What is your real name?](#)

We like to thin slice it and grill it with some onions and serve it with warmed tortillas and a few sides for the tortillas. We also prepare deer heart the same way. When we are hunting from a tent camp we also like to fry it up in a mix of olive oil and beer along with sliced onions and a few peppers.

[Off-Topic Foods / Re: Beef Heart](#)

You will also be able to bake it until it's done, not "fast baked" like the original.

[American Style / Re: My PJ clone...](#)

Pete:

As mentioned, we use them in making our own tomato pesto (substitute dried tomato for basil), then we also toss them into just about anything that will go into the crock pot. Soups and stews are really great with them. I also soak them in olive oil for a few hours and use them as a pizza topping too. That's about the extent of our use of dried tomatoes at home.

Last night we started drying apples. A five gallon bucket is enough to fill all ten trays of our dehydrator. We wash, core, and slice then arrange on the trays for drying. We will keep at this every night that we can until we can't stand it anymore.

Off-Topic Foods / Re: Garden Harvest - Process and Preservation Ideas

I will also need to know what kind of shelf life you are looking for with your frozen dough balls. The main questions are:

- 1) How many dough balls do you want to make per 8-hour production day.
- 2) How many dough balls do you project yourself as needing in 3 to 5-years (this should be in your 5-year plan).
- 3) What kind of shelf life (days, weeks, months) do you want to have?

Keep in mind that there can be a big difference in equipment cost between 10 to 12-days and 3-months.

New Forum Members / Re: Frozen Dough Balls

In addition to freezing, we also like to dry some of our tomatoes, especially the cherry tomatoes. We just cut them in half and run them through a food dehydrator until soft and slightly leathery, vacuum package and freeze, then use later as you would any sun dried tomato. We also have an abundant basil crop each year so we process the leaves through a food processor with just enough olive oil to make a puree, then place in plastic tubs and freeze. This can be used as is after thawing for a great pasta sauce base, or on pizzas, but our favorite is to add ground walnuts and Parmesan cheese to make Pesto, then we use the pesto on everything from steaks and chops to chicken and pasta. We tried making the pesto right up front and freezing it but the nuts turned rancid over time and ruined the flavor. We will also occasionally make a dried tomato pesto too, just rehydrate the dried tomatoes in olive oil, then begin making your pesto with either pine nuts or walnuts. In addition to our garden, we also have an abundant supply of apples from our trees. In addition to frozen apple slices (be sure to use Fruit Fresh or lemon juice to prevent browning) we make a lot of dried apple slices. Our kids and grandkids just love them, especially when we add a little cinnamon to the apple slices just before we put them in the dehydrator. Any apple slices left over from the previous year ends up being used as a deer attractant on my deer stand which allows me to convert them to some great tasting, corn fed wild venison which, by the way, goes great with either of the home made pestos.

Off-Topic Foods / Re: Garden Harvest - Process and Preservation Ideas

From the looks of the dough, it appears that the absorption is around 65%, maybe just a little less.

Dough Clinic / Re: Una Pizza Napoletana Dough

We like to quarter a head of cabbage and boil it until tender, then serve it with a sprinkling of vinegar. We also boil the large outer leaves and roll it up with a savory meat filling (usually ground pork), then place these side by side in a rectangular glass baking dish, add some pizza sauce to the top and place in a 350F oven for about 45-minutes, or until the meat filling is completely cooked. Served hot, they are great. (Think "pigs in a blanket").

Off-Topic Foods / Re: Boiled Cabbage

Garvey hit the nail on the head.

While many of us here, at this web site don't let the pizza skin set around for any length of time between dressing and baking, that isn't always the case in a commercial pizzeria establishment. In order to cope with getting "slammed" at say, 7:00 p.m. of Friday nights (for example) it is a common practice to pre-sauce the pizza skins and hold them in the cooler until needed. When they get slammed, all they need to do is to pull a pre-sauced skin and add the toppings. This helps to keep the delivery time between an order being place, and the pizza being delivered to the customer's table more reasonable. Oiling the pizza skin prior to sauce application helps by creating a moisture barrier, thus preventing/reducing moisture migration into the dough prior to baking. When using fresh tomato slices instead of a sauce, the oil application again reduces the moisture migration into the dough as the fresh tomato slices begin to release their moisture during the baking process. If blended with garlic or other herbs, it will also add another dimension of flavor to the finished pizza. Just don't get carried away with the oil, if you can see a reflection (shine) on the dough from the oil, you have added all that is necessary, if you add too much, you can create a situation where the toppings just slide off of the slice with the first bite. Take and bake pizzas also benefit from the oil addition too as it may be hours, or even days between dressing the pizza skin and baking it. If you want to see what we are working against here, just put a spoon full of your sauce on a china plate, and cover it to prevent evaporation, then come back to it in 30-minutes, or so and you will typically see a ring of water around the sauce, this is the water that can soak into the dough resulting in the dreaded gum line just beneath the sauce layer.

General Pizza Making / Re: Brush Oil on the Crust?

Just about any slow absorbing material can be used as a decent peel dust. Bran also works very well. Flour is the least desirable since it hydrates quite fast, and once it begins to hydrate the dough will stick to the peel.

I am least fond of blowing under the pizza skin to free it from the peel. Why you ask? Well, I am trying to drink my coffee, but it is too hot, would you mind coming over here and blowing on it to cool it off so I can drink it? See my point? I really don't have an issue with it since the next stop is the oven and a "kill step", but it still just doesn't come across to your customers, or guests very well.

Prep Equipment / Re: Pizza Peels

Dig;

To answer your question as to what to put on the bottom of the pan to prevent the crust from sticking, you should season any bright aluminum pan before using it. This is done by setting your oven temperature at 425F, then brushing the pan, inside and out, with salad oil, place the pan in the oven to bake for about 20-minutes. Be sure to place a piece of foil below the pan to catch any oil that might drip off, and be prepared to handle the smoke created by the seasoning process. I like to do this at least twice, the pan should now have a light gold tint to it which will continue to darken to almost black with continued use. DO NOT allow a seasoned pan to soak in water, to do so will make the seasoning peel off like a bad sunburn, you will then need to strip all of the seasoning off of the pan and start all over again. Remember the admonishment about the cast iron skillet? Never wash it! Just wipe it out. This should also apply to a seasoned pizza pan. The darker it gets, the better it bakes. One other thing, you will always need to put just a very thin coating of oil in the pan to allow the baked crust to release properly.

I'm betting the cracker like crust you made was baked in the bright pan. The bright surface reflected heat away from the pizza so you had to bake it longer to get color on the crust, this resulted in extreme drying of the crust, hence the cracker like characteristics.

Newbie Topics / Re: What to put on the bottom of pan to prevent sticking

Chaz;

Yes, the coal fired ovens can/do get hotter, additionally, wood can, at times be difficult to get or expensive to get, especially when you lock yourself into one specific type of wood. Anywhere along the entire east coast coal/anthracite should not be difficult in getting, but from a commercial stand point, be sure to check the laws governing these types of ovens, and if the oven is located indoors, be sure to check with your insurance agent at the same time.

Chitchat / Re: Coal fired ovens vs wood fired ovens

PDP;

I was AJ's last night and picked up a pizza to take home for dinner (I live about 12-miles from the store), when I got home with the pizza we dived right into it. It is interesting to note that even after all that time in the box you could still eat the pizza with one hand, N.Y. style by slightly folding the crust (and I do mean only slightly). You have to keep in mind that this pizza is made using a very different process from what everyone thinks of when baking pizzas. To begin, we make a par-baked crust (hand tossed) with only a portion of the sauce on it. These are inventoried until needed. To make a slice, the crust is divided into equal size slices using an Equalizer from Lloyd pans, and a slice is removed, then dressed to the customer's order (this includes more sauce, any toppings desired, and cheese), the cheese is put on last to hold the slice together, this is baked on a non-stick Hex Disk (Lloyd Pans), but this is where it gets interesting, the pizza is now baked from the top down using a special top and bottom bake profile in an air impingement oven. This gives us a total bake time of just over 3-minutes for either a slice or whole pizza. I developed this procedure for them in response to the soft, soggy pizza slices that I was getting in New York a few years ago. It has everything everyone here in Manhattan wants, a New York presentation, and a crispy crust. You can read more about AJ's at <www.ajsnypizza.com>. That's the good news, the bad news is that we haven't yet been able to replicate this type of pizza using anything but a commercial air impingement oven. For a super crispy crust characteristic you might experiment using a par baked crust.

Shop Talk / Re: Charring and the Marketplace

Bill;

Our basil and oregano have been going great guns too this summer so we puree the excess in a blender with just enough of a 50/50 blend of canola and olive oil to make a puree (looks like a green milkshake), we then pour this into margarine tubs and freeze. Later we use as you would fresh basil or oregano, or we add Parmesan cheese and pine nuts, or walnuts to make a great winter pesto. We tried putting the nuts in right up front, but we ran into problems with rancidity developing before we used all of the pesto. The "pesto base" that we now make holds up extremely well for the better part of a year in the freezer.

Pizza Toppings / Re: Partially-dried tomatoes

Bill;

We are faced with the same dilemma at home too with more tomatoes coming in than we can use, so we are doing the exact same thing that you are doing, except

that after partial dehydration we put them into vacuum bags, pull a vacuum and seal, then store in the freezer. They appear to hold up quite well this way, so when the snow flies (if we get snow this winter) we can still enjoy the fruits (literally) of our garden. We have also been putting up sweet and jalapeno peppers this way too.

Pizza Toppings / Re: Partially-dried tomatoes

Craig;

They look fabulous!

The only thing missing was my dinner invitation.

I must have been distracted when it came. LOL

Off-Topic Foods / Re: Hamburger buns and old school burgers

Weemis;

Not a problem, you deserve to know who you're communicating with. One of our mission statements is to communicate information to the industry, you and everyone else here and at the other forums are part of that industry.

New York Style / Re: Disappointing pies tonight

Weemis;

To clear up any confusion, Peter is absolutely correct. "WE" is Tom Lehmann and Jeff Zeak, here at The American Institute of Baking/AIB International. Jeff has been my right hand man, and associate in most of the pizza work that has been done here at AIB since he came on board about 25-years ago. Prior to that, I did all of the work by myself. My research on pizza dates back to around 1967 and continues to this day with the full support of AIB, a multi-million dollar research and education facility, located in Manhattan, Kansas dedicated to serving the food industry world wide. When Jeff and I discover or develop something new or of interest to the pizza industry, WE work together to disseminate that information to the industry through seminar participation at Pizza Expo and the NAPICS (North American Pizza and Ice Cream Show), authoring pizza related articles for trade publications, as well as providing educational and technical, hands on assistance to all aspects of the pizza industry (pizzerias, box chains, as well as the largest frozen pizza manufacturers. We also provide technical support to the allied pizza industries (oven manufacturers, pan and utensil manufacturers, and ingredient suppliers). Whew! That was a mouthfull! Hopefully I've answered your question as to who "WE" is.

BTW: I am seriously considering retirement sometime within the next 2 or 3-years, but I will continue to assist the pizza and baking industries after retirement, so Jeff will be left to fend on his own until he can find someone to work with him and become a "WE" as I have.

New York Style / Re: Disappointing pies tonight

Peter;

Most of the char that I see on N.Y. style pizzas is on the raised edge as a result of blister/bubble formation. Like wise, there might be a few on the bottom, but not a fully or even heavily charred bottom. At AJ's here in Manhattan (Kansas) they serve a N.Y. style slice (its' a slice operation) that has a very good, solid bake with good browning, but no real char across the entire bottom and outer edge. The result is a large slice that can be picked up and eaten using only two fingers, and has a decided crunch when eaten. I might add that AJ's was voted best pizza in Manhattan two years ago. I should also add that it was open competition, meaning that anyone/everyone could get in on the action, chains, independents, and home pizza bakers. How good is it you ask? Adam Peyton, the owner, has been in

business now going on his fifth year, and he is presently opening his third location. That is success in anybody's book.

BTW: I do not consider N.Y. style pizza to be crispy by any stretch of the imagination. We developed Adam's pizza to be extraordinarily crispy because that is what his customers want and expect with their pizzas.

Shop Talk / Re: Charring and the Marketplace

I don't see it so much as N.Y. style pizza v/s whatever, but what is both regionally accepted and customer accepted. You can have a blond colored N.Y. style pizza, that is a given fact, no, you cannot have an authentic N.Y. style pizza without the char. In this case we're catering to customer demands/preferences, not what's authentic or not. This is what separated home pizza bakers from retail establishments, especially the box stores. At home we can make whatever we want, however we want it....if you don't like it, tough! But at the store you can't do business that way, so like it or not, we've got to prepare and serve the pizza the way the customer wants it, it may not be to our liking, but then again, we're not paying for it either, we're just paid to make it their way. This is frequently a serious road block to "newbies" just getting into the pizzeria business. One of the things that I always tell someone interested in opening a store (pizzeria) is that you must be like an honest politician (whatever that is), you don't have a vote in the matter, but instead your job is to represent the desires of your constituents (by giving them the pizza that they want).

Shop Talk / Re: Charring and the Marketplace

If you really want to go out on a limb, go to the web site for Exotic Meats USA, they have a wide assortment of just about anything that moves, or moved, and might be considered edible (and it's all legally farmed). Caution: Just two weeks ago a restaurant in Wichita, Kansas was planning to offer lion meat on the menu for a special dinner treat, but the idea was shot down by a bunch of animal lovers. I love animals to.....medium well please!

Pizza Toppings / Re: Has anyone tried exotic meats??

I well remember when wood burning pizza ovens made their first debut in Chicago. We were not accustomed to seeing a pizza with char, so it was a common place thing to hear people complaining that their pizza was burned, over done, etc. With time and education people were educated to a different type of pizza, and today Chicagoans are much more accepting of char on their pizza. There is also a group of people who won't consume pizza, or any other food with char as this results in the development of carcinogenic (cancer causing) compounds. Pick your poison, I'll have mine with extra cheese!

Shop Talk / Re: Charring and the Marketplace

To add even more confusion, the common sense approach says to add any uncooked meats to the pizza last, so they have greatest exposure to the oven heat and are assured of being thoroughly cooked on the pizza, with that said, when making a Chicago style deep-dish pizza, the raw sausage goes on the bottom of the pizza, but it is thoroughly cooked due to the extraordinarily long baking time of these pizzas (about 50-minutes). The Chicago thin crust pizzas are also dressed differently with the cheese being put on last. Like Peter said, this results in a very soggy finished pizza as the melting cheese traps all that moisture under it, but again, this pizza is given a long baking time too, normally around 30-minutes. Most, if not all of the big box chains follow food safety practices of using nothing but pre-cooked meat toppings (due to the possibility of cross contamination, and

the fact that they just need to be heated to above 160F to be safely served), and they like to keep the meat close to the top of the pizza to ensure thorough reheating/cooking.

Pizza Toppings / Re: Best order to put on toppings??? Help?!?

JB;

Your present dough formula is at 64.9% absorption (water weight divided by flour weight times 100). To find your absorption at 60% just use your calculator and enter the flour weight (567) X 60 (press the "%" key) and read the answer in the display window. 567 X 60 (%) 340.2 g./ml of water should be added to provide 60% dough absorption.

Dough Clinic / Re: Cold Ferment?

Atom;

Mixing the oil into the dough immediately after it comes together is not a problem when using a mixer, but is nearly impossible if mixing by hand. It normally takes about 4 to 5-minutes of machine mixing to achieve uniform distribution of ingredients throughout the dough. When making pastry, such as sweet dough, where the fat level is really up there, at 18% to 25% of the total flour weight you just can't develop the dough with that much fat if you were to mix it in right from the beginning, so it is normally added during the last 5-minutes, or so, of the mixing time with excellent results. If you want to see how your dough mixes in your mixer, just add a little yellow food coloring to the dough at various stages of mixing and see how long it actually takes to get a uniform dispersion of the coloring as indicated by the color of the dough. Unless your dough is just going for a free ride on the dough hook, you will be surprised at how well the mixer incorporates the ingredients.

Newbie Topics / Re: Order of ingredients, dry first or water+idy ?

A couple of things come to mind. What was your finished (mixed) dough temperature? We normally like to see something in the 80 to 85F range. Did you cover the container when you put the dough into the fridge? If you did, that might have contributed to the problem as this does not allow the dough to cool very efficiently, you might try wiping the top of the dough ball lightly with oil after you put it into the plastic bowl, then leave the lid off for about 2-hours (allowing the dough to cool more efficiently) before lidding the bowl.

New York Style / Re: Disappointing pies tonight

Lenny;

Testing that we have done over the years has shown that adding the water to the mixing bowl first will significantly shorten the total dough mixing time while making life a lot easier for your mixer at the same time. Also, you mention adding IDY to the water. This is probably not the best idea for optimum yeast performance as IDY is actually designed to be added dry, with the flour, or an alternative method for adding IDY is to first mix the ingredients until they come together and start forming a dough, then add the IDY to the dough mass and continue mixing for at least 5-minutes.

More recently we have looked at the claims that the outside weather influences the absorption properties of the dough. What we found was that when the oil was added to the water in the mixing bowl, it would float on top of the water, then when the flour was added, the flour would absorb some of the oil as opposed to water. Since flour does not contain any gluten, but only proteins, which when agitated in the presence of water forms "gluten", when these same proteins are agitated in the

presence of oil, gluten is not formed (think of making a rue to thicken gravy). When we separated the oil from the water, by adding the oil immediately after the dough had started to form, we got better hydration of the flour, complete gluten formation and much improved uniformity in dough performance when several doughs were made. Based on this, we now recommend that the oil be added to the dough after about 2-minutes of mixing, or as soon as you don't see any dry flour in the mixing bowl. If you use a plastic fat, such as butter or shortening, you can add it right along with the flour as this only applies to the use of oil in the dough.

Newbie Topics / Re: Order of ingredients, dry first or water+idy ?

Craig;

Great looking bison!!

There are a few companies now offering alternatives to regular pizza toppings. At Pizza Expo I had a chance to sample bison pepperoni, turkey pepperoni, as well as a turkey sausage. All were great tasting with a claim to be lower in fat than the "real" stuff. We tried the bison pepperoni and found it to perform very well on pizza. It didn't oil out or cup like regular pepperoni does (that can be either a good thing or a bad thing depending upon your perspective).

Off-Topic Foods / Re: Bison!

Pan food for thought:

Deep-Dish: Black (dark colored) either 1.5 or 2-inches deep.

All other thin crust types of pizza: Coupe style pans or tapered cutting pans (40 degree shoulder 1/2-inch deep) again in a dark anodized finish.

Stones/tiles/steel, Pans & Accessories / Re: What depth pans do I need?

Mostly N.Y. style, but I also use them on extensively on my Margarita pizzas as they really stand out when using pieces of torn Mozzarella and garnished with fresh basil leaves.

Sauce Ingredients / Re: Stanislaus 74/40 Tomato Filets

Craig;

I'm right in there with you! Until you have had a really great pizza (for your specific likes) all pizzas are OK to good, but after that taste of pure delight, all others are lacking. The best part of making your own pizza is that with time, you will end up making pizzas that meet YOUR specific taste, if it doesn't, you know who to blame! The problem with the big box chains is that they have to make a pizza that appeals to a much broader spectrum of individual tastes, there is nothing wrong with that, it's just the nature of the beast that they have to contend with.

Newbie Topics / Re: Change of Taste or Has Commercial Pizza Gone Bad?

We use the Stanislaus 74/40 Tomato Filets all the time, but not directly from the can, we first drain them very well and then add them directly to the pizza skin in place of a prepared sauce. The order of addition is as follows: brush the pizza skin with garlic infused olive oil, add sliced or diced garlic, then add several basil leaves, over that apply the 74/40 Tomato Filets, and then the cheese and other desired toppings, finish with a sprinkling of shredded Parmesan cheese. The tomato filets provide a great flavor and texture, and more importantly, my pizzas don't look commercial.

Sauce Ingredients / Re: Stanislaus 74/40 Tomato Filets

New York pizzas are commonly made with All Trumps flour (14% protein content), but any other high protein content (13 to 14%) should work well in this application.

If you cannot get a higher protein content flour, buy some vital wheat gluten (available at most supermarkets in the baking ingredients aisle) and use that to bump up the protein content. Starting with a 12% protein flour, you will need to add between 3 and 4% (based on the weight of the flour) vital wheat gluten (VWG) to bring it up to 14%. Be sure to dry blend the VWG into your regular flour, and remember to increase the dough absorption by 1.5% (based on the total flour weight) for each percent VWG that you add. This will help to impart that chewy characteristic common to N.Y. style pizzas.

New York Style / Re: Bakers from Montreal (and Canada): help me gather the best ingredients

When we mix dough in a large planetary Hobart mixer (80-quart) using 50-pounds of flour, we typically need to use water at 60 to 65F to achieve a targeted finished dough temperature of 80 to 85F after about 10-minutes of mixing. The cold water is needed to compensate for the temperature gain of the dough during mixing as a result of friction between the dough and the bowl. This is pretty common in pizzerias across the country, but when making pizza at home, with much smaller mixers, the temperature gain is not all that great, plus our expectations of the dough are different between store made and home made dough, as a result, we normally see warmer water being used in a home made dough than we would in a store made dough. The thing to remember is finished dough temperature is what we are striving for. This is what sets the stage for fermentation and ultimately flavor development and handling properties.

New York Style / Re: cold water technique--worked

I'm with Craig too, except I typically use 60 to 65F water temperature for my method of dough management.

New York Style / Re: What water temp do you think gives ny pizza dough a better flavor?

H;

You might give this one a shot to see if it comes close to what you are looking for.

Flour:(high gluten/protein) Think General Mills All Trumps. 100% (500-grams)

Salt: 2% (10-grams)

Sugar: 2% (10-grams)

Olive oil: 1% (5-grams)

Yeast (active dry yeast): 0.5% (2.5-grams)

Water: 56% (280-grams)

Note: Take about 50-grams/ml of the water and warm it to 100F, put the ADY into the warm water to hydrate it (about 10-minutes) then add this to the remainder of the water (70F) and pour into the mixing bowl, add the flour, then the salt and sugar and begin stirring with a wood spoon, when the dough gets too stiff to continue stirring, remove the spoon, add the olive oil and continue mixing by hand for about 2-minutes. Place the dough into a lightly oiled bowl, cover to prevent drying and set aside to ferment for 2-hours. Turn the dough out of the bowl onto a lightly floured counter top and knead just a few times until the dough feels elastic. Place back into the oiled bowl and allow to ferment for another hour. Turn the dough out of the bowl and cut into two pieces. Lightly form each piece into a ball and set aside to proof until the dough balls can be easily opened into pizza skins (about an hour), or lightly oil the dough balls and place into individual plastic bags, twist the open end to close, forming a pony tail, tuck the pony tail under the dough ball as you place it into the fridge. The dough will be ready to use on the following day. To use, just remove the dough from the fridge, and allow it to temper AT room

temperature for about an hour, then turn it out of the bag into a bowl of dusting flour, and begin opening the dough into pizza skins.

Note: If you cannot get a suitably high protein content flour, like All Trumps (14%), use the best flour you can get, and add wheat gluten to it (available at most supermarkets). The amount of gluten to add will be 5% of the flour weight. Just be sure to dry blend the gluten into the flour before adding it.

Newbie Topics / Re: Looking for a chewy base recipe (Pizza Hut stuffed crust style)

I'm a pretty basic guy too. My personal favorite is nothing more than brushing the pizza skin very lightly with olive oil, then adding diced garlic, fresh basil leaves, topped with slices of ripe tomato or Stanislaus 74/40 Tomato Filets (well drained). Then comes the cheese and desired toppings. Simple, but with a great flavor and texture, best of all, it doesn't mimic what everyone else is doing. Dare to be different and creative.

General Pizza Making / Re: Pizza Sauce

TWILD:

Your dough temperature might be a little on the high side too for your home fridge. When using plastic containers like the one shown, be sure to leave the lid off for at least the first 2-hours in the fridge. If you don't do this you will trap in the heat of the dough ball thus allowing fermentation to continue at a faster rate than desired, this is especially true when shooting for a 3 to 4-day hold time in the fridge.

New York Style / Re: Flat Dough Balls

It would also help us if you could provide us with your dough management procedure. This is everything you do with/to the dough from the mixer to the time it is used. Be sure to include temperatures too as it can have an impact upon fermentation, which can impact crispiness. What we typically look for is something like this: Mix the dough just until it takes on a smooth, satiny appearance; finished dough temperature is usually in the 80 to 85F range; take the dough directly to the bench for scaling and balling; wipe dough balls with salad oil and place into dough boxes; take dough boxes directly to the cooler and cross stack; allow dough boxes to remain cross stacked for 2.5-hours, then down stack and nest or lid the boxes; on the following day, remove a 2 to 3-hour supply of dough from the cooler, leaving it in the closed boxes; allow the dough to temper AT room temperature for about 3-hours, or until the dough temperature reaches 50 to 55F; take the dough to the bench for shaping into pizza skins as needed (Note: use of a sheeter/roller is not conducive to making the crispiest crust unless you allow the dough to set for 20 to 30-minutes after forming). One trick that I have used is to use the sheeter to open the dough only to about 2/3 of the finished diameter, then finish opening it by hand to the finished diameter. This provides for a very crisp crust characteristic without the need to allow the dough to rise after forming. If you bake the pizza on a screen in a deck oven you can improve the crispiness if you "deck" the pizza for about 60-seconds before you remove it from the oven. This is where you remove the pizza from the screen and allow it to bake right on the hearth for the final 60-seconds. As for your conveyor oven, assuming it is an air impingement oven, do you know what the top and bottom finger profile is?

Dough Clinic / Re: Help please,,I am having dough issues!!

This sounds a lot like the old blitz method of making pastry (Danish) dough. You cut the cold fat into small, walnut size pieces and mix them with the flour until they are about the size of Lima beans, then add the water and other dry ingredients and mix

just enough to incorporate. Immediately scale and ball the dough and place it in the cooler for about 24-hours, then sheet (roll) to about 1/4-inch thickness, and fold several times (left to center, right to center, top to center, and bottom to center) place back into the cooler to rest (about 8-hours) and then roll to form your pizza skin. The amount of fat to use will be between 20 and 25% of the total flour weight. A number of years ago Schwan's (Tony's) made a type of pizza on a crust that they called Italian Pastry Crust. This was made in a similar manner except that they used commercial hard fat flakes instead of cutting the fat themselves. The resulting crust was tender eating, and had a decided pastry looking appearance.

Chicago Style / Re: flaky pie crust techniques applicable to deep dish?

A slightly over fermented dough may exhibit bucky characteristics during forming. In this case bucky means that the dough will be overly elastic and resist stretching. Severely over fermented dough will stretch easily, even to the point of tearing easily. It will feel "dead" like pushing out a wet towel, and it won't exhibit good rise characteristics during baking, often seen as a pizza with a very low (thin) center section with poor bake out properties. Due to consumption of most of the sugar and acidification of the dough, it will not exhibit good baking or browning characteristics in the oven. As a finished crust, the presence of a gum line just under the sauce is common, especially with a thin/low center section, a light or mottled appearance is common, and the flavor might be a little on the sharp side of desirable due to the excessive acid formation.

Dough Clinic / Re: Over fermented dough

Norma;

You're lucky to have such a bountiful garden this year. With the ongoing drought we have lost one garden (beans, carrots, turnips, etc.) due to lack of subsoil moisture. You just can't water enough to compensaye for lack of rain, a VERY dry winter last year, and then add to that over a month of 100F+ temperatures! Our other garden with squash and watermelon is a raised bed garden and is doing just OK, but the excessive heat is taking its toll. I hedged my bets this spring and did another "potted" garden, using salvaged calf feed containers (about the size of a bushel basket) and literally lined our drive way with them. They are are easy to really pour the water to, and retain the water much better than our raised beds. Aside from the heat slowing down the setting of the tomatoes and peppers in these pots they have done quite well for us. One variety of tomato that I used in these pots is called Healthy Girl. It looks something like a Roma, but is more egg shaped, it also has a tough skin like a Roma but is more dense and solid than any Roma I've seen. It is a fantastic tomato to use as either a topping or my favorite is to use it in place of sauce, in my humble opinion, nothing is more natural tasting than real, fresh tomato on a pizza. Lets hope this silly drought comes to an end soon!

Sauce Ingredients / Re: Gardening tomatoes, herbs, and some veggies for 2012

You have two options to making a less chewy/tough pizza upon standing. 1: Change to a lower protein content flour if you can. For example, if your present flour has 13% protein content, going to a 12% protein content flour will help to reduce some of the toughness. 2: Continue using your existing flour and increase the fat content. Right off the bat, I'd take it up to at least 5% of the total flour weight and bench mark from there. Maximum tenderness is achieves at around 8% total fat content. You can go higher, but you begin to compromise other characteristics. If you really want to see how the fat level influences toughness, just buy two packages of tortillas (not too terribly different from pizza skins), make one a "feature" package,

while the other should be a "normal", full fat tortilla, you don't need to fill and roll, just heat and eat and you'll immediately see the difference.

Dough Clinic / Re: New Pizza Shop

We have not had good success with pre-fermenting the dough prior to scaling, balling and taking it to the cooler/refrigerator when we are holding it for more than about 24-hours. This is due mostly to the dough over fermenting while in the refrigerator, if you simply begin reducing the yeast to a point where it won't over ferment (blow) you probably won't have enough leavening when the dough goes into the oven to support the weight of the toppings, so you can end up with a nice edge, but a flat center portion that in all too many instances is characterized with a gum line just beneath the sauce layer. We find it much better to take the dough directly from the mixer (80 to 85F) cut and round it, oil the dough ball(s) and drop into a plastic bread bag, twist the end closed and tuck it under the dough ball as you place it into the fridge. This is important as it allows for some expansion of the dough ball. The dough will be ready to begin using after about 24-hours, but is at its best after 32-hours, and it will hold in the fridge for a total of about 48-hours, or a little more. To use the dough, remove from the fridge about 2-hours before you anticipate opening the dough ball into a pizza skin, then turn the dough out of the bag, dropping it into a bowl of dusting flour, place the dough onto the counter top and open into a pizza skin in your normal manner. We do this all the time and it works really well for us.

Dough Clinic / Re: Cold Ferment?

The air impingement ovens used by many of the big box pizza stores deliver a lot of intense heat to the top of the pizza and really create an almost toasted pepperoni characteristic which goes a long ways toward intensifying the flavor. We have made pizzas for customers where the pepperoni was so toasted that it was getting crispy , like a piece of bacon (admittedly, a little more than I personally like) and the flavor was sharper than with a lesser baked pepperoni.

Pizza Toppings / Re: Pepperoni Frustration

Peter;

That's it.

Thank you,

Tom

Dough Clinic / Re: New Pizza Shop

Jamie;

The use of just a small amount of sugar will help to "jump start" the browning reaction. You are correct in that too much sugar will result in the development of an unwanted uniformly brown colored crust, but with just a small amount of sugar, about 1 to 1.5%, you should be able to get the browning reaction started without excessive color development.

Neapolitan Style / Re: Ratio for top and bottom oven temperatures

Remember, this dough should rise very slowly in the cooler. It typically takes 18 to 24-hours in the cooler for the dough to rise sufficiently (receive enough fermentation) to open easily and produce a finished crust that doesn't exhibit excessive bubbling during baking, and has a very good fermentation flavor. How many hours do you leave the dough in the cooler before you are using it? Do you bring the dough out of the cooler and allow it to temper AT room temperature for 2 to 3-hours prior to opening the dough balls into pizza skins?

If you will send me a private message I will be glad to send you a copy of my Dough Management Procedure that you can use for developing a dough management procedure for your specific shop conditions.

Dough Clinic / Re: New Pizza Shop

The dough formula looks to be in reasonable balance, IDY is a little high at 0.395% (we normally recommend 0.375%) but this should not pose a problem. The sugar is only 1% so that is not a problem either. The oil calculates out to 4%, which is again a little high but not unusually so. Your cooler at 4C/40F is operating at about the highest we like to see it at, and with traffic in and out it during the day, it might actually be operating at a higher temperature but that remains to be seen. From your comment about the dough balls not rising when you take them directly to the cooler after mixing/balling, I would be suspecting that your finished dough temperature might be too low/cold. We normally like to see the finished dough temperature in the 80 to 85F/26 to 29C range. If you can provide us with your complete dough management procedure it would help us to determine where the issue is at, and suggest corrective action.

Dough Clinic / Re: New Pizza Shop

Actually, we're not letting it warm to room temperature, but rather temper AT room temperature for about 2-hours. The actual dough temperature after tempering at room temperature for 3 to 3-hours is in the 50 to 60F range. Unless your yeast levels are very low, when you take the dough directly from fridge to oven the dough typically exhibits a propensity to bubble/blister much more than it does if it is allowed to temper first. In many cases where this is a practice, we have found that there is a tendency for the dough to develop a gum line upon baking when the yeast level is reduced too low. This is due to the inability of the dough to support the weight of the toppings with an excessively low yeast level. In short, it becomes a bit of a balancing act between yeast level, and gum line if the dough is not allowed time to temper at room temperature for a period of time after being removed from the fridge. It's not a big deal for the home pizza maker, but at the pizzeria level it can be a real problem, especially when the pizzas are being baked in an air impingement oven. In this case, when the pizza tries to transition into a pita, all of the cheese and toppings are forced into the top fingers of the oven making for a super neat mess that might also take out the next two or more pizzas following it (not a good situation).

One other thing, the tempered dough will typically be somewhat easier to form into a pizza skin than cold dough straight out of the fridge.

Dough Clinic / Re: What happens if you don't have time to let the dough warm to room temp?

Gianni;

When you bulk ferment, especially with large quantities of dough, you get much more fermentation taking place than when you divide and ball the dough prior to fermentation. Even though the dough is in the cooler, that large piece of dough doesn't cool down, infact, it actually increases in temperature (about 1F per hour at room temperature and about half of that in the cooler). This is due to heat of metabolism (fermentation). With that large piece of dough, as it ferments, it becomes less dense and better insulates the center/core portion from cooling, so it just keeps on happily fermenting away, this is why you are getting that sour taste (over fermentation). With the much smaller dough balls, they are more efficiently cooled, and fermentation is much better controlled as a result. The fact that the dough balls are not being over fermented is the reason why they handle better and

produce a crust with a flavor more to your liking.

Dough Clinic / Re: Bulk rise vs balling

Jamie;

I think I know what your problem is. Your flour is milled to a very high level of starch damage. You will note that the ingredients shown on the flour bag indicate that the flour is enriched, but has no other treatment, including malting, which if present, would be indicated by the presence of malted barley flour. Also, when flour is milled to a high level of starch damage it exhibits a very high absorption, as you have indicated. The reason why malt is added to the flour is to convert starch to sugars for yeast to feed upon, and to provide some residual sugar for crust color development. With your long fermentation time your yeast is probably struggling due to lack of nutrients to feed upon. If you were to add malt or any form of amylase enzyme to the dough it would literally turn into a liquid after a few hours of fermentation as all of the damaged starch would be hydrolyzed to sugar. My recommendation is to add some sugar to the dough, this will provide both nutrient for the yeast and residual sugar for crust color development. You will need to experiment to find the right amount of sugar to add, but I would begin with an addition of 3% based on the total flour weight.

Neapolitan Style / Re: Ratio for top and bottom oven temperatures

I.N.:

If you are using only corn meal for your dusting flour you might want to add some semolina flour to it to help dry the dough surface. Everybody has their own favorite blend for a dusting/peel flour. Mine is equal parts of corn meal, semolina flour and my regular pizza flour. Drop your dough ball into a bowl of your dusting flour, then place on the counter top with more of the dusting flour and proceed to open the dough ball into a pizza skin, then transfer the opened skin to your peel which has been lightly dusted with either corn meal or your blended dusting flour (works well as a peel dust too), then be sure to shake to make sure it is not sticking to the peel, as you dress the dough skin give it an occasional shake. With time and experience you will soon learn how often YOUR dough needs to be shaken on the peel.

Newbie Topics / Re: working dough & peel related questions

Try this once;

Flour 100%

Salt 1.75%

Sugar 2%

Olive oil 2%

Water 58%

50/50 blend of garlic and onion powder 0.5%

Note: All percentages are baker's percent (based on the total flour weight).

Add water (100F) to the mixing bowl, add the flour and dry ingredients, mix for 2-minutes, then add the oil and mix as usual for your mixer. No, there is no yeast in this formula.

Scale and form the dough into balls, and set aside to rest for 20-minutes (cover to prevent drying).

Roll the dough balls out to make a thin crust, place on baking stone and lightly par-bake. Immediately dress as desired and place back into the oven to finish baking (about 5-minutes). This usually produces a very thin, crispy, crackery crust. Note: It must be par-baked.

Cracker Style / Re: Pizza Shoppe-style?

That bacon fat pizza sounds mighty good. Crispy bacon pieces are one of my favorite toppings.

General Pizza Making / Re: Solid Fat

DM;

Just be very careful when adding honey, or any kind of sugar to your sauce as you will increase the potential for it to scorch around the edge of the pizza during baking, thus ruining the flavor of the pizza. One way we have found to address the acidity issue is to add powdered Parmesan and Romano cheese to the sauce to mellow the flavor out.

Sauce Ingredients / Re: Honey in Sauce

Take and bake style pizza was developed in response to what many consumers said they wanted in pizza to be consumed at home. Fresh tasting, hot and crispy (jury is still out on the crispy part). Then along came the DiGiorno pizzas and the move to baking pizzas at home was in full motion. DiGiorno pizzas were positioned to compete with DELCO (delivery/carry out) pizzas and they did it very well. As the old adage goes, you "fight fire with fire" so a lot of the independent operators started offering T&B pizza in addition to their regular pizzas. Most consumers surveys indicate that consumers have a preference for T&B over DELCO in many parts of the country. It is hard to argue with the success of Figaro's and Papa Murphy's. To see some typical commercial T&B dough formulas please go to the RECIPE Bank at <www.pmq.com>

Chitchat / Re: Hot and Ready VS Take and Bake

A number of years ago I worked with a fellow making several different kinds of gourmet cakes that were shipped around the country. He used a special shipping service provided by the delivery carrier (It might have been UPS, I don't remember anymore) but they provided special custom packaging, and with I believe 4-ounces of dry ice, it could be shipped anywhere in the U.S. for one money. If I remember correctly, the cost of the packaging and shipping came to around \$15.00 at that time. Kinda expensive, but it seems people were more than willing to pay up to \$50.00 for a gourmet carrot cake, chocolate decadence cake, or cheese cake. It might be a little hard to get people to pay \$15.00, or more, shipping charges for a piece of pizza dough. Point is, those Styrofoam containers with a little dry ice really do the trick when it comes to keeping something frozen/cold.

Chitchat / Re: Shipping frozen dough in the mail

My oldest son lives just a short distance from the Pizza Shoppe on Hwy-7 (Olathe), I am familiar with their pizza as my son usually picks one up when I'm at his house, but the next time I'm there I'll make it a point to go to the store to observe how they make their pizzas. I do know they they bake their pizzas in a cutter pan as is indicated by the 40-degree shoulder on the crust edge, and they do use deck ovens, and it is a thin cracker type crust. I'll try to get more details on it the next time I'm there.

Cracker Style / Re: Pizza Shoppe-style?

Charbo;

The inclusion of fat into a dough formulation (up to a point) improves volume response through better gas retention and lubrication of the dough structure. You can read about this in S. Matz book or E.J. Pyler's Baking Science and Technology. When the fat content goes much above 6% of the flour weight it actually begins to

reduce bread volume. More current research has shown that just adding oil or melted shortening to the dough can, under certain circumstances, lead to inconsistencies in the dough (we think this is where the impressing that the outside weather influences dough absorption properties), this is why we developed the delayed oil addition method of dough mixing. By this method the oil is not added until the flour has had an opportunity to hydrate, the oil is then added and the dough mixed in the normal manner. The reason for this is due to the fact that oil will soak into the flour thus reducing the amount of gluten that can be formed, resulting in variations in dough consistency. Since solid fats do not soak into the flour they can be added right up front with the other ingredients. In a nutshell, that's the story of oil and solid fat in a dough system.

General Pizza Making / Re: Solid Fat

By:

Also, keep in mind that as you ferment the dough at different temperatures you will get different finished flavor profiles. IE: The flavor profile of a cold fermented dough is not the same as that of a warm fermented dough. If it were me in that pickle, I'd mix a dough with a targeted finished temperature of about 85F, scale, ball, oil, refrigerate maybe every 4-hours during the day, or as I deemed necessary to maintain my dough supply. Do you have a reach-in cooler? If so, try this, Make your dough at night, scale, oil and place into individual plastic bags, refrigerate, early the next morning, place the bags of dough into a box (reduces storage space) and make another batch the same way. The first batch will be ready to go when you are, and the second batch should be ready to go later in the afternoon, mix a third batch after the noon hour trade for the dinner/evening time, this one should be ready to go around 6:00 p.m., do this as necessary to maintain a constant dough supply without over running your ability to inventory dough. The key here is to use individual bags for your dough. Once cooled (about 3-hours) they can be grouped more tightly together for better utilization of limited cooler space. Any major ingredient or restaurant supply should be able to provide you with low cost plastic bread bags. You might need to dock the dough pretty good to control bubbling, but this should allow you to limp through until you can add more cooler space.

Dough Clinic / Re: New Pizza Shop

Aeb;

I've never identified a strong alcohol aroma when opening the oven door during baking. I've detected a strong fermentation aroma (a mix of alcohol, carbon dioxide, and acids) but never specifically alcohol. Weird!

That's what makes life so interesting...new things happening all the time.

General Pizza Making / Re: Oven fire due to alcohol from yeast fermentation

One oven company that comes to mind when we think of wood burning is Woodstone <www.woodstone-corp.com> They have everything from gas, to wood, to coal and combinations of both gas and wood or coal. I'm partial to the combination with gas, that way you can close the shop down for a day or two without the need to "feed" the oven.

Shop Talk / Re: How do I decide how big of an oven to get?

Scott;

Nope, that's not just the case here in Manhattan, Kansas, but rather an across the board average baking temperature for deck ovens. There are places that bake as low as 400 to 450F on the low side to as high as 600F to 650F on the high side

(they would go higher if the ovens would permit). so I still stand by my guns at 500 to 550F (525F) as an average temperature range. If the request had asked for a temperature to bake a specific type of pizza, let's say a New York thin crust, or a Chicago deep-dish, that would have been a different story.

Dough Clinic / Re: Oven Temp

We make some "killer" pizzas using nothing but ripe, garden fresh sliced tomatoes. We put down a few fresh basil leaves and sliced or diced garlic, then add the tomato slices followed by the cheese. Clean, simple, great flavor, texture, and appearance. As a plus, it doesn't look anything like a box store pizza, instead, it has much more of a "gourmet" presentation.

General Pizza Making / Re: What to use for Pizza Sauce with no crushed tomatoes on hand?

Most commercial deck ovens, such as the Y-600 are set to bake at 500 to 550F. We typically set our deck ovens to bake pizza at 525F, unless the dough formulation or some other unique feature of the pizza dictates a different temperature.

Dough Clinic / Re: Oven Temp

I thought it was nearly impossible to see an alcohol flame. I remember this from watching dragsters running on alcohol.

I've never heard of this either, when you get a bubble to form on the dough it will contain some alcohol, but it will also contain a good portion of vaporized water too. I've seen this happen when someone didn't set their oven to a temperature below the flash point of oil (about 435F) when seasoning pans, what happens then is the oven fills with smoke, lots of it, and when the door is opened, POOF! Your share of excitement for the week all in just a second or two. Before the days of fail safe pilot light gas valves, I once had an oven go out on me, I opened the door to vent the gas and hit the ignition switch, The oven was not fully ventilated, the spark ignited the gas, and the following explosion, resulting in a large yellow fire ball, blew the door off of the oven and removed my eyebrows as well as ignited the paper cap I was wearing. Shortly after that the oven was fitted with the latest gas safety devices.

General Pizza Making / Re: Oven fire due to alcohol from yeast fermentation

G;

Top not browning at all, but the bottom is, and the cheese burns before the top of the pizza browns.

*) Bake if a higher rack position in the oven

*) Increase the sugar content of the dough to 2% and bake on an elevated platform such as a screen

*) Is the flour malted? If not, you might add 0.25% diastatic malt, or see "sugar" above.

*) Brush the entire top of the pizza skin with oil (olive oil) before dressing

*) Make sure the cheese is cold, right out of the fridge when you use it

*) Try different brands of Mozzarella cheese

*) In most cases where there are issues in getting the top of the pizza to color up the cause is low oven/baking temperature.

Newbie Topics / Re: bottom not fully browning, crust not at all

G;

Your finished pH of the crust is about right. Have you tried making the dough skin a little thicker? In going back and looking at your photos, it appears that you might

be using a rolling pin to shape the dough as indicated by the knife edge on the round pizza (this happens when the pin is allowed to roll off of the dough, thus creating a tapered edge that is overly thin). The combination of a rolling pin or sheeter and a light dough weight, creating a very thin dough skin can result in a dressed dough that can be difficult to get the bottom to brown properly. Another option to look at is to form the dough skin, and allow it to proof/rise for about 20-minutes before you dress and bake it. By doing this you will allow the dough to gas up a little, becoming less dense, and creating a better heat break, so the bottom heat is not as easily conducted through the dough/crust where it is absorbed and dissipated as steam by the liquids on top of the pizza, with an effective heat break the bottom of the dough can reach a sufficiently high surface temperature to begin the browning reaction.

Newbie Topics / Re: bottom not fully browning, crust not at all

Bill;

I'm going to guess that what you are seeing is a short or no-time dough. This is a dough made with little fermentation, thus it has little, or no/poor flavor. I'm betting that the "dead yeast" he is talking about is the dead yeast additive (actually glutathione) available from many yeast suppliers, that is used in the same manner as L-cysteine is, that is to impart the soft, extensible handling properties that fermentation imparts to the dough when the fermentation time is short or nonexistent. We typically use this in what are referred to as "emergency doughs". These are doughs that are designed to be ready for use in a very SHORT period of time after mixing, typically, in under an hour. They are used in pizzerias only under extenuating circumstances, such as when they run out of dough, or they come into the store in the morning only to find that the cooler has been down during the night and all of their dough has been lost, so they make emergency doughs during the day to limp by on until they can get back into using their regular dough again. Like you said, it ain't the greatest pizza in town.

Dough Clinic / Re: Local Pizza

Barry;

Galaxy Nutritional Foods, Orlando, Florida has a cholesterol free cheese product (tofu based) that is engineered to replace Mozzarella cheese. It works pretty well by itself, but where it really shines is in making a 50% reduced cholesterol cheese topping. We blend it 50/50 with a part skim Mozzarella cheese and most people don't even realize what they are eating. The Galaxy cheese products are sold at many supermarkets, or you might contact them directly to find out where it is sold in your area. I don't know if they sell direct to the public or not, but if you can find a store selling their products, you might be able to get them to special order some for you, freeze it and use as needed.

Pizza Cheese / Re: I know this is heresy, but I'm looking for the best part-skim mozz

We use wood prep peels all the time, and never really experience any problems with the dough sticking. The secret is in using a good peel dust. My own personal favorite is equal parts of flour, fine cornmeal, and semolina flour. I don't like straight flour because if it gets damp it will cause the dough skin to stick like glue. Both the corn meal and semolina flour act like little ball bearings under the dough skin to help it slide off of the peel. If you're into it, try using wheat bran as a peel dust too. It works great since it doesn't absorb moisture well at all and is just the ticket if you're going to be letting the dressed pizza sit around for any length of time on the prep peel.

[Prep Equipment / Re: Pizza Peels](#)

I'm with Norma on this one. The temptation is to use low absorption since the dough handles so well with lower absorption, it is the higher dough absorption that softens the dough allowing it to more easily, and fully expand (oven spring) during those first few seconds in the oven.

[Dough Clinic / Re: Dense crust... I don't want dense crust...](#)

Benji;

All things being equal, in the U.S. it is the protein content of the flour that will have the greatest influence on the absorption properties of the flour. The higher the protein content, the higher the dough absorption (in most cases). When it comes to an International flour, of flour in other countries, damaged starch content is typically higher than it is here in the U.S., so in that case, the damaged starch content will have, by far, the greatest impact upon the flour/dough absorption properties.

[Dough Clinic / Re: Hydration with AP Flour vs KABF](#)

You might have been using too much. We also see this problem with commercial pizza ovens (deck types). During baking the veggies release water and you end up with a "swamp pizza". The air impingement ovens commonly used in many pizzerias direct a large volume of air onto the top of the pizza and in doing so exhibit excellent moisture management characteristics (sort of like passing a hair dryer over the pizza during baking). When you don't have much airflow over the top of the pizza it is difficult to manage this moisture. You might try finishing the pizza in a higher rack position so the pizza is exposed to more top heat to better evaporate the excess moisture. Blanching the veggies also helps, but destroys a lot of the texture at the same time. You might also look at how you are slicing the veggies too. Larger pieces are not as prone to moisture loss during baking as smaller pieces are.

[Pizza Toppings / Re: fresh veggies and wet pizza](#)

G;

If you get your water from a municipal water supply it might be a little on the alkali side which would both slow fermentation (yeast is an acid loving organism) and induce crust color development (technically speaking), so I would doubt that your water is the issue. If you get your water from your own well, all bets are off, but even then, most issues revolve around alkalinity, so again, I would not be overly suspect of the water. There is a possibility that you are stretching the dough skin too thin. This would allow the heat from the stone to pass right on through the dough to be dissipated by the moisture in the toppings. Have you ever tried to solder a copper pipe with even a trace of water in it? Can't be done with a propane torch. The same thing can happen with your dough if you stretch it too thin. Try leaving the dough a little thicker. For a test, try to leave the dough about 3/16-inch thick, then cover it and let it rest for 15-minutes before you proceed with dressing the dough and baking it. The thicker dough and the rest time will make for a more porous crumb structure in the dough which will create a better heat break, allowing the dough to get hot enough to brown during baking if this is the problem.

[Newbie Topics / Re: bottom not fully browning, crust not at all](#)

Maybe its time to begin looking at the dough itself? The way the dough is made can/will have an influence on the way it bakes and more specifically, browns. Remember, acid (low pH) inhibits the browning reaction. Fermentation produces

acids as a byproduct, so as the dough ferments, it becomes more acid. Have you ever noticed how white a sourdough bread or roll is? Acidity. Is there a possibility that you have over fermented your dough? A good way to find out is to look at your dough management procedure (everything that happens to the dough between mixing and baking) but will also include the use of a sponge, poolish, starter or sour). High dough temperature will also greatly increase the rate of fermentation (80F is a good starting point for dough temperature). If you want to measure the pH of your dough as it is ready for the oven, go to the drug store and buy some litmus paper for use in the 4 to 5 pH range. Then take a couple ounces of your dough and put it into a blender with a cup, or s, of distilled water. Puree well, pour off into a clean glass and allow to stand for 3 to 5-minutes, decant off some of the cloudy water from beneath the sludge floating on top into a shot glass, dip the litmus paper into the liquid in the shot glass and compare the color to the color guide provided with the litmus paper and this will provide you with the pH of your dough. You should be looking for something not any lower than 4.2. If the pH is lower than 4.2 you are in the realm of a sourdough and will need much higher temperatures to bake the dough to the color you want. A good pH to shoot for is around 4.5 to 5.0 for your application.

Newbie Topics / Re: bottom not fully browning, crust not at all

C4;

I did a quick Google search and came up with Harvic Mfg. Corp. 760 St. Anns Ave. New York 56, N.Y. (if did not provide a postal zip code). It looks like they also sell their ovens under a ETCO Brand name.

Pizza Ovens / Re: Help with older oven

Tory;

You might check with Hobart to see if they have a replacement reverse spiral design dough hook for your mixer. We have the Hobart N-50 (5-quart) mixers which are essentially an industrial version of your mixer and they have the reverse spiral dough hook option available for that mixer, but I don't know if the agitator shaft is the same diameter of not. Something to look into if you're interested.

Dough Clinic / Re: caputo 00 flour resulted in more of a 'bready' crust

Tory;

When the dough just grabs onto the hook and goes for a free ride around the bowl this is an indication of poor hook design (what we call a "J" hook). The newer hook designs are what are referred to as a reverse spiral design. This hook design pushes the dough off of the hook and into the bottom of the bowl for much better mixing action. In some cases you can improve the mixing action of a "J" hook by increasing the dough size, or increasing the mixing speed. Just be careful so as not to over load your mixer. With the hook issue I doubt that you are over mixing the dough, so I would look at increasing the total dough absorption to achieve a softer dough which, should open up better during baking to achieve the open crumb structure you're looking for.

Dough Clinic / Re: caputo 00 flour resulted in more of a 'bready' crust

Mike;

To season your pan(s) turn upside down on a cookie sheet or piece of foil in the oven to catch any drips. Lightly coat the OUTSIDE of the pan with plain salad oil, and place in a preheated oven at 425F for about 30-minutes. DO NOT season your pans at temperatures above 435F as this is about the flash point of most oils, and you increase the risk of an oven fire (really exciting when you open the oven door

and the whole thing goes "POOF" in a bright orange ball). You might repeat the process a couple times and as you continue to use the pans they will continue to darken, this is a good thing. No need to season the inside of the pan, but you will need to apply some oil or shortening to the pan to facilitate release of the baked crust. Lastly, treat your seasoned pan just like a seasoned cast iron skillet.....DO NOT wash it, instead, just wipe it out after each use. If you ever soak it in water you can expect the seasoning to begin peeling off like a bad sun burn, then you will need to strip all the seasoning off of the pan and start all over again. Almost forgot, season your pans when you can open a window if at all possible as the process can get a bit smoky.

Newbie Topics / Re: My First Pizza - in progress - LOTS of Newbie Questions...

For homemade crust the yeast level is quite high. I use 1-packet of IDY to 3.5-cups of flour. Excessive yeast can result in the dough burning out (over fermenting), the result is a dough that fails to rise properly, is overly tender (tears easily) and doesn't color up well during baking due to the excessive acids formed during fermentation and sugar consumed by the yeast in making those acids. Watch your dough temperature too, you will probably want it to be in the high 70's to low 80's for the way you are handling the dough.

Newbie Topics / Re: Looking for dough advice

I'm guessing that your dough may not have had a sufficiently high absorption. The use of high dough absorption promotes good oven spring and a very light/open crumb structure. If you used a mixer to mix your dough, you might have also over mixed the dough. For best results you should only mix the dough until it takes on a smooth appearance. Save the full gluten development for the bread doughs.

Dough Clinic / Re: caputo 00 flour resulted in more of a 'bready' crust

GU;

I don't have it as a recipe but I do have it as a formula given in bakers percent.

Flour: Very strong/high gluten 100%

Salt: 2%

Sugar: 4%

Instant dry yeast: 1%

Oil/shortening: 5%

Water: (70F) 56%

Mix the dough just until it takes on a smooth appearance, then divide into desired weight pieces (about 16-ounces for a 12-inch pizza), form into a ball, wipe with oil and place into a bread bag, twist the open end into a pony tail to close and tuck the pony tail under the dough ball as you place it into the fridge. Allow the dough to remain in the fridge for 24-hours, then remove and allow the dough to rest at room temperature for 2.5-hours, carefully open the dough ball using your hands or a rolling pin to just fit the pan. Put about 1-ounce of salad or peanut oil in a dark colored, deep-dish pizza pan, then place the dough into the pan. Set aside and allow to rest at room temperature (covered) for about an hour, using your fingers in the pan, reform the dough to fit the pan bottom diameter, set aside again to rise a second time and form again. The dough should stay at the full pan diameter after you stretch it this time. Allow the dough to rest for 30-minutes and take it to the fridge for storage for at least 4-hours or overnight. Dress the dough with sauce and desired toppings, and bake at 450F. I normally start the pizza out in a lower rack in the oven for the first 10-minutes of baking, then move it to middle or higher rack

position to finish baking. The total baking time will be around 20-minutes. The resulting crust is very light, has a very open crumb structure and is as tender eating as cotton candy.

[**New Forum Members / Re: jets pizza**](#)

Diza;

The dough docker is used to help control bubbling and blistering of the crust during baking. A correct dough docker should have blunt pins (looking something like a cowboy's spurs). The way it works is to pinch the dough together, not perforate it. If you look at a saltine cracker, or club cracker you can easily see the results of using a dough docker (note that the holes are closed by a thin membrane of dough on one side).

[**Stones/tiles/steel, Pans & Accessories / Re: The Spikey Roller thingamajigger?**](#)

K;

Yes, the dough does increase in temperature to the extent of approximately 1F per hour due to heat of metabolism, BUT as the heat moves to the outer portion of the dough it is dissipated to a great extent. That's how the cooler works. Your IR thermometer is only measuring the outside temperature of the dough, if you measure the inside core of the dough you will find a higher temperature, how high will depend upon a number of factors, such as efficiency of the cooler, and dough weight/shape. Keep in mind that your dough will continue to ferment until the actual core dough temperature drops to about 43F, actually, it even continues to ferment, but very slowly at that temperature, but it is considered to be relatively stable for holding purposes. You can see the effect of heat of metabolism by making two doughs, one with yeast, and the other without yeast. Mix them both to the same finished temperature, and scale to the same weight, form into equal size dough balls and place into the cooler next to each other. Measure the internal temperature after 24 or more hours. The dough without the yeast will not be subjected to heating due to yeast metabolism and hence should show a colder temperature than the dough made with yeast. The larger the dough piece, the poorer the heat transfer properties from core to outer edge, hence it loses less heat and continues to ferment at a more rapid pace.

[**General Pizza Making / Re: Major Problems.....**](#)

Keep in mind that working with small batches of dough are a whole different story than working with large batches. Smaller doughs will cool down nicely, and they can be controlled with good efficiency, but larger batches have a mind of their own, or so it sometimes seems. The one thing that is commonly overlooked is the heat of metabolism. Yes, as the dough ferments due to yeast metabolism of nutrients it generates heat to the amount of about 1F per hour. In smaller doughs this heat can be controlled, but with larger doughs it cannot be controlled. This is why pizzerias subdivide their 70 and 80-pound doughs into smaller, 12 to 24-ounce pieces before placing it into the cooler for storage.

[**General Pizza Making / Re: Major Problems.....**](#)

Muaath;

If you are using my cracker dough formula, it calls for adding the yeast to the water in the mixing bowl. While this is usually not a recommended practice, in this application it is absolutely necessary due to the VERY SHORT mixing time. Also, in this application I suggest adding the yeast and salt, then stirring just enough to suspend the yeast in the water IMMEDIATELY followed by adding the

flour and beginning the very short mixing phase. This is the only way to get a decent dispersion of the yeast and salt in view of the short mixing time.

Dough Clinic / Re: hydration rates and cracker doughs

Tony;

The fermentation process doesn't stop when you ball the dough, it will continue to ferment for quite some time. You will get different end product flavors depending upon the temperature at which the dough is fermented, and the time it is allowed to ferment, so if you ferment the dough at room temperature (warm) you will get one flavor, and if you allow the dough to ferment in the fridge you will get a different flavor. The longer you allow the dough to ferment, the more intense/stronger the fermentation flavor will be. Excessive fermentation can result in an acidic or sour taste, but remember, some people like this flavor, so it isn't wrong, it's just different. Experiment to see which you personally like. My preference is to not ferment the dough prior to cold fermenting as the decreased density of the dough can make it more difficult to manage in the fridge as it is more difficult to cool down uniformly, so if I am cold fermenting, I just go directly from the mixer to the dough ball and then straight to the fridge, but this is just me, again, experiment to see what works best for you and what you like. Remember, you can eat your mistakes, so in this case, the trip can be as much fun as the destination. Experiment and learn, but most of all, remember to have fun doing it!

Neapolitan Style / Re: Humidity

Heman;

Your best bet will be to contact the manufacturer and get their directions for removing both the top and bottom finger panels. The outer sleeve is the one that you can see when you look inside of the oven and the actual finger profile is established by the sleeve that fits inside of that panel. You're going to have to pull them off periodically anyways to clean them, so you might just as well begin on that leg of the journey now. DO NOT get the position of the panels or insert sleeves mixed up. They must go back into the same position that they were removed from. A good idea is to lay the panels and sleeves out on the floor or bench top and photograph them with a sign to identify as top or bottom. This way if they should ever get mixed up you can refer back to the photograph for correct installation.

New Forum Members / Re: How to get a cracker-crust!!

Heman;

We need to know a couple of things:

- 1) Are you using a cracker type dough?
- 2) How are you opening the dough into pizza skins?
- 3) How is your oven setup? (top finger profile, bottom finger profile, temperature, bake time)

New Forum Members / Re: How to get a cracker-crust!!

We make it a habit of keeping our sauce no more than 5-days. Because the sauce is made in an environment where yeast is present, yeast contamination is going to be the most common issue and is evidenced by a slight bubbling of the sauce. The natural acidity of the sauce will help to keep things pretty well in check for up to 5-days, but after that you're on your own.

Sauce Ingredients / Re: Uncooked tomato sauce life

Hi Norma;

As always, I'm gardening for pizza again this year. Last year I had a couple of

planters along our south facing drive way and the tomato and pepper plants did just fantastic, so this year I put out much larger planters (calf feed containers) and again went with tomatoes and peppers. They are doing fantastic! The tomatoes have all set with ping pong ball size fruit, and we will be picking the first peppers this weekend. Basil went in from seed so it is just now beginning to come up, but added two more wash tub planters of it, so we should be in for another great crop.

[Sauce Ingredients](#) / [Re: Gardening tomatoes, herbs, and some veggies for 2012](#)

J:

Actually, when you use IDY you are correct that the water temperature should be at 95F, and if using ADY the water temperature should be at 100F, but this is ONLY the temperature of the water in which the yeast is activated in, which is only a small portion of the total water used in the dough. The amount of water used to activate the yeast is typically around 5-times the weight of the yeast, the rest of the water should be tempered to give you the targeted finished dough temperature that you are looking for (typically around 80 to 85F).

[Newbie Topics](#) / [Re: Making small dough batches - importance of dividing the dough](#)

DM;

To get the char on your dough think along the lines of increasing the dough absorption to higher levels, and also probably increasing your baking temperature to something at 600F or higher preferably.

[Dough Clinic](#) / [Re: Antimo Caputo Italian Superfine "00" Farina Flour](#)

CLG;

The thin (incredibly thin) center section of your dough skin was the reason why it didn't bake properly or develop the char that you were looking for. It was so thin that the heat was passing right through the dough and being dissipated in the sauce and toppings on top of it. If you leave the center section a little thicker it will not allow the heat to pass on through, hence it will get sufficiently hot to bake properly and develop the char that you are looking for.

[Dough Clinic](#) / [Re: GLUTEN NEVER DEVELOPS](#)

CLG;

Remember when your dough got so stiff that you couldn't do anything with it? That was due to gluten development. You might try just adding more water to the dough to soften it to the point where it can be kneaded more easily, or you can do as I do and let the microbes do all the work for you. Just put the dough into a suitably sized container, lightly cover it with a piece of plastic to prevent drying, and allow the dough to ferment for 5 or 6-hours, after which you should find the dough much more manageable. Or you can also put the dough up in smaller pieces, say 12-ounce pieces, lightly oil and place into individual plastic bags (do not seal tightly, but instead, twist the open end to form a pony tail and tuck the tail under the dough ball as you place it into the fridge), allow the dough to slowly ferment in the fridge (cold ferment) for 18 to 24-hours, then turn out onto a floured bench or counter top and begin shaping. This is called biochemical gluten development.

[Dough Clinic](#) / [Re: GLUTEN NEVER DEVELOPS](#)

A lot of people like the shredded over diced because of the appearance of the melted cheese. The diced seems more often than not to just melt as a blob, where as the shredded form has some appearance to it and covers the pie better, but for a

true artisan appearance, you will probably want to go with torn or peeled cheese since the inconsistency of the pieces provide part of the artisan appearance. Provalone is higher in butter fat than Mozzarella so it Will have a richer flavor. Even the best Mozzarella is somewhat bland in flavor, this is why I personally like to add a little Parmesan and Romano to the Mozzarella.

The big differences in Mozzarella are in terms of melt, browning, and oiling out. The best ones don't brown very much, they exhibit good melt properties, and they resist oiling out during baking.

Pizza Cheese / Re: Grande:Not Blown Away Just Yet

Or, how about just looking for a used "off brand" mixer like a Thunderbird? Thunderbird mixers are very good mixers, but because they are an "off" brand (everyone looks for Hobart) they can be had a lot cheaper. A couple of years ago I saw a brand new 80-quart Thunderbird mixer, still bolted to the delivery pallet, with hook, flat beater, and 80-quart bowl sell for \$2,200.00. There are some 120 volt 40-quart mixers out there too, and I would advise you to stay away from them unless all you plan on mixing is pizza sauce. These mixers will require either 208 or 220 volts. And don't forget about the Hobart VCM (vertical cutter mixer). This is also an excellent mixer that is well suited to mixing dough but is typically off the radar screen so prices can be pretty reasonable when you find one.

Prep Equipment / Re: Need ideas for cheap commercial-scale mixer

Remember, every starter, depending upon the microflora present in the starter has a specific temperature that it wants to be started at for correct initial bacteria propagation. Always follow the manufacturer's recommendations for the best results.

Starters/Sponges / Re: Newb starter question - keeping starter warm

Moose;

When I use dough pans like that I lightly oil the pan, then drop in the dough ball, and lightly oil the top of the dough ball. I place them in the fridge uncovered for about 90-minutes to allow the dough to cool uniformly. This prevents the formation of condensation inside of the pan. Then cover and kiss it good night. When you're ready to use the dough just remove it from the fridge, leaving it covered, and let it set at room temperature for about 90-minutes (some experimenting will be necessary to find out what works best for you), then turn the dough out of the pan into a bowl of flour and begin opening the dough ball into a pizza skin for dressing. Plain old plastic bread bags are a good alternative to the metal dough cans. The only down side to then is that they don't stack well.

Dough Clinic / Re: Metal proofing pans?

I make apple pies every year during the Holidays. Since apples are loaded with pectin, you really don't need to put any starch into the filling. My filling consists only of sliced apples, sugar, about an inch off of a stick of butter, cinnamon and a little nutmeg then a cap of Real Lemon poured over the top of the filling. Be sure to mound the filling well above the top of the rim as the apples will cook down, and if you really want flavor, don't peel the apples. I then top it off with a streusel topping and bake at 375F until golden brown, cool and serve. For a variation I make raisin apple pie too. I just put a good handfull of raisins in a small bowl, rinse with cold water, then pour off all of the excess water, add two capfulls of vanilla flavor and stir in. Cover and let hydrate for several hours or over night, add to the apples as you are filling the pie shell.

Off-Topic Foods / Re: Apple Pie

Khen;

In a nut shell, here is how it works. First off, everything must be WEIGHED, it doesn't work with volumetric portions. Remember, flour is ALWAYS equal to 100%. To find ingredient weights:

Using your calculator, enter the weight of flour you want to use. Remember that the weight of the ingredients will be shown in the same weight units as the flour weight is expressed in (pounds, ounces, grams, kilograms, etc.)

then press X and enter the percent given for the ingredient weight you want, now press the "%" key and read the answer in the display window.

Example: flour weight selected: 32-ounces. Ingredient percent: 1.75%

32 X 1.75 (press the "%" key) and read 0.56-ounce in the display window. Do this for each ingredient and you have the weights for each ingredient.

To convert an existing formula to bakers percent:

Divide the WEIGHT of each ingredient by the weight of the flour and multiply by 100. This will put each ingredient into bakers percent.

Note: A recipe is based on volumetric portions (cups, teaspoons, etc.) and a formula is based on weight measures.

To convert a recipe to a formula, portion out each ingredient three times and then weigh each of the portions, add them up and divide by 3, this will give you the average ingredient weight for each individual ingredient in your recipe, now just divide the weight of each individual ingredient by the weight of the flour and multiply by 100 to put the weights into bakers percent.

Welcome!

Have fun exploring the wonderful world of PIZZA!

Newbie Topics / Re: Understanding formulas

On that fancy mixer in question, it looked like a spiral hook in one of their pictures. With a hook of this type the dough will not climb up the hook, instead, it will be constantly be pushed down toward the bottom of the bowl. As for mixing the dough, a pizza dough only needs to be mixed to a point where it has a smooth, satiny appearance. Mixing beyond this is not necessary or desirable unless you're looking for a crumb structure that more closely resembles bread than pizza.

Prep Equipment / Re: Mixers

While the Grande cheese is noted for its flavor, its biggest asset is the fact that it resists oiling out so well. This is well recognized in the industry, and because they have not patented their "secret" process for making their Mozzarella, it has not been well replicated by other manufacturers.

Pizza Cheese / Re: Grande:Not Blown Away Just Yet

Go to your local home improvement store and pick up a bottle of granite cleaner. You put this stuff on to draw out grease and stains from granite, and it just might work on your stone too.

Alcohol can also be used to remove oil, but it will take quite some time to draw it all out.

Stones/tiles/steel, Pans & Accessories / Re: Wife put cookies on pizza stone to cool now stone is smoke bomb

One trick that we use to "season" the stones in a new oven is to apply a light coating of corn meal to the deck/stone surface and then allow this to "bake" until the corn meal begins to brown, then broom the corn meal out of the oven and you're set to go. This is even recommended by some of the commercial deck oven

manufacturers. You do NOT want to apply oil to the stone like you would if seasoning a pan.

Stones/tiles/steel, Pans & Accessories / Re: we need s sticky for stones!

Looks like a pretty neat mixer, but note the power requirements at 230V., also you should know the Hz cycle to make sure it is compatible with U.S. power. Another option is the Hobart A-200 series mixers (110 V.). They are expensive new, but they are easily found at sales and auctions.

Prep Equipment / Re: Mixers

Paperboy;

Those metal bench scrapers can be very hard on the plastic dough boxes, better to use the plastic scrapers. You can get rigid ones from WRH or you can get the cheap flexible ones from just about any flour distributor as they give them away with their name on them. Be kind to your dough boxes and they will last forever.

Prep Equipment / Re: Pizza dough boxes

Crowbar:

Convection ovens are possibly the poorest type of oven for baking pizzas in. The main problem has to do with the bottom not getting done and the top getting over done. If you don't mind the extra work, you could tent the top of the pizzas with a piece of foil for a good portion of the baking time, until the bottom has a chance to bake, then uncover the top and finish baking. You will need to experiment to find out just how long to tent. Another option is to put some stones into the oven, but keep in mind that this disrupts the convection airflow so the baking of other items will most likely be affected. The stones would allow you to get a better/faster bottom bake. You could also make par-baked crusts, then dress and bake to the order. In a convection oven, by the time the top is finished baking, the bottom will be sufficiently reheated for serving. Experiment with this one to see if you like it first, not everyone does, but remember you options are few.

Can you install a small counter top air impingement or infrared oven? These are good if you won't have high volume pizza sales, and they don't take up much space at all (think Blodgette, Middleby Marshall, and possibly Lincoln for one of these).

Commercial Ovens / Re: Imperial Convection oven

POO;

With those dough boxes;

1) for any dough weight over 15-ounces, go with a 4 X 5 placement pattern; 14-ounce piece you can go with a 4 X 5 placement pattern and with a 5-ounce dough piece you can go with a 6 X 8 placement pattern.

2) Lightly oil the top of the dough balls after you place them into the box.

3) Immediately take the dough box to the cooler and cross stack them (90 degrees to each other) this allows for uniform cooling of the dough and prevents the condensation you are seeing. As the dough cool more efficiently, it also keeps the dough from growing together. Allow the dough boxes to remain cross stacked for 2.5-hours, then down stack and nest the boxes. And kiss them good night. The dough can be held in the cooler in this manner for up to three days.

4) To use the dough, remove a box of dough, leaving it covered, and allow it to temper AT room temperature for 2-hours, then begin opening the dough balls into pizza skins as needed. The dough will keep at room temperature for up to 3-hours. This is a pretty standard method of dough management in the retail pizza industry. Just about everyone used some variation of it.

Prep Equipment / Re: Pizza dough boxes

JB;

The reason why you don't see electric ovens designed to operate at temperatures above 700F is because if they do they cannot be U.L. Listed. Gas ovens don't have that problem.

Commercial Ovens / Re: Highest Temp Electric Oven? (USA)

P.D.:

My reference shows the Power brand flour at 13.5% protein and Mondako at 12% protein content. It is hard to specifically say what the ideal dough absorption will be as this will be somewhat dependant upon the amount of fermentation the dough receives, but for starters, for a New York style crust I like to use the following:

Mondako Flour: 60 to 62% absorption

Power Flour: 64 to 65% absorption

This should at least get you in the ball park (Fenway?)

Dough Clinic / Re: Suggested hydration rate for Mondako and Power Hi-G

For a really low cost "stone hearth" for your home oven try using unglazed floor tile. They run between 1/4 and 1/2-inch thick and they work great for getting started. Be sure to allow about 20 to 30-minutes for the tile to come up to temperature before putting a dressed pizza skin on it.

Newbie Topics / Re: How do I make better pizza with what I have?

I just bag it all up with things such as tripe, chitlins (chitterlings), black pudding and fig paste.

Chitchat / Re: 6 Ingredients You May Not Want In Your Food

Absolutely right, the yellow coloring makes the finished pizza look more appealing, and the yellow color infers richness, both desirable characteristics. Large wholesale manufacturers have stipulations governing the use of yellow coloring. For the most part, if the product contains eggs they cannot use the coloring, but if it does not contain eggs, they can use it. The reasoning? One egg in 2,000-pounds of dough and 1-gallon of egg shade coloring and it looks like the dough is made with buku whole egg. But if the formula doesn't contain any eggs, then eggs are not on the label, and they are free to use it. Truth of the matter is that it is all but impossible to get the color of egg shade in a dough through the use of whole eggs, whole eggs just don't contribute that much color to the dough.

Chicago Style / Re: First Deep Dish Attempt, Third Pie Ever

You bet!

Next time don't dress the pizza skin on the counter top/bench, instead, get yourself a short handle wood prep peel and place your opened dough skin onto the peel (pre dusted with a little peel dust or corn meal. My favorite peel dust is made from equal parts of regular white flour, corn meal and semolina flour. Everyone seems to have a favorite e for peel dust so don't be afraid to experiment with different materials or blends. Once you have the dough skin dressed on the peel, it is a relatively simple matter to just slide the dressed skin into the oven for baking. You could also try putting the dough skin onto a seasoned pizza screen and baking the pizza about 1/2 way through on the screen, then transferring the pizza off of the screen onto the baking stone to finish baking, this eliminates the mess in the oven of the peel dust.

New Forum Members / Re: Loving pizza making... but ...

One of the problems that you can encounter using a blender to mix the sauce is shearing of the tomato, this results in excessive weeping (watering out) of the tomato portion of the sauce and in general, this is not a good thing. For this reason, a more gentle blending action is desirable when making a sauce. Some may use a planetary mixer with a flat beater, some use just their hands, others use a hand whisk, and still others use nothing but a large spoon. Remember, the idea is to blend, not puree the sauce.

Newbie Topics / Re: sauce blending

Perry;

That sounds very interesting. I'm going to try it on a dessert pizza skin. First brush a regular pizza skin with melted butter, then sprinkle with sugar and cinnamon for flavor, apply the goat milk yogurt, and pieces of fresh fruit. Bake as you would your regular pizzas. We're always looking for lighter options to the cream cheese/Ricotta base that we normally use on dessert pizzas.

Neapolitan Style / Re: Goat Milk Yogurt "Sauce"

Don;

That rest period for the dough to begin fermenting before putting it in the fridge might also be hurting you.

Shop Talk / Re: Best way to warm dough balls quickly

Norma;

All Trumps is my "go to" flour for New York style pizza.

New York Style / Re: the progress of the regular Lehmann dough for market

Peter;

Due to the significantly larger particle size for the semolina flour, its rate of hydration is a lot slower than that of the more finely milled durum flour. Semolina flour acts a lot more like whole-wheat flour in that it requires a longer time to fully hydrate. Failure to fully hydrate the dough will result in a very tight, elastic dough that can be difficult to work with.

New York Style / Re: the progress of the regular Lehmann dough for market

Don;

I agree with Peter, I also think the dough temperature is too high. Look for a finished, mixed, dough temperature of 75 to 80F, and be sure to take the dough directly from mixer to the counter top for portioning, and then directly to the fridge. If you drop the yeast level too far you run the risk of the dough not rising sufficiently during baking, especially under the center portion of the pizza, the result can be a gum line just below the sauce.

Shop Talk / Re: Best way to warm dough balls quickly

Tim;

Try "decking" the pizza. This is where the pizza is removed from the screen during the last minute or so of baking and finished right on the deck. It helps immensely to improve the bottom bake.

New York Style / Re: Need help with Tom Lehman's NY style pizza

Lookin' good!!!!

Neapolitan Style / Re: 10 hour dough

All of the above, plus, remember that allowing the dough to rise for even an hour

before putting it in the cooler dramatically reduces the ability of the fridge to cool the dough (dough is less dense, making it a better insulator and more difficult to effectively cool), plus if you put the dough in a covered bowl in the fridge, you were again insulating the dough from the cold of the fridge and again reducing the ability of the fridge to cool the dough. Try leaving the lid off of the bowl for about 90-minutes after you put the dough into the fridge, then cover it and kiss it good night. To use the dough on the following day, remove the dough from the fridge, leaving it in the covered bowl, allow to temper AT room temperature for about 2-hours, then turn out onto a floured surface and begin opening the dough into a pizza skin.

Dough Clinic / Re: deflated dough?

BY;

If you're having a problem getting the dough to cool down due to the use of a reach in cooler, or an under performing cooler (insufficient capacity), adjust the temperature of the water that you add to the dough to give you a finished (mixed) dough temperature in the 75 to 80F range, probably favoring the 75F side. You might need to lower the water temperature by as much as 10F to accomplish this. Just make sure your cooler is operating at 38F or lower, but not lower than 34F to stay on the good side of your local health department.

Dough Clinic / Re: New Pizza Shop

Dan;

What you have is what we call a composit peel. These are better than a metal peel, but not as good as a real wood peel when it comes to dough release properties.

American Metalcraft www.amnow.com> has some very good wood peels at a reasonable price. They show a 12 X 13" blade X 22" long @\$22.60 each (Item # 2212). Take a look at this and then check out a local restaurant supply house or kitchen store to see if you can pick one up locally. The peel dust that I use is made from equal parts of regular flour, fine grind corn meal, and semolina flour. Combined with the wood peel, it works like a champ.

Prep Equipment / Re: Pizza Peels

Norma;

Both durum and semolina flours are typically, but not always milled from durum wheat. Their main application is in the production of pasta. Durum flour is indeed of a finer consistency than semolina flour which is milled differently than durum flour and has a coarser texture (larger particle size). The gluten from durum wheat is somewhat different from the gluten of regular hard red spring and winter wheat varieties in that it is much more elastic/tight. If you buy pasta made using a durum wheat flour and one made from a hard wheat flour you will readily see the difference as the pasta made from the hard wheat flour has a softer, slightly gummy texture, while that made from the durum wheat has a firm texture. By the way, you can readily tell the two apart at the supermarket without even needing to read the label, the durum wheat pasta will be a light creamy, almost yellow color, while that made from a hard red wheat flour will have a dark, almost dirty/dingy color. It typically sells for a lower price too.

It looks like you have access to General Mills Flours. Here are some typical protein numbers that might be of interest to you for the GM flours.

Rex Royal: 12.4%; Washburn's: 12.6%; Full Strength: 12.6%; Superlative: 12.6%; Hi Power: 13%; Remarkable: 13.6%; All Trumps: 14.2%; WINTER WHEAT FLOURS: King Wheat: 11.1%; Doughbuilder: 11.1%; GM-44: 11.1%; Pollyanna (Untreated) 10.5%; Harvest King: 12%; Ben Hur (Unbleached) 12%; Semolina #1

(Enriched): 12.2%; Extra Fancy Durum: 12.2%

New York Style / Re: the progress of the regular Lehmann dough for market

To measure the pH (acidity) of a sour all you need is some Litmus Paper available from your local drug store and a bottle of distilled water. I use a small plastic glass (6-ounce capacity) and put a couple tablespoons of sour into the glass, then I put an equal amount of distilled water into the cup and stir well, let it stand for a minute, then carefully decant (pour) off some of the liquid below into a shot glass, dip the Litmus Paper into the liquid and compare the color to that on the chart provided with the roll of paper to determine the pH. You will want to get paper that will read in the 3.4 to 4.8 pH range.

Dough Ingredients / Re: Flour bag says Don't Eat Raw Dough or Batter - Why not?

Sourdough starters, like fermented sponges or fermented straight doughs are relatively safe due to their low pH (high acidity). The only cautionary word about starters, especially when developing a new one, is that you really don't know what you have growing in it. Typically, it will be some strain of lactobacillus, but there are no guarantees. While the acidity will protect a mature starter, it is entirely possible to develop aflatoxins from an unwanted fungus, or spore forming bacteria (clostridium) and this is where the potential for problems arises. While this would exist for any bread making process, not just a sourdough. In a sourdough, it is possible for clostridium to produce aflatoxins before the starter becomes sufficiently acidified to control it. Why would you want to taste a raw sour? The proof of the sour is in the flavor it imparts to the baked product.

Dough Ingredients / Re: Flour bag says Don't Eat Raw Dough or Batter - Why not?

Peter;

Spot on.

There is no reasonable way to eliminate possible pathogens from the flour without affecting the protein quality. When used in baby foods, and other sensitive foods, the flour is heat treated which affects the protein's gluten forming quality, but still allows the starch to function as a binder. Most flour is perfectly safe, but there is no kill step taken so it cannot be guaranteed to be safe. This is much like the way we should treat shell eggs. Like we always say, better to be safe than sorry, or dead. Somebody one said that if it wasn't for the oven bakers would have poisoned mankind thousands of years ago.

Dough Ingredients / Re: Flour bag says Don't Eat Raw Dough or Batter - Why not?

RC;

Been there, done that. What I now do is to use a regular pizza crust, if I am going to par-bake it I dock it well prior to baking. Melt some unsalted butter, then brush a light coating of the melted butter onto the dough skin, sprinkle on a coating of granulated sugar (experiment to see how sweet you want the base crust to be) followed by a sprinkling of fresh cinnamon, now you can either par-bake or add a mixture of 8-ounces of sour cream, 8-ounces of Ricotta cheese, 2-ounces of sugar, and 1-large whole egg. Blend until smooth and spread onto the unbaked dough skin about 1/8 to 3/16-inch thick, leaving a slight uncovered edge. Apply fresh fruit (apple slices, kiwi, orange, mango, strawberry, blue berry, grapes (sliced in half), or whatever strikes your fancy, and bake as you would your regular pizzas. When still warm, but not hot, apply a drizzle of powdered sugar icing (powdered sugar and

water mixed to a thick, slightly creamy consistency), and serve. This dessert pizza can be served warm, cold, or ala mode. We make it at all of the pizza shows where we have a test kitchen to work from.

Dessert Pizza / Re: Dessert Pizza Failure

Norma:

We did a study on the use of semolina flour in pizza dough a number of years ago. We found that for all practical purposes, 25% substitution was the maximum we could go before the finished crust became excessively tough and chewy. We thought 15% was a good working level. Because the semolina flour has a much larger particle size it is slower to hydrate than regular flour, so care must be taken to ensure the dough is properly hydrated. At first the dough will appear to be wet and sticky, but just like with a whole-grain dough, it will improve as the semolina hydrates. We did not detect an appreciable change in flavor when the semolina flour was used. As to using semolina flour either in part, or in total as a peel dust, because of its slow hydration it works great. I use a blend of equal parts regular flour, semolina flour, and fine corn meal as my "go to" peel dust, and I've never had any problems with the dough skin sticking to the peel if I did my part.

New York Style / Re: the progress of the regular Lehmann dough for market

When tempering refrigerated dough it is only necessary to bring the dough up to 50F. This is only about a 15F increase in temperature before the dough is ready to be opened into a pizza skin. Our labs typically run between 68 and 70F and this takes about 2 to 2.5-hours for dough balls weighing in at 12-ounces or less, and about 3.5-hours for those weighing in at 13 to 22-ounces. A quick check with the thermometer inserted into one of the dough balls will confirm the actual temperature of the dough ball. In addition to being warmed from an external heat source, the dough is also being warmed through heat of metabolism by the yeast at the rate of about 1F per hour.

New York Style / Re: How long out of refrigerator before cooking?

Osipov:

At the temperature you're baking at the specific brand of cheese that you are using in browning excessively, so when you bake the pizza right on the stone you are getting the bottom done faster than you would if using a screen. This means that the top and bottom of the pizza are being baked more closely together. With the screen, the baking time will be longer, but the cheese can't be subjected to a longer bake or it will burn. Increasing the baking temperature will only result in the cheese burning faster, so the solution is, when baking on a screen you must actually reduce the baking temperature to something in the 500F/260C range and bake the pizza for a longer time. If you find that the cheese still gets too dark, you might need to change to a different cheese manufacturer.

New York Style / Re: Need help with Tom Lehman's NY style pizza

Ronchonou:

For a shop operation I would suggest the following dough formulation:

Flour: 12 to 13% protein content (General Mills Harvest Kin or Superlative) 100%

Salt: 1.75%

Compressed Yeast: 1%

Oil: 1%

Water: (65F) 60%

Procedure: Put water in mixing bowl, add salt, then flour and yeast. Mix 2-minutes at low speed, add the oil and mix 1 more minute at low speed. Finish mixing at

medium speed for about 8-minutes, or first speed for 12-minutes. Target finished dough temperature is 80 to 85F. Take dough directly to the bench for scaling and balling. Place dough balls into plastic dough boxes and wipe the top of the dough balls with salad oil. Cross stack in the cooler for 2-hours, then down stack and nest the dough boxes. The dough will be ready to begin using after about 18-hours in the cooler. The unused dough can be held in the cooler for up to 3-days, but is at it's best on the second day. To use the dough, remove a quantity from the cooler and allow to temper AT room temperature for 2 to 2.5-hours, then begin opening the dough balls into skins for immediate use. The dough will remain good to use for 3-hours after you begin open the balls into skins. Any unused dough balls can be opened and placed onto screens and placed on a wire tree rack in the cooler (uncovered for 30-minutes) then cover with a rack cover or plastic bag. Use these pre-opened dough skins as soon as possible. To use the pre-opened skins, bring the rack out of the cooler and allow to temper AT room temperature for 30-minutes, remove the skin from the screen and resize, place onto peel with a little peel dust and dress to the order, then bake as normal. Using this method you should never need to toss out any dough balls, and you will have a consistent product over the life of the dough balls.

The amount of compressed yeast to use for 25Kg. of flour is 1% in this application, that calculates out to 250-grams.

Dough Ingredients / Re: Question about Fresh Yeast

For a New York style pizza you're going to want to use a very high protein content flour. Look for something in the 13 to 14% protein range. For N.Y style pizzas I normally use a dough factor of 0.10619 which is to say that I use 0.10619-ounces of dough per square inch of surface area. This translates out to 16.35-ounces for a 14-inch pizza ($154 \times 0.10619 = 16.35$ -ounces) so you might want to consider increasing the dough weight by a couple ounces. The additional dough may help you achieve the porosity you want while the high protein content of the flour should provide the chewiness. Be careful when mixing the dough, all you want is to have the dough mixed until it comes smooth, mixing beyond this will only contribute more of a bread like crumb structure to the finished crust. My rule when mixing pizza dough is to always err on the side of under mixing the dough.

New York Style / Re: First attempt - Good except too soft, not enough chew

Peter;

Beggar's Pizza is another Chicago chain that uses Egg Shade in their dough, as do a number of independents. You need to watch with the amount of "yellow coloring" used as they are not all alike. If a dough formula calls for X amount of Egg Shade (a commercial product) a different coloring material might require a different amount to achieve the same color impact upon the dough. You can Google "Egg Shade coloring" to get more information on it.

Chicago Style / Re: First Deep Dish Attempt, Third Pie Ever

RcBaughn;

Did you use raw sausage on your deep-dish pizza? In Chicago the sausage is buried down under the sauce and it is applied as raw sausage. This gives the finished pizza a very unique flavor that you just can't get using pre-cooked sausage. Going this route, you may want to bake the pizza a little longer, about 45-minutes total baking time. If necessary, use a screen or something under the pan to prevent burning the bottom with the longer baking time. Also, try adding some "egg shade" a type of yellow food coloring to your dough. This is what they do in Chicago to give the dough the unique yellow color.

[Chicago Style / Re: First Deep Dish Attempt, Third Pie Ever](#)

Cheese first then sauce is also practiced in Chicago. One of the downsides to this assembly method is that if the cheese is applied very last, it covers everything, good for holding everything together, but if you tend to be a little heavy handed with the vegetable toppings, the cheese will trap a lot of the moisture under it, thus making for a softer finished crust. This isn't too bad with a deep-dish type of pizza, but it can be a real bummer on a thin crust unless you are in Chicago where no one expects a thin crust pizza to have a crispy bottom anyways.

[Newbie Topics / Re: Sauce first or cheese first](#)

TomN;

One of my personal favorites is to use the 74/40 tomato filets from Stanislaus. Just drain them and apply just as they are. Prior to application of the tomato filets I like to add a very light application of garlic infused olive oil, then add a smattering of diced garlic, followed by several fresh basil leaves, after that, the tomato filets. I don't go for complete coverage, but rather something closer to 60%, then add your favorite cheese or cheese blend (mine id Mozzarella and Parmesan), then finish by dressing to the order. This provides a great natural, fresh tomato taste along with some texture that sauce doesn't provide.

My other personal favorite is to use slices of fresh, whole ripe tomato to replace the tomato filets. Leave the skin on the tomato for the extra flavor they bring to the pizza. No dried herbs please. Either of these makes a truly outstanding "sauce" if you like fresh tomato flavor and texture.

[Sauce Ingredients / Re: Pizzaiolo Pizza Sauce](#)

Matthew;

Don't worry about the slightly slower mixing speed. Spiral mixers have an entirely different mixing action than that of a planetary mixer. Spiral mixers are notorious for being able to efficiently mix doughs of different sized much better than a planetary mixer can. Without knowing how efficiently your old mixer was mixing the dough (did the dough climb up on the hook, did the dough ball just go for a ride on the dough hook, did the dough ball just seem to get batted around by the dough hook rather than driving through it?) these are all indications of less than desirable mixing action. You shouldn't see any of these issues with the spiral mixer. When you mix your first dough, just mix it until it takes on a smooth, satiny appearance, that's all the mixing a pizza dough needs. Bread doughs, on the other hand, should be mixed to full gluten development to achieve the desired fine, close internal cell structure.

[Prep Equipment / Re: Spiral Mixer](#)

Not to worry about food safety issues, but, depending upon the actual dough formulation, there is a possibility that it might be so acid that the finished crust will have a bit of an acid bite, or the acidity might also inhibit browning of the crust during baking. In some cases this can work to your advantage in that it will force you to bake the pizza longer, thus developing a thicker, heavier, and crispier bottom crust characteristic so long as you can avoid over baking the top of the pizza.

Depending upon the protein content of the flour, the dough might become overly soft and difficult to handle or form into a pizza skin due to the effects of yeast fermentation on the flour proteins. You might hedge your bets a little by brushing the exposed edge of the skins with a little olive oil just before you place them into the oven as this will help them to develop a nice golden crust color during baking. One final note, try not to degas the dough during the forming procedure. A good

way to do this is to open the dough into pizza skins by hand stretching (do not use a rolling pin), as this will retain most of the leavening gas in the dough allowing for a better rise in the oven if the yeast has been damaged or if it has exhausted all of its food supply during the fermentation period.

General Pizza Making / Re: Dough Rising Overnight at Room Temp

I think the newer reverse spiral dough hook is the real solution. We have had the same problems with the dough climbing up on the hook with all of our Hobart mixers from the K5-A to the M-802. The problem is due to hook design not the mixer design. We have replaced all of the straight "dough arms" AKA "J" arm with the reverse spiral design hooks and the problem has ceased. I don't know if Hobart has a reverse spiral design dough arm for all of their smaller consumer mixers or not, but it would be worth an e-mail to find out. If not, the advice from Jackie Tran is spot on.

Dough Clinic / Re: Kneading Issues - Kitchenade w/ Dough Hook

Norma;

Welcome to the wonderful world of scary, sounding, as well as misread ingredients. All are not what some might like us to believe what they are.

Wood pulp, also known as micro crystalline alpha cellulose: Truth is, cellulose is cellulose, if it comes from bran (anyone objecting to eating whole-wheat/whole-grain cereals? Didn't think so. The cellulose in the bran portion of grains (that's where most of the nutrients are stored) is the same as that in wood pulp, is the same as that in grass clippings, like I said, cellulose is cellulose, it don't make no matter where it comes from.

Propylene Glycol does not have a comma after it in this application, it is Propylene glycol monoesters (PGMS), and it is an ester emulsifier in cake batter and whipped toppings, can also be used in bread products as an emulsifier.

TBHQ (Tertiary Butylhydroquinone) is not the same as butane; It is used as an anti oxidant to prevent the development of rancidity in fats and oils.

Maybe that raspberry flavoring made from the anal gland of a beaver isn't the most visually sounding flavor out there, but then you have such things as blood sausage/blood pudding AKA black pudding (ask any Brit about it), or how about chitlin's? (fried intestine), then to you can always Google Dihydrogen Monoxide (DHMO) this nasty stuff is present in most of the foods that we eat, and believe me, it is a real killer, responsible for hundreds if not thousands of deaths every year! I almost died from it when I was a youth of 17.

My advice, don't sweat the little stuff, beware of the sprouts, raw milk, raw eggs, and anything else with the potential to do serious harm to you through unwanted microbial contamination.

Chitchat / Re: 6 Ingredients You May Not Want In Your Food

Thezaman;

After seeing those pictures, I've got a hankerin' to come by your place for a short visit and a few slices of your pizza!

They look great!

Neapolitan Style / Re: 10 hour dough

Scott;

Think about it for a minute....how much moisture is in the wood that is being burned? Probably double didgit, and it can/will vary from lot to lot, if not piece to piece. Now switch over to coal, how much moisture in that lump of coal. For every pound of coal burned you get more BTU's of heat energy than you get from the

same weight of wood, but without putting the moisture into the oven. We see a similar response when comparing gas heat (moist) to electric heat (dry). This might explain what you are seeing.

New York Style / Re: Baking the best pies of my life in a coal oven. Why is it different than wood?

Phytonic;

What kind/type of yeast are you using? From the photo that you provided, it appears that the spots are all about the same size. If flour or fat were the culprit, I would expect to see a more random size pattern formed, but because of the uniformity maybe we need to be looking at the yeast, especially if it is ADY or IDY, and how it is added.

We make a VERY undermixed Chicago cracker type crust that resembles a pie dough rather than a pizza dough (just 45 to 60-seconds of mixing time) In this dough we see a lot of flour lumps but they have a very random size distribution and they are hard when squeezed, and when broken, you can identify the flour, this is why I am leaning away from the flour in this case. However, it might be dried dough pieces from a surface that the dough was scraped off of at some point, just a thought.

Chicago Style / Re: Weird white spots on my deep dish doughball?

LaSera;

Not to worry. You did good.

Just think, a few short years ago bakers percent was like a foreign language to most pizzeria operators and home pizza makers.

Dough Clinic / Re: New Pizza Shop

It sounds like pizza made on a protein enriched crust. Still the same number of calories, if not more, with protein added for "redeeming social value". I too would be interested in seeing the nutritional profile of that pizza. With the new menu nutritional labeling regulations coming down the pike, we may not have to wait very long to see them as they may be mandatory depending upon city/state/Federal regulations.

Shop Talk / Re: Power Pizzeria; Healthier Pizza or Hype?

Can you tell us what your dough formulation/recipe was and how you made it? This might provide some insight into what the problem is.

Chicago Style / Re: Weird white spots on my deep dish doughball?

Mozzarella cheese really doesn't have a very spectacular flavor by itself, the main quality attributes are the way it strings, melts, and lack of oiling out during baking. If you want flavor, you're going to need to blend it with a more flavorful cheese. My own personal favorite is to blend 2-ounces of Parmesan (shredded) with 14-ounces of Grande whole milk Mozzarella (shredded) to make a pound of topping cheese. If you want even more flavor, blend in some Romano into the blend. Now we're talkin' !

Pizza Cheese / Re: Grande:Not Blown Away Just Yet

You could serve the pizza on a heated stone, much like Pizza Hut toyed with many years ago. This is very effective, just remember the old admonishment "Be careful, this is very hot!".

Stones/tiles/steel, Pans & Accessories / Re: eating pizza from wooden dishes?

I would keep the sugar where it presently is if you like the result from that sugar level. The salt and sugar levels are independent from each other. Yes, the 58% is the water absorption level based on the total flour weight. Since you are doing all of your mixing at low speed, it becomes a matter of staging the ingredients in the mixing bowl (order of addition) rather than a change in the dough mixing process. Your total mixing time will remain unchanged. As you are using individual dough containers, You should NOT cover the containers until after they have been in the cooler for at least 2-hours uncovered. This will allow for more even cooling of the dough without the undesirable sweating which you mentioned seeing.

Tom Lehmann/TDD

Dough Clinic / Re: New Pizza Shop

Lindsey;

You will need to check with both state and local health departments to find out what regulations they have in place regarding pizza/pizza by the slice. As a general rule, you will need to hold the pizzas at a minimum of 140F, but if it is allowed to drop below 140F, you may be required to reheat it to a minimum of 160F (this actually means 165F) before serving. In some places the delivery time for pizza is limited to that in which the pizza can be maintained at a minimum of 140F (which actually means 145F). In some places they recognize what is called the 4-hour rule (product may be allowed to remain at a temperature which will support bacterial growth for a total accumulated time not to exceed 4-hours. Unless each pizza has a tag on it, this can be difficult to document, hence the reason why some places don't follow this rule. I believe the 4-hour rule is why New York pizzerias (slice shops) can get away with allowing the slices to sit in a display case without heat while waiting to be sold. Again, be sure to check with state and local health departments for the rules governing your location.

Shop Talk / Re: leaving pizza out/bacteria

I can certainly help you.

Based on what you have provided, here are the changes I suggest.

Reduce the salt level to 1.75% (385-grams)

Increase the dough absorption to 58% (12.76-Kg/Lts.)

Adjust the water temperature to 65F.

Add all of the water to the mixing bowl, then add the flour and other dry ingredients, mix for about 2-minutes at low speed, or just until all of the flour is wet, then add the oil and mix for one more minute at low speed. Finish mixing in your normal manner.

Target finished dough temperature after mixing is 75 to 80F.

Take the dough to the bench for scaling and balling immediately after mixing.

Place dough balls into plastic dough boxes and wipe the top of the dough balls with salad oil.

Immediately take to the cooler and cross stack for 2-hours, then down stack and nest the boxes to prevent drying. The dough will be ready to begin using after 16-hours.

To use the dough, remove a quantity from the cooler, leaving them sealed in the boxes and allow to temper AT room temperature for 2-hours, then begin opening the dough balls into pizza skins for immediate use.

Any dough balls that will not be used within a 3-hour window of time after you begin opening them should be opened and placed onto a baking screen and then stored in a wire tree rack in the cooler (cover with plastic to prevent drying). These will be good to use later in the day. To use, just remove from the cooler and allow to

temper AT room temperature for about 30-minutes, then remove from the screen and restretch if necessary to size, then dress to the order and bake. The dough balls left in the cooler will keep for up to 72-hours.

Tell me something about your oven and baking conditions.

[**Dough Clinic / Re: New Pizza Shop**](#)

C.K.;

I like to use sockeye salmon, grouper, sea bass, halibut, or orange roughy. I don't care to use use the more oily types of fish like king salmon, mackrel, or tuna. That's just my own personal preference though.

[**New Forum Members / Re: Anchovy pizza**](#)

Also, let us know how long you're fermenting the dough after mixing, and what the temperature of the dough is at the conclusion of mixing.

[**Dough Clinic / Re: Dough: Hard and rubbery or floppy. No sweet spot!**](#)

While I am not a fond lover of anchovy pizza, I do enjoy a good seafood pizza. We make them at the NAPICS Show every year and everyone really seems to like them. I begin with a regular dough skin for a thin crust pizza, then apply Alfredo sauce and sprinkle with dried dill weed, red onion slices come next, followed by some fresh tomato slices (I like to cut them in half) then add some fresh fish (raw), I either cut it into pieces about 1/4-inch thick, or tear it into pieces for application, depending upon what appearance I'm liiking for, then apply a very light application of Mozzarella cheese, followed by about 2-ounces of shredded Parmesan cheese (for a 12-inch pizza), bake as you would any other pizza. These are light and crispy and don't have that "fishy" flavor associated with anchovy. I've also made this pizza using popcorn shrimp, or a medley of seafood (fresh fish, clams, shrimp, and scallops). Makes me hungry just thinking about it!

[**New Forum Members / Re: Anchovy pizza**](#)

As beauty is in the eye of the beholder, taste is in the palate of the diner. I always remember the story about a U.S. air base that was closed down in Turkey many years ago. In the emergency shelter they had tons of survival biscuits (high caloric biscuits loaded with fat). As these were at out of date by the time of base closing it was decided to bury the biscuits in a trench. This was done and all was good until the base was turned over to the locals, who, upon gaining access to the base, were curious as to what was buried in that trench so they dug it up and found what they perceived to be a treasure trove of a local delicacy, rancid fat. The local delicacy was essentially rancid yak butter, and evidently those survival biscuits, however rancid they were, became a delicacy to the local palate, and all was good. Not exactly my cup of tea, but who am I to argue?

On a side note: I was living in Chicago when the first woodfired pizzas were introduced there. What a fiasco that was! You see, the locals were not used to that type of pizza so it was perceived to be burnt, and they were sent back to the kitchen with the admonishment "this pizza is burnt!" Then the word went out that "you don't want to eat at a pizzeria that has one of those wood burning ovens, because they burn the pizzas". That really slowed down woodfired pizzas in the Windy City. It's all good now because they are used to it, and know what to expect, but it sure didn't begin that way.

[**Shop Talk / Re: Anyone know any pizzerias which are popular but serving bad pizza?**](#)

Warrax;

You described the type of pizzas that I was referring to in my response. The cracking that you mention is why you will need to experiment a little with your baking stone. The bake to rise type of pizzas are designed specifically to go from freezer to oven. If you experience cracking with your type of frozen pizzas, I would suggest that you experiment with different thawing times. Begin with 15-minutes, and then progress longer in 15-minute increments until the problem no longer exists. When using a pre-made refrigerated dough skin it is usually beneficial to allow the dough skin some time to temper AT room temperature before baking. In this case you can either go by time, typically about 60 to 90-minutes at room temperature, or you can go by temperature. Look for a dough temperature of about 50F/10C before placing it into the oven.

Stones/tiles/steel, Pans & Accessories / Re: Frozen pizza on hot stone?

The only raw dough frozen pizzas that I'm aware of at the supermarket is the bake to rise type. These pizzas are leavened using both yeast and chemical leavening and for the most part they are designed to go directly from freezer to the oven. The package directions for baking should confirm this. As for a refrigerated pizza, there is a deli pizza from the supermarket, typically sold by the pound. These are made on a refrigerated, yeast leavened dough skin. This type of pizza can benefit from being allowed to temper at room temperature for up to about an hour before going into the oven. The other refrigerated pizza is the take and bake type of pizza, like you might get from Papa Murphy's. The dough that these are made from seems to be all over the board. Some are formulated with both yeast and chemical leavening, like the bake to rise pizza mentioned above, while others are made from a dough that is leavened only with yeast. This means that you might need to experiment with the brand of your choosing to see how it bakes the best. If it is from one of the big box pizza chains it can probably go straight from the fridge to the oven, but if it is from an independent pizzeria it might perform better if allowed to temper AT room temperature for a while prior to baking. Also, be sure to watch the bottom of the crust with any of these pizzas as they tend to be formulated with fairly high sugar levels to improve the baking properties in a conventional home oven without a pizza stone. If you get too much browning or burning, you may need to reduce the oven temperature when using your stone.

Stones/tiles/steel, Pans & Accessories / Re: Frozen pizza on hot stone?

Norma;

There are two aspects to using a par-baked crust and getting what you are looking for. The first is to par-bake and then IMMEDIATELY dress the crust and place it back into the oven. The second, and equally as important is not to overbake the crust during the par-baking stage. Some will say that the par-baked crust shouldn't have any color on it at all, while I'm a little more generous and say that it can be tinged with a little light brown, especially on the bottom.

Good luck,

Sicilian Style / Re: Trying a different Sicilian pie tomorrow

Norma;

We make one where we par-bake the dough until it is just set, then remove it from the oven and dress the crust, then put it back into the oven to finish baking. It is an extra step, but it does result in a finished crust that is essentially as flat as a board across the entire diameter. As a side benefit, it seems to dry the crust out a little more than baking it all at one time, resulting in a crispier finished pizza. If nothing else works for you , you might give this a try.

[Sicilian Style / Re: Trying a different Sicilian pie tomorrow](#)

Norma;

It is normal for the crust volume/height to be slightly suppressed where you have sauce. This is an old trick that we use when making par-baked crusts to prevent bubbling. Just lightly sauce the dough skin prior to baking and you can reduce the bubbling issue significantly. This is even greater when you have a heavy sauce application as your pictures suggest. Aside from par-baking the crust to some extent prior to dressing it, or using less sauce, what you are getting looks to be pretty normal. I've never seen a deep-dish pizza that was even across the entire diameter, there is always at least some loss of volume/height just under the sauce. This is one reason why a lot of the big box pizza stores use such a light application of sauce on their deep-dish pizzas. My expression for this is to say that those pizzas were blessed by the Italian sauce man.

Good lookin' pizza!

[Sicilian Style / Re: Trying a different Sicilian pie tomorrow](#)

As a kid growing up in Chicago I had an Aunt and Uncle living up in Minocqua, Wisconsin. They owned a resort up there. As soon as school would let out I'd be on a bus up to Tomahawk, WI where they would pick me up and bring me to the resort. I'd fish for walleye, northernns, muskie, and yellow perch for the next 30-days, then back home to pick up the airline ticket that my grandparents would send me each year to come down to Clearwater, Florida where I would stay with them and use my grandfather's boat to fish Clearwater Bay for about a month. We also owned two party boats and a charter boat, so when they were not booked full I could always be found on one them fishing for grouper. In the bay I would fish for sand sharks, sea trout, pompano, and lady fish, and always did very well. Today, I fish local lakes here in Kansas as well as the Keni River in Alaska, and Boot Lake in northern Minnesota, plus just about any other body of water where I can get a line into. When I'm not fishing, I'm deer hunting or predator hunting, thinking about it or planning a trip, and when I'm not doing that, I'm trying to look like I'm a productive member of society by holding a regular job here at the American Institute of Baking in Manhattan, Kansas. Life is tough, but someone has to do it!

[Chitchat / Re: who likes to fish?](#)

Kinda reminds me of the old, Show Biz Pizza. Great fun and entertainment but fifth rate pizza at best. When our kids were younger they wanted to go there all the time, not for the pizza but for the fun and games. Even with bad pizza the place was always packed.

[Shop Talk / Re: Anyone know any pizzerias which are popular but serving bad pizza?](#)

Norma;

On your formula sheet it shows the malt as being DIASTATIC. This is an active, (enzyme active) malt that should only be used with a non-malted flour, and even then, the recommended use level is only 0.25% of the total flour weight, not 2% as your formula shows. If the malt was non-diastatic you could use it at the 2% level without any problem. High malt levels will always result in a gummy, wet crumb structure, and in some cases it may also inhibit oven spring. My advice is to totally eliminate the diastatic malt form your dough formula.

[Sicilian Style / Re: Trying a different Sicilian pie tomorrow](#)

For one, I would use some of the pesto as a sauce and top with some precooked

pieces of chicken breast, slices of onion, maybe some fresh tomato, garlic, and mushrooms, then finish with some of the fresh Mozzarella, torn or sliced not shredded, then sprinkle on a little shredded or shaved Parmesan...that's making me hungry already.

Newbie Topics / Re: Time sensitive: choosing toppings for three pizzas with these ingredients

Norma;

I like the flavor of the crust as well as the chewiness, and we can't overlook the fresh basil.

I do a lot of work for a baking company, Damascus Bakery just down the street from there on Gold Street.

Enjoy looking at the pictures of their famous customers on the wall while you're there.

Then, you will be able to fully appreciate the fact that you are eating a piece of New York history. There is a pretty nice restaurant over in Battery Park too. I consider New York City the Mecca of both pizza and restaurants. It's just a great food city, I hope you enjoy your visit!

Pizzeria & Restaurant Reviews / Re: i;½A slice of Brooklyn' on the Travel Channel on Wednesday March 7th

Norma;

Grimaldi's aka Patsy's is my all time favorite pizza. Gotta set me recorder to record it so I can see it when I get home (I'm traveling for the next two weeks).

Pizzeria & Restaurant Reviews / Re: i;½A slice of Brooklyn' on the Travel Channel on Wednesday March 7th

Garvey;

Flavor development is a function of fermentation and its byproducts combined with the heat of the oven. You can get some very good flavors using a preferment, but if they are not fermented under refrigeration as your refrigerated dough management procedure calls for, the resulting flavor may be different due to the differences in acids formed (room temperature v/s refrigerated). You will probably want to include as much flour as possible, if not all of the flour in the preferment to retain the protein degradation for digestability. I think you could work out a refrigerated preferment that would meet your needs with just a little experimentation. There is a possibility that you could develop a "running" ferment, aka, Madre De La Masa (mother dough). This would be like a preferment that you could use from on a regular basis, and replenish (refreshen) as you go to retain its vitality (something like a sour). Remember, the journey is as much fun as the destination.

Starters/Sponges / Re: Preferment in place of a long, cold straight ferment?

Because of the greatly abbreviated mixing process, this is one case where I have found it necessary to put the salt as well as the oil into the water, but I am always careful to begin my "dough mixing" process as quickly as possible.

Cracker Style / Re: The Dough Doctor's cracker!!

Peter;

Big Spring is shown on their data sheet as being appropriate for use in making French and Italian breads, as such it should work well in a home, or pizzeria setting for making a New York style pizza dough/crust. It is interesting to note that PFM shows only their whole wheat, Morbread (12% protein), Mondako (12%

protein), and Blendako (11.5% protein) as recommended for thin to medium pizza crust production, and the Big Spring (14.5% protein) for thick pan pizza crust production. All of our research that we have done over the years shows that thick crust and pan pizzas are best made with a flour having from 11.5% protein at the low end to 12%+ at the high end. When a super high protein content flour is used to make thick crust and pan style pizzas there is a potential for the finished crust to become overly tough and chewy if it is not given sufficient fermentation. This was true of Pizza Hut's first departure from thin crust pizzas. Back in the late 60's they introduced a type of pizza appropriately called their Thick and Chewy, and that it was, on both counts!

New Forum Members / Re: Hello from Hesperia, California

Scott;

Please remember that this formula and procedure are for a bio-chemically developed dough, one that has already had a lot of fermentation time. With a bio-chemically developed dough you have a very soft and extensible gluten structure as opposed to a tighter gluten structure that is common with machine mixed doughs. As for the flour, I should have said my selections would be Kyrol or Mondako (the Mondako is the one that is not as high in protein content, but still works well in a home setting). As for putting fresh basil on a pizza (pre-bake) we do it all the time, just make sure it is at the bottom of the pie where it is protected from the oven heat and the aroma can infuse the entire pizza during baking. I don't see the Mozzarella cheese being sold in bricks very often at the supermarket, but I do see fresh Mozzarella sold there quite frequently, so like the sailor says "any port in a storm", it sure beats using the stuff out of a bag. The lower oven temperature by the way works very well with the fresh Mozzarella. If he had indicated that he was in a pizzeria, my advice would have been entirely different, and more true to form, but that was not the case. I did forget to add that a few fresh basil leaves should be applied to the top of the pizza immediately upon removal from the oven.

New Forum Members / Re: Hello from Hesperia, California

Doug;

To get you started, New York style pizza crusts are made with a high protein flour. With the selections you show, I would go with Kyrol or Mondako. They are not quite as high as is typically used in New York, but they should work well for you at home. As for the yeast, go with the SAF red label. The gold label is intended for use in high sugar/low salt applications, and the truth be known, it will work just fine in your cinnamon roll dough too, so you really don't need to have two different bags sitting around. I would experiment a bit with hand mixing. Put the water (75F) in the bowl first, then add the SAF red label which has been pre-hydrated in a couple ounces of warm water (95F) for 10-minutes, followed by the flour and salt. You probably won't need to add any sugar. Using a wood spoon, begin stirring the mix together for a couple minutes, as you gradually add the oil. When the "dough" looks something like wet oatmeal, stop mixing, and cover the bowl with a piece of plastic. Allow the dough to ferment at room temperature for about 2-hours, then turn out onto a floured counter top, and knead just for a minute. Oil the mixing bowl, form the kneaded dough into a ball and place into the mixing bowl. Lightly oil the top of the dough and cover again with the plastic. Allow to rise for 1 to 3-hours more. I like to schedule this with the meal time so meal time is about 45-minutes after the fermentation time. Turn the fermented dough out of the bowl and cut into the desired number of pieces (I normally figure on 2 dough balls for each 3-cups of flour in the recipe). Using minimal handling, roughly form each dough piece into a loose ball and set aside to rest for about 30-minutes (cover if necessary to prevent

drying). Hand stretch or roll each dough ball into a pizza skin about 12-inches in diameter. Brush with olive oil, add some diced garlic and fresh pieces of basil, then add fresh tomato slices (about 1-tomato per pizza) or use drained tomato strips or drained diced tomato for your sauce. Finish with torn pieces of fresh Mozzarella cheese, or your favorite cheese, then finish with an ounce of grated Parmesan cheese and bake on a pizza stone in the center of your oven at 450F until the bottom begins to brown, then move the pizza to a higher rack position without the stone to finish the top of the pizza. Keep in mind that you will probably need to experiment with the baking as all ovens are different. This should get you started.

New Forum Members / Re: Hello from Hesperia, California

Peter;

You are absolutely correct. The gross under mixing of the dough that I outlined produces a finished crust that actually shatters as you bite into it, yes, it is that tender and flaky, and if that isn't enough to satisfy ones crispy tooth, try par-baking the docked dough skin, then dressing it and finishing in the normal manner, it is like having a giant saltine cracker under those toppings (I've been known to boast just a little), but it does produce a pleasantly crispy and tender eating finished crust. The key is not to over mix the dough, it must look something like either a long flake pie dough or a good home made baking powder biscuit dough (that biscuit dough might be just a little over mixed as an example for this application).

Dough Clinic / Re: hydration rates and cracker doughs

John;

Actually, we have found that absorption values of 45 to 50% work better in cracker type doughs than the very low absorptions in the 30 to 40% range. The reason for the low absorption values is to prevent full hydration of the flour, however, we have found that if you make the dough in much the same manner as you would a pie dough you can achieve the same results while having an easier to work with dough. This is what we have found to work best for us;

Put water into the mixing bowl (45 to 50% of the total flour weight), then add the yeast (be sure to suspend the yeast in the water), add salt and sugar (we don't recommend using sugar but do so if you must), now add the oil and immediately add the flour. Mix at low speed for about 90-seconds (I know, it doesn't look like a dough, but trust me). Take the "shaggy" dough to the bench and scale to desired weight (be sure to scale about 2 to 3-ounces heavier than what you want as there will be scrap dough), roughly form the "dough" into pucks as you would for a pie dough, or better yet, place into individual plastic bags, then place into the fridge to ferment overnight. If you made pucks, place them onto a pan and cover with plastic before placing it the fridge. On the following day, remove the dough from the fridge and allow to temper AT room temperature for 2-hours, then turn the dough out of the bag, and place onto a dusted surface, using a rolling pin, sheet the dough out to about the thickness of a quarter. Trim the dough to the desired diameter, dock well, sauce and dress as desired. Pizzas made on these dough skins should be baked on a hearth surface at 500F.

Dough Clinic / Re: hydration rates and cracker doughs

Mark;

If you can find it give it a try. Just remove the individual dough pieces and place them together in a pan, press them together, then flatten to make something that looks like a pizza skin, then top, dress and bake. That's how I've seen it done and it seems to work pretty well for what it is.

Other Types / Re: Mark's -Stir 'n' Roll pizza dough - NO Yeast

Mark;

Your chemically leavened (baking powder) dough reminds me a lot of the first pizzas I ever made using the Chef Boyardee (not sure of the spelling) pizza mix. Yep, tasted a lot like a biscuit with a poor excuse for pizza toppings on it, but considering the time (early 1950's) it was pretty good, and like today, a novel to make at home.

There are still a lot of people who use the refrigerated Pillsbury biscuit dough as a base to make their pizzas on.

Other Types / Re: Mark's -Stir 'n' Roll pizza dough - NO Yeast

I would suggest deleting the oil, taking the water up to 70% and increasing the IDY to 0.5%. That should go a long ways toward opening the crumb structure. BTW, that is not a bad looking pizza.

New York Style / Re: My New York pizza

I can't say for sure without actually having the dough ball in my hands, but I'll put money on one of two things.

1) Essentially all commercially made frozen dough contains either L-cysteine (think PZ-44) or glutathione (think dead yeast) as a reducing agent to both reduce the dough mixing time and to improve processing of the cold dough. If they are getting inconsistent doses of this material into the dough (not hard to do), this might explain the unusually soft and overly sticky dough you are occasionally experiencing.

2) As you note, temperature abuse. Frozen dough does not tolerate temperature abuse well at all, and this could well be the culprit here. In either case, I would contact the manufacturer of the frozen dough and notify them of the problem. You may well need to change suppliers or go to making your own dough to get away from the problem if the dough manufacturer isn't getting flooded with dough performance complaints.

Dough Clinic / Re: Sticky Dough

Patdf;

I totally agree, give hand mixing a try. You will be surprised at how easy it is, and as for being low cost, nothing will beat it. That's the way pizza was first made, and it still makes a great pizza. If you will send me your e-mail address I'll send you a copy of my home made pizza dough recipe/formula to get you started. Roll up your sleeves, grab a wooden spoon and a bowl, and prepare to have fun learning how to make great pizza. Remember, the journey is as much fun as the destination, and as a side bonus, you get to eat your mistakes as well as your successes.

Prep Equipment / Re: Kitchenaid mixer time limits

Dan;

Most bacterial starters take a bit more than just a few hours before they show any real leavening power, but possibly the starter that you got is not a bacterial starter, but rather a yeast (wild yeast) starter? What does the manufacturer say about how long it should take before you begin to see the development of leavening gas?

Starters/Sponges / Re: Sourdough Culture Contamination Concern

Jackie;

You'll find the October class to be a tremendous asset in getting your pizzas developed for your planned shop. Many of our students are in your exact same position of preparing to open a store. The dates for this years pizza seminar are

October 22 through 26, 2012.

New York Style / Re: How long out of refrigerator before cooking?

While we normally advocate leaving the dough out of the cooler for 1.5 to 2-hours before opening it into a pizza skin, we have also put a thermometer into the dough to find out what the temperature of the dough is at this time. We found that the dough is typically at 50 to 55F. I don't like using the Zip-Lok bags for dough storage as there is a possibility of the pressure within the bag opening the seal, or blowing out a seam in the bag, in either case the dough will crust over :(, this is why I like to use something like a bread bag. Oil the dough ball, drop it into the bread bag, twist the open end of the bag to close and tuck the pony tail under the bag as you place it into the fridge. This will allow for some expansion of the bag while not allowing it to open, thus saving the dough.

New York Style / Re: How long out of refrigerator before cooking?

Actually, the dough formula looks to be quite good. You might try lightly brushing the dough with oil when you take it out of the fridge rather than dusting it with flour which can dry the dough, or just leave the dough in the plastic bread bag or container to temper AT room temperature for about 2-hours, then turn it out into the dusting flour and open into a skin as normal. From the pictures of your pizza, it really looks quite good. Those bubbles around the edge of the crust are normal and add character and texture to the pizza. The area directly under the bubbles as seen in the photos appears to be a bit dense. There are two ways that you might address this, 1) Increase the IDY level to 0.375% of the flour weight. 2) Experiment with a slightly higher dough absorption. 3) Allow the dough to set out at room temperature for an additional 30 to 60-minutes before opening it into a pizza skin. Keep us posted on your progress.

New York Style / Re: Lack of gluten development = hollow edge crust?

I don't like to use a Zip-Lok bag as it seals the dough too tightly, instead, I like to use something like a bread bag, first lightly oil the dough ball, and drop it into the bag, then twist the open end to close and tuck it under the dough ball as you place it into the fridge. Leave the dough ball in the bag when you remove it for tempering AT room temperature, just turn the dough ball out of the bag into a bowl of dusting flour and begin opening the dough into a pizza skin. A couple things to keep in mind are the amount of yeast you're using and the finished dough temperature. Too much yeast or a dough that is too hot/warm will result in an over fermented dough after three days in the fridge.

New York Style / Re: Lack of gluten development = hollow edge crust?

Peter;

Yes.

Tom

Dough Clinic / Re: Storing and keeping flour fresh

Shaun;

While the flour miller takes steps to ensure the flour is bug free and devoid of any insect eggs, nothing is 100% so there is always a possibility that there can be some viable eggs in the flour. When they hatch they will be larvae and the flour will be "wormy", then they mature into adults and you have "buggy" flour, soon to be followed by the laying of eggs and a repeat of the cycle. This can all take place in as little as a month. So, at the very least, you should take steps to ensure the flour is not infested from the outside of the package, this means putting it into a plastic

or metal container; no need to be air tight, bust bug tight. Flour does change during storage, it oxidizes, meaning that it gets stronger. This may not be a good thing as it can result in excessive dough memory/snap-back during the forming operation. For this reason, we suggest storing the flour in the fridge if at all possible. If you plan to store it for an extended length of time we suggest first freezing the flour for 45-days or more, then storing it in the fridge.

Dough Clinic / Re: Storing and keeping flour fresh

Make a half size batch without any added oil, then blend the two together. You can freeze the extra sauce that you have for later use.

Dough Clinic / Re: Too much oil

Franko;

It's not recommended as the dough has warmed and has expanded to some extent (becoming less dense) as such, it is a better insulator and it will not cool very efficiently, leading to the possibility of a blown dough or excessive fermentation. A much better approach would be to at least partially open the dough ball, thus reducing the cross section and making it easier to cool down. By doing this we have been able to save the dough from one day to the next in a home baking situation, however, in a store setting, we don't recommend this practice as it is too difficult to manage properly which could lead to a disappointed customer (s) something we never want to do at the store level.

Dough Clinic / Re: Dough ball

We also do a number of pizza parties each year and a couple of things that I've found to work well when I've got the better part of a dozen people looking for food is to put out bowls of pasta and several different sauces along with the first pizza. Also, consider using a party slice rather than a conventional pie slice, this gives more pieces and believe it or not, more time for that next pizza to get baked. Remember to have FUN, talk to your guests as they are sampling your pizza, tell them about how you love making pizza and how honored you are to have them as guests, go on to talk about the next pizza coming up. As people listen, they tend to eat slower, and good conversation slows them down too, just what you need to get that next pizza to their plates.

General Pizza Making / Re: Making pizza for several people with only one stone

Yes, you should. Your scale probably won't be accurate enough to weigh to the 1/10-gram, so just weigh to the closest number your scale will allow. I normally round my numbers to the nearest whole gram too.

Dough Clinic / Re: Pizza Dough Calculator Weighing Water Question

I totally agree, the look of the pizza with the "bad cheese" is more like what we see when using diced cheese. Also, you might be hitting the cheese with too much heat. To correct this, try moving the pizza to a slightly lower position in the oven if you can. Most stores sell a fresh mozzarella cheese in a ball form. Try one of these, but don't grate it, instead, peel it like an orange so you get random size pieces to place over the top of your pizza, then grate or buy some grated Parmesan cheese and sprinkle about 2-ounces over the top of your regular cheese (be sure to get some on the outer edge too) as this will add more depth to the cheese flavor.

New York Style / Re: In Desperate Need of CHEESE Help

My experience is that the Caputo flour tends to make a slightly softer dough than

K.A., so I'm guessing that the 50/50 blend dough was a little tighter and as such it didn't show as much rise, or gain in volume as the softer 100% Caputo flour dough. The amount of fermentation both doughs received was the same, the softer dough just visually got a little bigger because it was a softer dough. You can demonstrate this by using the same flour for two doughs and adding more water to one dough, the dough with more water will be the softer of the two and show more rise.

Dough Clinic / Re: Do different flours or a combination of them rise more than others?

Scott;

Here is my emergency pizza dough.

Start with your regular dough formula.

1) Double the yeast.

2) Cut the amount of sugar in half.

3) Increase the water temperature used in making the dough by 15F.

Procedure:

Mix just until all of the ingredients come together and make a fairly smooth dough.

Immediately divide into pieces and ball.

Oil the dough balls and place into individual plastic bags, twist the open end to form a pony tail and tuck under the dough ball as you place it on the kitchen counter.

Allow the dough balls to ferment for 60 to 90-minutes, then turn out into a bowl of flour and open into pizza skins, dress in your normal manner and bake as normal.

General Pizza Making / Re: Emergency pizza

We have used all sorts of potato on pizzas. Thin sliced, grated (really looks good) as well as cooked and mashed with butter and garlic. When using mashed potatoes I like to apply it in rosettes using a decorating bag and a large star tube, then apply by making little swirly (rosettes). Garnish with a little fine crumbled bacon and a little cheddar cheese in addition to your favorite pizza cheese. Makes for a really nice presentation.

Neapolitan Style / Re: Indulge Me- Potatoes

Not a problem, no worse than using butter, and we all know how hard that gets when its cold. You will certainly pick up the flavor of the bacon or lard. That is why so many people say the tortillas taste so good in Mexico, because in Mexico they're made with lard that has not been as heavily deodorized as the lard which we have here in the U.S.

Dough Clinic / Re: Using melted lard in dough

To use IDY (instant dry yeast) use 1/4 less IDY than ADY (active dry yeast) so your new yeast level will be 0.2474 (call it 0.25-ounce) of IDY.

As for how to manage the dough, immediately after mixing, divide the dough into desired size dough balls, wipe with salad oil and place into individual plastic bags (bread bags work well), twist the open end into a pony tail and tuck under the dough ball as you place it into the fridge. Allow to ferment in the fridge (3-days in your case), then remove and allow to temper AT room temperature for about 2-hours, then turn out into a bowl of dusting flour and open into a pizza skin by hand, then brush with olive oil and dress as desired.

Dough Clinic / Re: Please look at my recipe

Norma;

We do a wet gluten test where we manually wash the gluten out of the flour under

very COLD water. You can then weigh the wet gluten ball weight and divide it by the weight of the flour that you washed it from to get a WET GLUTEN PERCENT, but doesn't mean a lot to most people since when citing gluten we speak in DRY gluten terms, you need to dry the gluten ball in an oven (typically overnight) and use that weight divided by the flour weight. There is a machine that is used to do all of this automatically, it is called the Glutomatic Gluten Washing Machine.

As for incorporating wet gluten into a dough, lotsa luck! That gluten ball is so tough and rubbery that it is impossible to incorporate into any kind of a dough. It kinda reminds one of a well chewed rubber band.

Dough Clinic / Re: Can a Wet Gluten Mass be incorporated into another dough?

Franko;

The reason why your commercially made frozen dough can be worked right out of the fridge is because it contains a healthy dose of L-cysteine (you will see it listed as an ingredient on the package label). The L-cysteine is a reducing agent used to make the dough softer and more extensible. The manufacturer uses it to help reduce the dough mixing time and achieve full gluten development during mixing at low temperatures. As long as you are not experiencing problems with the dough bubbling during baking there should be no issues with using the dough right out of the fridge. By the way, unless the dough balls are marked/labeled as pizza dough, it is probably a bread dough that you are working with. The biggest problem with any of the commercial frozen doughs is they don't receive any fermentation at all prior to freezing, hence, the dough balls, when slacked out still don't have any fermentation on them and that can have an impact upon the flavor of the finished crust. To some this is important, to others it is not.

Dough Clinic / Re: Frozen dough ball

10% protein content is a bit too low for making the best pizza. You will be much better served by using the 13% protein content flour. With this higher protein content flour, you will be able to ferment the dough for a sufficiently long time to develop some really good flavor in the finished crust.

You will need to experiment a bit at first to find the correct absorption for the flour. Typically, I would start at 58% dough absorption (58% water based on the weight of the flour) make a dough and see how it performs, then make any needed adjustments on future doughs.

Dough Clinic / Re: Want to use caputo in 270cl oven

Also, make sure you have a sufficiently high protein level in your flour. We normally like to see about 13% protein content in the flour. A quick call to the manufacturer should get you the protein content, or you can add some vital wheat gluten to the dough formula. I would suggest adding 8% (flour basis) of additional gluten plus 12% (flour basis) additional water. Be sure to dry blend the gluten into the flour before adding the water.

Dough Clinic / Re: Pizza Dough over rising and deflating?? Help

Lester;

There are two ways that I slack out frozen dough balls and get them ready to use for making pizza skins.

First, oil the dough ball and place it into a plastic bag (think bread bag), twist the open end to close and tuck under the dough ball as you place it into the fridge. Allow to thaw for 12 to 16-hours, then open and use for making your pizza skins. A better method (I think) is to remove the slacked out dough ball from the fridge

and set it at room temperature for about an hour, then place it back into the fridge for use on the following day. When removing the dough ball from the fridge to use, leave it in the plastic bag and allow it to set at room temperature for 1.5-hours, then turn the dough ball out into a bowl of dusting flour and open into a pizza skin. The second method described allows the dough to develop a little more fermentation flavor than the first method.

Dough Clinic / Re: What is procedure for taking out a frozen dough Ball

When making pizza at home hand mixing gets my vote too. It really isn't hard, and when done right, the total mixing time will only be a couple of minutes, and you won't get biceps like the village blacksmith either.

Dough Clinic / Re: How does the Micro Mixer sp5 compare to the Electrolux

Jackie;

IDY and CY (compressed yeast) are closer together than CY and ADY. While IDY also has its share of damaged yeast cells due to the drying process, the issue has been addressed through the addition of a small amount of ascorbic acid to the dry yeast, while the ADY (active dry yeast) has not had any ascorbic acid added, so the doughs made with ADY actually end up slightly softer than when made with IDY. The biggest problem that we have seen is with conversion of one type of yeast to another. When used at correct conversion levels, there is no difference in finished product flavor between IDY, ADY, or CY. The trick here is in using the CORRECT conversion, and the conversion recommended by the manufacturer, may not always be the correct one for your particular dough formula. For bread makers, the correct conversion level is the one that provides the same final proof time as the yeast type being replaced. For pizza makers, I like to use a plastic glass or cup, oil the inside and place a weighed amount of dough into the cup/glass, flatten the top so it is as even as possible, lightly cover with a piece of foil and set aside to proof/rise until the dough reaches the top edge of the glass/cup, then record the time required for the dough to rise to that height, now, replace the yeast with the type you want to use, and repeat, adjust the yeast level until the time needed for the dough to rise to the top edge is the same as with your original yeast. Now, divide the new yeast level by the original yeast level and you will have the correct conversion for your specific dough.

Dough Clinic / Re: Fresh yeast

We have done a huge amount of work on short time doughs, including emergency doughs, if at all possible, incorporate at least 2.5 hours of fermentation time into your dough making process. This will significantly improve the crust flavor as well as reducing the bubbling and blistering of the dough during baking. Ain't nothin' that speaks of a great pizza like a huge bubble on the pizza during baking that causes the cheese and toppings to slide off and burn in the oven.

Dough Clinic / Re: Not Using Delayed Fermentation

Craig;

The end result from using fresh compressed yeast and IDY are exactly the same, no difference. ADY, due to the presence of damaged yeast cells provides a little softening to the dough, but nothing else to the finished bread. A number of years ago we did a seamless transition to IDY in our Experimental Bakery where we used it exclusively for several years, and then ultimately transitioning back to using compressed yeast (a political move) just as seamlessly.

Dough Clinic / Re: Fresh yeast

Finfan;

The easiest way to correct the condition which you describe is to oil the dough balls and then place them into individual plastic bags. Bread bags are an excellent choice. DO NOT tightly close the bread bags, but instead, twist the open end to close it, forming a pony tail, then tuck the pony tail under the dough ball as you place it into the fridge. To use the dough, simple remove a dough ball from the fridge and allow it to temper AT room temperature for about 1.5-hours, then turn the dough ball out of the bag into a bowl of dusting flour and begin opening the dough ball into a pizza skin. This process works perfectly all the time.

Dough Clinic / Re: dough ball problem question

Semolina flour also makes for a very good peel dust. The larger particle size of semolina flour gives good release from the peel, and since it is slow to hydrate, it doesn't adhere well to the dough. You might try dipping the entire dough ball into semolina flour before you open it up into a pizza skin, this normally minimizes the amount of peel dust needed to get a good release from the peel. Make sure you use a wood, not metal peel for your prep peel.

Dough Clinic / Re: Too much flour on finished pizza.

I am also an advocate of starting the pizza on a low rack position and then moving it to a higher rack position when I don't have a pizza stone to bake on. Additionally, make sure the cookie sheet, or the pan you're baking the pizzas in are dark colored. TIP: DO NOT use an airbake pan. The bottom crust won't color up.

General Pizza Making / Re: Advice On How to Cook Pizza In a Home Oven Without a Pizza Stone. Need help.

Changing the brand of cheese can certainly help as some brands will color more than others. Many times I will sprinkle shredded Parmesan cheese around the edge of the crust to achieve the same effect. Also, moving your pizza to a higher rack position in the oven may also help by putting more top heat to your pizza, or you might experiment with doing the bulk of the baking at a lower rack position to get the bottom of the crust baked properly, and then moving the pizza to a higher rack position to get the desired browning on the cheese.

Dough Clinic / Re: Caramelized Cheese Crust

Kerry;

The oven you're looking to buy, is it new or used?

Do you have a dedicated 208-V circuit that you can plug it into?

The oven should work just fine otherwise.

I see these being used in bars from time to time.

Dough Clinic / Re: Baker's Pride model P22S

Moose;

Are you wanting to get a softer crumb? If so, the addition of oil or shortening/butter to the dough will give you that added characteristic. But I was also getting the impression that maybe the you wanted the cell structure (crumb) to be more open too? If this is the case, the you may need to add a little additional water the dough. You also brought up the question of do I have enough dough to get the desired crumb characteristic. Remember, you need dough to get an open crumb characteristic, so by all means don't be afraid to experiment using more dough to make your pizza skins.

Dough Clinic / Re: How to get a soft crumb?

When most people think white pizza sauce, they think Alfredo sauce, or some variation based on it. Alfredo sauce is a wonderful compliment to chicken or seafood on a pizza. When I make a seafood pizza I put on a light spread of Alfredo sauce and then apply dried dill weed, followed by the sea food (shrimp and fish), then some red onion, sun dried tomato, and a blend of 75% Mozzarella/25% Shredded Parmesan cheese. Keep it simple, to die for!

General Pizza Making / Re: White Sauce recommendations or recipes anyone?

Try this, it will make your day a lot easier.

After you mix the dough, immediately divide it into three pieces and form into balls, then lightly oil with salad oil and place into individual plastic bread bags. Twist the open end to close and tuck the pony tail under the bag as you place it into the fridge. allow the dough balls to remain in the fridge for 16 to 48-hours. To use, remove the dough balls that you want to use and allow to temper AT room temperature for about 2-hours, then turn out into a bowl of flour and begin opening the dough ball(s) up into pizza skins, then handle in your normal manner. I'm betting the dough will open a lot easier for you with out nearly as much memory.

Dough Clinic / Re: still looking for that "flexible" dough

Mark;

So, what is the scaling accuracy of the Taylor 10-C scale that you list for just under \$50.00? I sure wish manufacturers and merchants would show the specs on their scales. How is one supposed to know if the scale is appropriate for what they want to use if for without that vital information???

I think for what most home bakers do, a scale that has a capacity of 5-pounds/2.27 Kg. and will weigh to the nearest 1-gram in the metric mode would work well. This Will allow the user to scale the half gram increment by watching the display screen, and when it flashes between two numbers, such as between 7 and 8, this would indicate "approximately" 7.5 grams, close enough for our work.

Prep Equipment / Re: Digital scale accuracy?

Bill;

I think you've just got a sweet tooth. LOL :)

Dough Ingredients / Re: Confectioners Sugar In Doughs?

Normally it will also give an accuracy range, such as 11-pounds X -ounces, so I looked it up on the internet and found your Model #7918 listed as a Walmart item, and absolutely no specifics are given. If you read the reviews you will see that one review isn't very complimentary, citing lack of accuracy as an issue. It states that this scale will not weigh less than 0.6-ounce/17-grams (sound familiar?) With this range of accuracy I wouldn't post it on the box either. For all practical purposes, this scale has a maximum capacity of 11-pounds X 0.5-ounce/16.5-grams. Meaning that it will weigh in ounces to the nearest half ounce to a maximum of 11-pounds, or in metric to a maximum of 5-kilograms in 16.5-gram increments. This is NOT a very good scale for the advertised application. I hope you saved your receipt.

Prep Equipment / Re: Digital scale accuracy?

What is the stated range and accuracy of your scale? Exactly how does it read on the box?

Prep Equipment / Re: Digital scale accuracy?

Phil:

From what you have described, I'm guessing that the water temperature was too cold. You said that the dough had hardly risen by the following day, and a cold dough temperature would explain that. With the 6 to 7-minutes of machine mixing it is OK to add IDY directly to the dough as you did. It is designed for that method of application when machine mixing is used. For a finished dough temperature, you want to look for something in the 80 to 85F range. The reason why the dough didn't color up might be due to the fact that it didn't expand very much during baking (lack of oven spring), this would allow the bottom heat to pass through the dough into the sauce, where it is dissipated as steam. In order to get the crust to brown, you've got to get the dough surface temperature up to around 300 to 400F. When the dough expands during baking, it creates an open structure which prevents the heat from being conducted through the dough, hence allowing the surface temperature to rise sufficiently high to allow for the browning reaction to take place.

Newbie Topics / Re: My Lehmann style fail

Norma;

An inquiring mind is a terrible thing to waste.

The most thought provoking word in the English language is the word "why?".

Have a great Thanksgiving!

Dough Ingredients / Re: Confectioners Sugar In Doughs?

Powdered sugar and granulated sugar are one and the same except for particle size. Keep in mind when using volumetric portions that they are NOT interchangeable, but from a functionality standpoint, they are the same. Infact, you can make your own powdered sugar in a food processor.

In case you're wondering (inquiring minds want to know) donut sugar, that stuff that looks like powdered sugar on a cake donut is not actually powdered sugar, even though it is called a powdered sugar donut, or coating. Donut sugar is made with powdered dextrose (not as sweet as sucrose) along with added starch and fat. It is designed specifically for use as a coating sugar on donuts and is never used a a substitute for powdered sugar.

Dough Ingredients / Re: Confectioners Sugar In Doughs?

Moose;

ADY should be mixed with four to five times its weight of water (100 to 105F) and allowed to hydrate for about 10-minutes, stir again, and add to the mixing bowl. I like to add the hydrated yeast to the dough water to further disperse it when making pizza dough at home, you can also rinse out the container that you hydrated the ADY in with the dough water. With IDY you have the option of adding it directly to the flour if you will be mixing the dough by machine for 5-minutes or more. If you will be mixing by hand, or mixing for a very short time, you should hydrate the IDY in four to five times its weight of water (95F) and allow to hydrate for about 10-minutes, then stir once again and add to the dough. Again, I like to add the hydrated IDY to the dough water just as I do the ADY.

Newbie Topics / Re: Question about Active Dry Yeast please...

Since we're on the topic of peel dust, while a lot of people think it is just a matter of preference as to what is used as a peel dust, it is actually a lot more than that. A soft dough, one that has a high dough absorption, when placed onto a peel with just flour will tend to hydrate that flour quite fast, thus losing the slip characteristics provided by the flour. In this case something that won't hydrate as fast is needed, this is where semolina flour comes into play (it hydrates very

slowly). If the dough is really wet, as some are, corn meal will help to actually hold the dough off of the peel surface, thus facilitating slip. In actual application, we seldom ever use 100% of any of these products, but instead, use a blend of them to make our peel dust, which is all based on the properties of the dough that is on the peel at the moment. My own personal favorite blend is made from equal parts of regular flour, semolina flour, and fine grind corn meal, and I've yet to have a pizza stick to a wood peel when I did my part. By the way, you are absolutely correct, shaking the dressed dough skin on the peel occasionally before taking it to the oven is vitally important to ensuring a release every time regardless of what you're using as a peel dust.

Dough Clinic / Re: Corn meal on stone

To take the T.F. (thickness factor) one step further, now all you need to do is to calculate the surface area of your new pan size/pizza size and multiply your T.F. by that number to get the correct dough weight for the new diameter.

Example: You now want to make your pizza on a 12-inch diameter format. $\pi \times R^2 = 3.14 \times 36 = 113$ square inches in a 12-inch diameter pizza. $113 \times 0.084\text{-ounces} = 9.49$ (call it 9.5-ounces). Note: The decimal point was in the wrong spot in the original response. 13-ounces divided by 154 = 0.085 T.F. Another way to express T.F. is ounces of dough per square inch of surface area.

Dough Clinic / Re: thickness factor explained please

FeChef;

If you want to fry the dough, not a problem, just make sure you set the formed pieces (mini calzones) aside to proof/rise for about 20 to 30-minutes before you place them into the fryer. I like to fry submerged, as they look better, but they can be surface fried if you don't mind the white line. Note: don't put a pressure release hole in the dough if you plan to fry it.

Dough Clinic / Re: Finally, the perfect dough..but..

Actually, most bubbles are the result of insufficient dough fermentation. Another major contributor to the cause is use of a cold dough (failure to allow the dough to temper AT room temperature for at least two hours after removing it from the fridge (if using cold fermentation)). Occasionally, we do find an excessive amount of yeast being used, but if the yeast level is around 1% of the flour weight for compressed yeast, 0.5% for active dry yeast or 0.375% for instant dry yeast you're good on the yeast level

Dough Clinic / Re: what to do about bubbles

Biz;

I stand corrected on the name of that proofer I mentioned in my above response. It is the Econo-Proof, not Proof and Bake.

Off-Topic Foods / Re: Panomatic couche?

Biz;

If you're looking for a proofer, go to Belshaw Bros., Inc. at <www.belshaw.com> They have a vertical, multi door proofer with about a 30" X 36" footprint and it plugs into a 110V outlet. It takes standard size sheet and screen pans. I believe they call it their Proof and Bake unit. Sells for around \$1,300.00 if I remember correctly. Look at used bakery equipment suppliers, there is a lot of good equipment out there just waiting to be adopted.

Off-Topic Foods / Re: Panomatic couche?

A quick trip to your local supermarket, and a stroll down the baking goods aisle should put you in front of Pillsbury Bread Flour. This flour comes in at around 12% protein content, and should work quite well for a deep-dish pizza. While you're there, pick up a dark colored cake pan, it will work better than your silver colored cheese cake pan.

Resources / Re: Anyone have any sources for some of these flours near eastern Ohio?

Waste good pizza dough? No way!

Make one or two breadsticks out of it, or roll it thin and add a little cheese and meat filling, then fold it over and crimp the edges, tear a small hole in the center of the filled pocket and bake along with your pizza. The cook/chef can then enjoy a little appetizer before the main course.

Dough Clinic / Re: Finally, the perfect dough..but..

Norma;

I should have added to lightly oil the dough ball when you place it in the container as this helps to control any possible skin formation while it is uncovered, and it also helps when its time to pop the dough out of the container, as it just plops out when you have oiled the dough ball.

Dough Clinic / Re: what to do about bubbles

BP;

If your dough is in proper balance with regard to yeast level, and the temperature is not too high, the dough should not exhibit much of a tendency to bubble as you've described. A good dough temperature is 80 to 85F (probably favoring the 80F side). A dough that has too much yeast or one that is too warm will typically exhibit a greater tendency to bubble during storage in the fridge/cooler. Also, if you leave the dough rest at room temperature for an extended time prior to putting it into the fridge, this may increase the odds of having the dough bubble. If you put the dough into a plastic bowl in the fridge, be sure to leave it uncovered for the first 90-minutes or so, then cover it. This can also reduce the bubbling tendency. If all else fails, put the dough into a bread bag for refrigerated storage. Twist the open end of the bag to close it, and tuck the pony tail under the dough ball as you place it into the fridge, then kiss it good night. No need to leave anything open. Just be sure to oil the dough ball prior to dropping it into the bag, then just turn the dough ball out of the bag into a bowl of dusting flour and begin opening the dough ball into a dough/pizza skin, dress and bake. If the dough develops a bubble, I normally ignore it until I'm ready to use the dough, then just pop the bubble and open the dough ball.

Dough Clinic / Re: what to do about bubbles

Paul;

That is correct. Some might argue that some of that water is needed to meet the hydration requirements of the yeast, and that is correct. About 70% of the weight of the yeast is required to fully hydrate it. My feeling is that in a home made pizza or bread setting, we're now splitting hairs and making things more complex than they really need to be, so I just simplify things by saying to subtract the same amount from the dough water that you used to hydrate/suspend the dry yeast in. In short, if you used 4 tablespoons of water to hydrate/suspend the yeast, just remove 4 tablespoons of water from the dough water to keep everything in correct balance and it will be close enough for making dough. If we were making rocket fuel, well, that might be another matter.

Dough Clinic / Re: dough temp question

In response to replies #4 and 5 above;

ADY is typically, and correctly substituted for compressed (cake) yeast at 50%, or 1/2 of the compressed yeast weight or percentage.

The type of flour used to make the Chicago style cracker crust would be Ceresota brand, but any flour with around 11.5% protein content would work equally as well. When baking in a home oven, I like to par-bake the crusts at 400F, and bake on a stone if possible, or on a dark colored pan if a stone is not available. When baking the dressed dough/crust, I increase the oven temperature to 475 - 500F, and bake on a dark colored, solid pan, like the Lloyd's cutter pan, but any dark colored, solid pan will work. The baking time will be about 25-minutes on a raw dough skin, or about 15-minutes on a par-baked crust. Some experimenting will be needed due to the vast differences in the way different home ovens bake.

Dough Clinic / Re: Chicago style thin cracker crust

Peter;

Sifting out the adult beetles and larvae might make you feel a little better about using the flour, but you have not sifted out the eggs, which will soon hatch and begin the cycle all over again. Your best bet is to break the bag of flour down into smaller bags and freeze them for at least 40-days. This will kill any beetles, larvae, and eggs. The flour can then be stored plastic or metal containers at room temperature for a much longer period of time.

Dough Ingredients / Re: Caputo flour freshness

F.C.:

With reference to replies #1-3, the dough formula looks like this:

Flour: 358g. 100%

VWG: 10g. 2.79%

Water: 225g. 62.85%

IDY: 3g. 0.84%

Salt: 6g. 1.67%

Honey: 23g. 6.42%

Total% 174.57%

All you need to do now is to decide how much dough you want to make and divide that amount by the total formula % divided by 100. Here's an example: Lets say you want to make 28-ounces of dough. Divide 28 by 1.7457 and you get 16.03911-ounces (call it 16-ounces) of flour needed. Doing it in grams: Lets say you want to have a total of 1000g. of dough. Divide 1000 by 1.7457 and you get 572.83611-grams (call it 573-grams) of flour needed.

Once you have the flour weight, the rest is easy, using your calculator, just enter the flour weight, then press "X" enter the ingredient percent and press the "%" key and read the ingredient weight in the display window. The ingredient weight will be in the same weight units that you showed the flour weight in.

Example: 573-grams of flour.

573 X 2.79 (press the "%" key) and read 15.9867 (call it 16-grams) of VWG needed. Repeat this for each ingredient and you will have your ingredient amounts for your new dough weight.

Dough Clinic / Re: Finally, the perfect dough..but..

If you can give me your weights for the honey, salt, and yeast I can put your dough

into a formula that you can manipulate to give you any weight of dough you desire.
Dough Clinic / Re: Finally, the perfect dough..but..

Paul;

The answer to your questions are yes and yes. Home mixers just don't provide the mixing action that the larger mixers provide, so you are safe to hedge your bets by suspending the yeast, be it instant dry yeast, active dry yeast, compressed yeast, or instant rise yeast in a small portion of water (95 to 100F), leaving the remainder of the water at a lower (calculated) temperature to adjust your finished dough temperature.

Dough Clinic / Re: dough temp question

Sour? Flour adhering to the dough will not give the finished crust a sour taste, but it will impart a bitterness to the crust, maybe that's what you mean? As you handle the dough, during the forming process, you should find that you really don't need much more flour after the first "dunk" in the flour bowl, as you continue to shape the dough the dough will have a dry skin and much of the excess flour will simply fall off. A light dusting of flour on the dough is normal. We have our annual pizza seminar coming up next week and I'll try to see if I can get some video footage shot showing the dough balls being opened into pizza skins.

Dough Clinic / Re: Little confused about flour dusting

While some may say that flour can be stored for up to a full year at room temperature, unless you know how the flour was stored prior to your purchase (fat chance of that) you would be best advised to re-bag the flour into double plastic bags (like bread bags) and then store anything that you will not be using within the next month or so under refrigeration or in the freezer. Your main concern is insect infestation. You may not always see the black or reddish appearance of flour beetles (looks like pepper in the flour) as you can also have the larval stage present. This is when the flour is said to be "wormy". About the only way you'll be aware of this is if you sift the flour, then you will see the larva in the screen after sifting the flour. An old baker's trick is to freeze the flour for 45-days, this will kill all of the insect stages (from adult to eggs), then transfer the flour to a cooler where it can be stored for a much longer period of time if necessary. For the most part, flour is pretty free from insects as it comes from the mill, it is the post packaging contamination that gets it. The problem can/will occur in a warehouse, truck, or other transport, and all too often on a store shelf. And don't over look your own kitchen, I've had to discard buggy flour more than once from my own kitchen, especially when you store the flour in a drawer as I used to do. I now store it in a large glass jar.

Dough Ingredients / Re: Caputo flour freshness

Some of the things that we do to product the typical Chicago style crust are as follows:

Dough absorption around 55% (will vary with absorption requirements of the flour).

Flour protein content should be around 11%.

Some use corn meal, some don't, if you elect to use corn meal, try 8% based on the flour weight.

For the color, use "egg shade" a type of yellow food coloring.

Bake at 450F and plan on a bake time of 25 to 30-minutes for a thin crust and 40 to 45-minutes for a thick crust pizza.

Assemble with sliced cheese going on first, and sauce going on last.

Can't use anything but RAW sausage in Chicago.
Butter or margarine is commonly used in place of olive oil in the dough.
Margarine is commonly used to grease the pans (Bluebonnet).
Chicago thin crust pizzas are NOT crispy with exception for the very edges.
Always party cut a Chicago style thin crust pizza.
Chicago style pizzas are not laminated. The key to getting that open crumb structure is in allowing the dough to rise in the pan before dressing.

[Chicago Style / Re: Chicago crust from America's Test Kitchen](#)

PK;

I would suggest using only flour, salt, water and yeast for the ingredients.

A good starting point might be as follows:

Flour 100%

Salt 1.5%

Compressed yeast 1%

Water 68% (70F/21.1C)\

Put the water into the mixing bowl, add the yeast and stir until the yeast is suspended, add the flour and the salt and mix just until the dough begins to come together, then set aside and allow to ferment for about 2-hours, turn the dough out onto a floured bench and knead for a minute or so. Form into dough balls, and lightly oil, place each dough ball into a plastic bag, seal by twisting the open end of the bag into a pony tail, and tuck the pony tail under the dough ball as you place it into the fridge. Allow to ferment for 18 to 24-hours, then remove from the fridge and allow to temper AT room temperature for 1-hour, then turn the dough out of the bag into a bowl of flour and open into pizza skins. There are many methods for making the dough but this is one of the easiest I've come across.

[Dough Clinic / Re: Some advice for perfect dough -pizza party with G3 and 00 flour](#)

When you're feeding the masses, that's how it is done. Personally, I'm more concerned about some of the big box wholesale stores putting a vast array of different types of stores and businesses out of business.

[Pizza News / Re: A sobering look at today's commecial pizza business...](#)

Jim;

It is all just a matter of preference. I've seen numbers as low as 1.5 fold increase and as high as 2.5 fold as cited in the article. I normally shoot for a 2 fold increase in size. Remember, you will not be fermenting the dough in a graduated glass beaker, as they were in the article, but rather you will be "eyeballing" the dough to ascertain the magnitude of size increase. Why do I use a 2 fold increase? Because it is easier to say "Yup, that looks to be about twice as large as it was when I started".

[Dough Clinic / Re: Target leavening volume](#)

Dennis;

I agree, that for anyone making pizza at home it is best to first suspend the yeast in a small portion of water before adding it to the mixing bowl. My own personal preference is to suspend it in a small container, and then add it to the dough water in the mixing bowl, which is my first ingredient going into the bowl, then I like to add the salt and sugar, followed by the oil and lastly the flour, since the salt and sugar are now in direct contact with the yeast, it is imperative that you begin mixing the dough right away. I know that the instant dry yeast (IDY) people say that you can add the IDY after mixing the dough for 4 to 5-minutes, but that is

based on the presumption that you are using a mixer, and that you will be mixing the dough for an additional 5-minutes, or more, after adding the yeast. I don't even like adding it in the flour, when I'm hand mixing as I am not fully convinced that my style of hand mixing (minimal) will result in proper yeast dispersion.

Dough Clinic / Re: Heston Blumenthal: Adding the yeast after flower+water

Sure;

You must be a "GLUTEN" for punishment to try to mix a dough for 30-minutes by hand. Just stir it together using a wooden spoon. Total mixing time about 90-seconds. Cover, allow to rise for 2-hours, turn out of the bowl onto a floured table top and fold several times until you can handle the dough with relative ease, then oil the bowl and place the dough back into it to continue fermenting for another 3 to 3-hours, then turn the dough out of the bowl and divide into whatever size pieces you need to make your pizza skins with. Form into balls, cover with a piece of plastic and allow to rise for about 30 to 45-minutes, then open into pizza skins, dress and bake as you wish.

I teach this process to people all the time and it really works well as a simple way to make dough using biochemical gluten development. Once you have this mastered, you can begin experimenting with any of the many other ways to make dough by hand.

Dough Clinic / Re: Hand Kneading = Anger

SO? What? You don't like the smell of beer? LOL

Actually, it might be pretty good. You have come this far, I'd make a pizza from the dough and see if you like it or not.

Dough Clinic / Re: should i toss this dough?

It might be that you have just over fermented the culture, or that you have some form of a lactic acid producing bacteria present that is giving you the very sour/acid taste where as a different lactic acid producing bacteria strain might give a totally different flavor profile. This is one of the things that can happen with these natural ferments, it is also what makes working with them so much fun and so rewarding at the same time. If it isn't over fermented, and if you are not using too much, you might need to start over again and hope for better luck the next time. One other thing, are you sure you used the correct amount of inoculant when starting your culture? If you don't use enough to inoculate with, you may not get enough of the desired bacteria and yeasts to propagate the microflora in the culture, and hence you run the risk of ending up with something totally different.

Dough Clinic / Re: Why did my dough turn out tasting sour??

When I worked in Chicago, Illinois, we used to visit a local deli called Jerry's Deli, as you entered the store Jerry would point at you and say "what you want?" At that moment your lips had better be moving and you had better be ordering, because if you were not, he would say "next!" and he was pointing at someone else and taking their order, and trust me, it could take some time for him to get back to you, and you had better be playing the game when he did! The deli was ALWAYS packed, I guess that was just the ambiance of the store, and those who went there either liked to be abused or watch it happen to others (a lot like the Soup Nazi, but dated 1970).

Pizza News / Re: Order a Pizza or Get Out!!

F.C.;

The secret to getting that characteristic is to use higher levels of L-cysteine, a

reducing agent in the dough. You can find L-cysteine in a product called PZ-44 available from Foremost Farms <www.foremostfarms.com>. Be careful when using this though as it can/will quickly turn a dough into something that more closely resembles a cake batter. I would recommend starting out at 2% of the total flour weight, and working up in 0.5% increments from there. Another option to explore is to form your dough into pucks and freeze it for several days. This will damage the yeast, releasing glutathione (first cousin to L-cysteine) into the dough, and it may give you some of the characteristics you're looking for. In this case experiment with the holding time in the freezer. Something between 3 and 10-days should give you some result similar to what you are looking for. Note: If you buy frozen pizza dough you will see this characteristic right from the start.

EDIT (2/7/13): For a link to the PZ-44 product, which was recently sold to another company, see <http://web.archive.org/web/20060311221117/http://www.foremostfarms.com/products/ingredient/pdf/450PZ44.pdf>.

Dough Clinic / Re: How do you get that nice shiny blistered dough crust?

Sweetpea;

What you have described is a Chicago style thin crust, not to be confused with the thin cracker. Here is a good formula for making the dough:

Flour: Ceresota 100%

Salt 2%

Oil 3%

Compressed yeast 1%

Water (65F) 48%

Procedure: Put water in the mixing bowl, add salt, then flour, yeast and the oil, mix until the dough just comes smooth, then set aside to ferment for 4-hours, divide the dough into desired weight pieces and form into balls, set aside and allow to proof for about 90-minutes, or until you can roll the dough out without too much difficulty. Roll the dough quite thin (about 1/8-inch thick), place onto corn meal dusted peel and dress as desired, bake at 450 to 475F about 20 to 25-minutes on a baking/pizza stone.

For weights: decide how much flour you want to use, this will be 100%. Then, using your calculator, enter this weight X 2 (press the "%" key and read the weight of salt to use. Repeat this for each ingredient and you will have your formula in weights.

Dough Clinic / Re: Name That Crust

F.C.

Bakers percents are used when weight measures are used rather than volumetric portions. To find the weight of any ingredient using bakers percent, follow these steps:

Flour is always 100% you decide what weight of flour you want to use, then mark it down as 100%.

Using your calculator, enter the flour weight, then press "X" and enter the percentage shown for the ingredient that you want the weight for, then press the "%" key and read the ingredient weight in the display window. Remember, the weight of the ingredient will be given in the same weight units as the flour weight was shown in (pounds, ounces, grams, kilograms, etc.)

Example:

You want to use 500-grams of flour. This is shown as 100%

Salt: 1.75%

Oil: 2%

ADY: 0.5%
Water: 60%

500 X 1.75 press the "%" key and read 8.75-grams.

500X 2 press the "%" key and read 10-grams

500 X 0.5 press the "%" key and read 2.5-grams

500 X 60 press the "%" key and read 300-grams

Now you have the weight of each ingredient.

Dough Clinic / Re: Cant seem to get that fat brown crust

The dough formula is correct as you have shown it. To use ADY you will use half (50%) of the compressed yeast amount and to use IDY you will need to use 40% of the compressed yeast amount. Keep in mind that regardless of the type of yeast used, they should all be suspended in water prior to adding it to the dough.

You are right about the procedure (step #12) being incorrect. They must have taken that from the Chicago deep dish formula when they transcribed and entered the formula in the Recipe Bank. Just sauce the par-baked crust, then add the toppings, and finally the cheese, as the cheese goes on last in the Chicago presentation. Remember, the mixing time is VERY SHORT. The resulting "dough" looks more like a biscuit or pie dough than what you might think of a pizza dough as being. If there ain't dry, white flour in the mixing bowl when you're through mixing, you have over-mixed the dough. Trust me.

Dough Clinic / Re: Chicago style thin cracker crust

BTB;

Ed and Joe's is the pizza that I was raised on as a kid! I remember them from back in the 50's! Best of all, they're still out there, and everytime I get back to the south side I get one of their pizza.

For the improved (crispy version) of the Chicago thin, cracker crust, go to the PMQ web site at <www.pmq.com> and under "culinary" click on the RECIPE BANK drop down. Then type in "Pizza dough" for your search words. You will find my Chicago thin cracker crust posted there. After step #11, parbake the formed dough skin (be sure to dock it well) These can be saved for use later, or used right away. Resume with step #12, or dress the parbaked shell in your perferred manner and bake in an airimpingement oven for 5-minutes at about 465F. We make this version at all of the pizza shows that we attend. It is also a great buffet pizza as it holds its crisp so well.

Dough Clinic / Re: Chicago style thin cracker crust

Peter;

After blast freezing, the dough balls are held at the same holding temperature as static frozen dough balls are, -5 to -10F, so the slackout time for both will be the same. As for Domino's using all in house made dough, not true. I have recently been in their Michigan commissary more than once. Granted, there might be some store out there that are too far off of the beaten path to be served by a Domino's commissary truck, and those stores might still be making their dough in house, but I'll bet the majority of their stores are served by a commissary.

Dough Clinic / Re: Frozen Commissary-Produced Dough Balls

F.C.;

Putting the pizza in a lower position in the oven will bring it closer to the heating element/burner at the bottom of the oven, while at the same time moving the pizza further from the hottest part of the oven (the top). This will allow you to bake the

pizza longer without developing excessive top color, and hopefully, get a better overall crust color. In some ovens I will bake a pizza for about 10-minutes on a lower rack, and then rotate the pizza 180 degrees and place it on a higher rack position to finish baking. This allows me to get a decent bake on both the bottom and top of the pizza. Remember, home ovens are really not the best pizza ovens, not by a long shot, so we need to be creative in how we bake our pizzas in a home oven, and every home oven is a creature onto itself, no two seem to be alike.

Dough Clinic / Re: Cant seem to get that fat brown crust

F.C.:

While your crust really doesn't look all that bad, if you are looking for even more volume/height, try increasing the dough absorption. With more water, the dough will be softer, and raise more easily during the early stages of baking, giving you more baked height. Getting back to the color issue, the fact that you have made dough with added sugar, and didn't get the desired color, and that you have tried different recipes with the same result, no color, this leads me to think you might have an oven issue. Your local hardware store will have a cheap oven thermometer that you can place on or hang from one of the racks to get a better idea of the actual temperature. Also, if your home oven is heating from the bottom, try placing the baking rack closer to the bottom to see if this will help. By placing the baking rack closer to the bottom, you will increase the heat to the bottom of the pizza while reducing the heat to the top of the pizza, allowing you to bake it a little longer for better crust color development without overbaking the top.

Dough Clinic / Re: Cant seem to get that fat brown crust

F.C.:

From the picture, it looks to me like insufficient oven temperature. Have you checked the temperature of your oven lately with an oven thermometer? We normally don't use sugar in any of our dough formulas and they brown quite nicely, even in a home oven, if we want to have a lot more crust color we will brush the edges of the dough skin with oil just before it is put into the oven for baking. Regardless of what your oven thermostat is saying, try bumping it up another 50 to 100F to see if that improves the bake.

Dough Clinic / Re: Cant seem to get that fat brown crust

Peter;

Yes, then can use static freezing rather than blast freezing, but.....the freezing time will be unacceptably long in most cases, so they employ blast freezing to get the freezing time down to something in the 30 to 40-minute range. The now defunct, Pizza Magia used to use a static, walk in freezer to freeze all of their commissary production. The freezing time was 6-hours on wheeled racks. The only reason why they were able to use static freezing was because they were producing for only a very limited number of stores. Their production schedule was to produce the order of dough balls and get them into the freezer as quickly as possible, then they would begin clean up, followed by building the boxes for the dough balls, then they would take a break, and begin setting up to package the frozen dough. As the boxes were filled, they were labeled and sealed, and placed back into the freezer. The boxes of dough were shipped out from the commissary later that night.

Donato's, Domino's, Pizza Hut, all employ blast freezing for their dough for the efficiency it affords. You can run the dough through the blast freezer and package it as it comes out, then pallet the cases of dough and move them back into a holding freezer at -10F until you're ready to ship.

Dough Clinic / Re: Frozen Commissary-Produced Dough Balls

Ted;

Here is a good N.Y. style dough formula based on 25# of flour (All Trumps, or equivalent)

Flour 100% 25-pounds

Salt 1.75% 7-ounces

IDY 0.375% 1.5-ounces

Olive oil 2% 8-ounces

Water (65F) 58% 14.5-pounds

Note: To use whole wheat and semolina flour in the above formula:

Replace 3.75-pounds of white flour with Con Agra Ultra grain flour.

Replace 2-pounds of the white flour with semolina flour.

Increase the total dough absorption to 65% (16.25-pounds) This may need to be adjusted depending upon the actual absorption properties of the flour that you are using, plus your handling techniques. Remember, the dough will be slightly tacky immediately after mixing, but this is normal for this type of dough. It should dry up to some extent by the time you are ready to use it on the following day. This is due to the slower hydrating properties of the semolina flour and the whole wheat flour.

Dough Clinic / Re: What is the Dough Doctor's favorite dough?

W.W.;

The blue is a little lower in protein content. We don't like it as much as the red as the dough is somewhat softer and more difficult to work with especially when you're tossing the dough as we do.

I think you answered your question as to why you are not getting the crispy bottom on your pizzas. With a 2-minute baking time you are getting a very thin bottom crust which will go soft very fast after removing it from the oven. For a test, see if you can find a seasoned pizza screen and bake a pie on it. The air gap created by the screen will reduce the heat to the bottom of the dough, thus slowing down the bake. With a longer bake, you will develop a heavier bake on the bottom of the pizza, and a crispier crust which will hold its crisp for a longer time. If that works, you will need to reduce the deck temperature to some extent. In wood burning ovens, I normally look for a 4-minute bake time for the crispiest pizzas that will hold their crisp for more than a couple minutes.

Dough Clinic / Re: Caputo Flour

W.W.;

If you have done as much formula testing as you say you have and still have not achieved a crispy bottom crust on your pizzas, I don't think changing to a Caputo (red) will make much difference, I think I would concentrate instead on how I was baking my pizzas. What can you tell us about how you bake your pizzas?

Dough Clinic / Re: Caputo Flour

Actually, AJ's is a slice operation that I helped Adam Peyton (the owner) develop. You can read about my new slice concept in PMQ Magazine (A New Approach to Pizza By the Slice). It was published about three years ago. AJ's is the third store to use this concept, that is different from all others. The first store opened in Bangkok, AJ's was the second, and the third was in San Antonio, TX (now defunct due to mismanagement). We use a well fermented dough, top shelf, whole milk Mozzarella cheese, all fresh prepared toppings, accompanied by a generous helping of great, and friendly service. We use an open kitchen concept so customers can see the dough skins being passed through a sheeter to partially

open them, and then hand tossed to full diameter (this method of opening results in a more uniform dough thickness), the pizzas must be baked on the Hex Disks from Lloyd Pans, and they must be baked in one of the new generation of air impingement ovens with a specially developed finger profile developed specifically for this application.

By the way, to answer your question of why do I like the Chicago style thin cracker crust, the answer is because I'm originally from Chicago, and that is the type of crust that I remember growing up with. In case you're wondering, there ain't anything crispy, except for the four corner pieces (party cut) of a Chicago cracker crust. But since the crispy corner pieces are everyones favorite pieces, and the first ones to go, I developed a process for making a Chicago style cracker crust that is crispy across the entire bottom. Now, I can REALLY enjoy my Chicago style cracker crust pizzas!

Dough Clinic / Re: What is the Dough Doctor's favorite dough?

Here is a sample of what comes across my desk all too regularly.

<www.yakima-herald.com/stories/2011/09/20/granger-dairy-recalls-raw-milk-over-e-coli-concerns>

Caution and food safety awareness are key issues with raw milk and products made from it. I'm not saying don't do it, but be educated, and be careful.

Pizza Cheese / Re: raw organic milk mozzarella

Rumper;

Well, yes and no. When the dough will be frozen, even in a very inefficient home freezer, it will hold up remarkably well for a week to ten days, without the need to add any "secret" ingredient. If I was going to put my money on a "secret" ingredient it would be ascorbic acid which acts as an oxidant in the dough, thus strengthening it to some extent, but it really isn't needed, so in my opinion, it is just a waste of money.

Dough Clinic / Re: Freezing dough

Just a cautionary note, there is a major epidemic with Listeria as I write this, a number of people have died since August. Listeria is fairly common in raw milk and can also be found in cheese. When consuming raw milk, and especially if you plan on ever selling/sharing any raw milk or product made from it, be sure to have it micro tested, and tested often. If you want to see the latest articles, please send me a request.

Pizza Cheese / Re: raw organic milk mozzarella

I think my all time favorite crust is a thin, cracker crust (Chicago style), my least favorite, boy, that's a hard question to answer, as my motto is: "I've never had a pizza that I couldn't learn to like", would probably be any crust that is not well fermented, as for type, it would have to be a poorly made deep-dish pizza that would get my vote for my least liked pizza. Toppings, that's an easy one, fresh tomato slices, onion, green peppers, sausage, and mushrooms (in addition to the normal sauce and cheese). One more thing, I've really grown fond of using fresh basil in place of the dried stuff, and I like to add a healthy sprinkle of Parmesan and Romano cheese to the pizza too. You do realize that this is making me really hungry! I've gotta make a stop at my all time favorite pizza place: AJ's New York style pizza (Manhattan, Kansas). No, he doesn't make the cracker type crust that I'm so fond of, but he has the best, and crispiest New York style slice I've ever had, and the service is great. You can see his web site at <www.ajsnypizza.com>.

Tom Lehmann/ The Dough Doctor

Dough Clinic / Re: What is the Dough Doctor's favorite dough?

Try this and let me know what the result is:

Put 3-cups of flour, and 1-tablespoon of salt in a bowl, add 9-ounces of cool water and your yeast. Mix for a couple minutes, cover with a piece of plastic and come back to it 2 to 3-hours later. Turn the dough out of the bowl onto a floured table top. Is the dough manageable, or is it extremely soft and sticky, to the point where you can't do anything with it? Let me know. If it is manageable, I can work it out with you. If it is totally unmanageable, you have flour with high starch damage, and the yeast is hydrolyzing the damaged starch into sugars. The only option you have then is to limit the total fermentation of the dough to not more than 1-hour.

I've been to and worked in the D.R. a number of times, and you do have some decent flour with normal starch damage available, but it may not be available outside of industrial size orders.

Dough Clinic / Re: Dominican Dough

Varun;

For a 12-inch pizza we use anything from 9 to 16-ounces of dough weight.

Obviously, the 9 and 16-ounce weights make a very thin and thick crust respectively, but these are more or less the extremes for a 12-inch pizza. I think anything between 11 and 12-ounces is a good starting point for most 12-inch pizzas, and you can adjust the dough weight accordingly from there to achieve the crust thickness you're looking for.

With proper dough fermentation (biochemical gluten development) and a stainless steel table, you shouldn't have any problem in opening the dough to 12-inches. One trick that I teach to our students is to use a dough roller/sheeter, or just a rolling pin, and open the dough ball to about 3/4 of the target diameter, then finish opening the dough by hand tossing or stretching on the stainless steel table top. I mention stainless steel as it is really easy to open the dough on it by the hand stretching method. On a wood table top the dough is very difficult to open by the hand stretching method.

New York Style / Re: Problems with Dough

Varun;

If you are looking to make a softer, more tender eating crust try adding fat, either as oil or shortening to the dough. If you add 6% fat (based on the total flour weight) you will get a softer eating crust with reduced chew/toughness, especially in the edge portion. In New York that toughness in the edge is a desirable feature, but in other market areas it is not. I've seen the fat levels as high as 15% in some pizzas crusts that had a very tender eating characteristic. One more thing, if you use oil, be sure to reduce the amount of water added to the dough by the same amount as you are increasing the fat content. Failure to do this can result in an excessively soft, and sometimes difficult to manage dough.

New York Style / Re: Problems with Dough

I have a number of different thin crust dough formulas posted in the RECIPE BANK at www.pmq.com. Go to their home page and the recipe bank will show up as a drop down under the heading of "culinary". Use the word "dough" for your search word.

Dough Clinic / Re: Dough problem

Aero;

What kind of cooler are we looking at using? A reach-in cooler limits your options

to sheet pans, while a walk-in cooler allows for the use of dough boxes or sheet pans. I like to use food contact approved plastic bags to cover the sheet pans as they can usually be reused a number of times, while Saran wrap must be discarded after every use. Both Saran wrap and plastic bags constitute a parasitic cost, while dough boxes, being more costly up front, are actually cheaper to use in the long term as there is no parasitic cost associated with them except for an occasional washing. In production, we typically don't need to wash the boxes after every use, we just scrape them out (they scrape out very easily) and reuse them. The sheet pans need to be scraped and washed after each use as the dough has a tendency to adhere to the metal pans, resisting all attempts to scrape them clean. Oiling the pans can alleviate this, but then you need to be very careful that the dough pieces don't skate around on the pan to form a cluster, you then end up with one large piece of dough on the pan on the following day.

Dough Clinic / Re: Dough Storage - Dough tray vs sheet pans

Norma;

When you first mixed the two doughs together the resulting dough became what we call very "bucky", meaning tight and elastic. You can see this very same thing happening if you take a dough ball that is properly fermented and re-round it just before trying to open it into a dough skin. When you allowed the dough to continue fermenting the gluten relaxed due to exposure to the acids and enzymes of fermentation, thus allowing the dough to become soft and extensible once again. This is why we always say to never re-round the dough balls just prior to opening them into skins.

Dough Clinic / Re: Question, about how two doughs mixed together became okay?

I've never seen "potable" water with a chlorine level so high so as to kill the yeast. While some municipal water supplies might reek of chlorine, there is actually very little chlorine in the water. Chlorine is a recognized carcinogen and as such it is regulated in drinking water supplies to I believe 100 parts per billion residual chlorine. Like I said in my previous post, I think the pH of the water will have a much more dramatic effect upon yeast performance than the chlorine content.

Dough Clinic / Re: can too much chlorine in tap water bleach out unbleached flour?

Craig;

Both salt and sugar can/will irreparably harm the yeast if allowed to remain in direct contact with it for any length of time. Both the salt and sugar will plasmalize the yeast by drawing the plasma material out of the yeast cells. To see this first hand, just take some fresh yeast (cake yeast) and put it into a container with some salt or sugar, the salt or sugar will begin to absorb moisture from the yeast, thus damaging it. True, it does take some time for this to happen, and if you are careful to not let the salt/sugar yeast mixture set for any period of time, little if any real damage will be done, but everyone isn't so diligent, that's why we always say not to allow the salt and/or yeast to come into direct contact with each other.

Dough Clinic / Re: can too much chlorine in tap water bleach out unbleached flour?

Neither, a loose fitting lid will work fine. I've used a piece of foil loosely crimped over the pan and that works fine, or you can oil the dough and put it into a bread bag, then twist the open end closed to form a pony tail, and tuck the pony tail under the dough ball as you place it into the fridge.

[**Dough Clinic / Re: dough storage advice**](#)

Actually, if you go back a few years ago, you might remember when Tony's introduced its Italian Pastry Crust Pizza. This was sold in the frozen food case at your local supermarket. It was a type of laminated crust, but rather than putting the fat onto the dough as an unbroken layer, it was added in the form of hard fat flakes and mixed into the dough toward the end of the dough mixing cycle, then, during the dough processing (forming) it was given several simple folds and reduced it thickness to about 3/16-inch, and die cut into skins of target diameter. During baking, the dough delaminated, and also produced voids where the fat flakes were, resulting in a finished crust with pastry like characteristics. Around this same time we saw pizzas that were made on a croissant dough base, made exactly as you have described, or very close to it.

[**Chicago Style / Re: Chicago crust from America's Test Kitchen**](#)

Hi Norma;

Just a cautionary warning.

Working with raw milk is like working with raw, shell eggs (like putting an egg wash on calzones). The milk or egg will be heated to a point where it is safe, BUT, cross contamination now becomes the issue, think about how aprons, towels, work surfaces might become contaminated prior to the heating process. Even your hands can/will contribute to cross contamination. Be smart, be careful, be safe.

[**Pizza Cheese / Re: raw organic milk mozzarella**](#)

Actually, no. When commercial bread is made with unbleached flour, the flour has that creamy color, but the color cannot be seen in the dough. Fast forward to the finished bread and you can see that same creamy color in the crumb that you saw in the flour. Due to the huge variation and inconsistency in the crumb structure of a baked pizza crust it is all but impossible to see the creamy color unless you actually do a side by side comparison of two different crusts, one made with bleached, and the other made with unbleached flour, then you can see an overall, slightly creamy or yellow color in the crumb of the crust made with the unbleached flour. However, when chlorine, or a chlorine like compound is added to the water, it lowers the water pH, making it more acid, which is not good for plumbing fixtures, so the municipality buffers the water back to close to 7.0 (neutral), but in many cases they actually get the water too high in pH (slightly alkaline), and this is what has such an adverse effect upon yeast activity (yeast is an acid loving organism). I know this because this is what our problem is here in Manhattan, Kansas. How do you correct for this, simple, just add a small amount of vinegar, or cream of tartar to your doughs to correct for the high pH of the water. You can also check your water pH by using some litmus paper strips available from any drug store. Also, remember not to mix the yeast with the salt, and/or sugar as they do not play well together.

[**Dough Clinic / Re: can to much chlorine in tap water bleach out unbleached flour?**](#)

Ron;

Forget the pizza! Don't get me wrong, it looks great, but the peel is even better!
Go into the peel making business!!

I bet there are a lot of readers here that would "belly up to the bar" to buy one.
Great work.

[**Stones/tiles/steel, Pans & Accessories / Re: Home Made Pizza Peel**](#)

IDY at 0.6% is about double of what we typically use. That amount will work OK for making bread, but I think 0.3 to 0.4% IDY will work better for you in pizza dough. You should also have taken the dough directly to the fridge after mixing and balling rather than letting it set out and ferment first. A fermented dough is very hard to cool when you put it into the fridge. If you still find the dough to fragile, increase the protein content of the flour by using all KA flour.

New York Style / Re: dough very stretchy and was tearing...

Wood peels (with a beveled edge) should be used as your prep-peel (the one you make your pizza on and then use to peel the dressed dough skin into the oven with). The metal blade peels are best reserved for spinning and removing the pizzas from the oven. I like to use use a mix of equal parts regular flour, semolina flour, and fine corn meal for my peel dust, but I've seen rice flour, whole wheat flour, wheat bran, corn meal, semolina flour, regular white flour, and even coarse rye flour used as a peel dust. Regular white flour is perhaps my least favored as it will scorch and take on a bitter taste, plus, it doesn't provide the same level of "slip" on the peel as some of the others do. Corn meal is perhaps the easiest to use as the dough just seems to want to slide off of the peel when it is used. Experiment to see what works best for you.

Tip: Just before putting the dressed dough into the oven, give the peel a to and fro shake to get it moving a little on the peel, then place it into the oven.

General Pizza Making / Re: from peel to oven....

Most home type, stand mixers, like the Hobart K5A have a very narrow dough hook configuration which does not do an especially good job of catching the dough, as a result, it may take a considerable time for it to sufficiently develop the gluten sufficiently for it to form a ball and actually begin mixing, so don't worry about the long mixing time. As for the bready crust condition, begin increasing the dough absorption to achieve a softer dough, this will expand more freely during the early baking stage (oven spring) resulting in a lighter, more porous crumb structure that will actually bake out better and produce a crispier finished crust texture.

Dough Clinic / Re: Dough problem

Adam;

We do cracker type crust this way and we use only 45% dough absorption. There is still a lot of dry flour in the bowl after we mix it, but by the following day, after 4-hours at room temperature plus overnight in the fridge, we have a cohesive dough mass that can be folded a couple times (literally) and then portioned and formed into balls (not very pretty dough balls). The dough balls are then allowed to ferment at room temperature until they can be opened into pizza skins using a rolling pin (remember, this is a thin, cracker type crust).

Dough Clinic / Re: Minimal kneading technique

Kate;

Neapolitan pizzas are a poor choice for a delivery pizza due to their thin crispy bottom crust. It either turns to mush or gets soft and leathery within minutes of going tint the box, not to mention the insulated bag where it will be nicely steamed for nearly 30-minutes. But id you insist: Reduce the oven temperature to 500, not more than 550F, and bake the pizza as long as possible, then place onto a cooling rack for about 60-seconds before boxing and bagging for delivery. This will allow a good deal of the steam to move off of the pizza before packaging. Another option that you have is to package the pizza on an ovenable disk, similar to what is used be Papa Murphy's on their take and bake pizzas, I'm thinking just a flat disk in this

case, the consumer is instructed to put the pizza into a HOT oven to dry and re-crisp the pizza. If they'll bake a take and bake pizza, why wouldn't they do this too? As I see it, those are your best shots.

Dough Clinic / Re: Advice on dough and cooking times for the perfect Neapolitan delivery pizza

Norma;

You should be able to make pizzas on a fried crust (think Indian Bread), like is sold at Arizona and New Mexico festivities. You could also roll the dough out very thin, cut into squares and fry. After frying, dust with a cinnamon sugar mixture and serve. You might also try making something like a fried breadstick, and roll it in a cinnamon sugar mixture after baking, or serve it with a small plastic cup of cinnamon sugar dipping icing (powdered sugar and water plus a little cinnamon). Here is one that might be a bit far out on the limb; Push a wood Popsicle stick into a length of Italian sausage (kept hot in your heated cabinet) then wrap it in pizza dough, and fry it like a corn dog, serve with a plastic cup if pizza sauce for dipping. Note: Some of these items will probably need to be fried submerged, so be sure to have a submerging screen handy when you're testing these out.

Dough Clinic / Re: Any New Ideas?

I make a great dessert pizza using a cheese base and fresh fruit. To make the cheese base:

16-ounces of cream cheese or creamy Ricotta

8-ounces powdered sugar

Mix together until smooth, then add 2-whole eggs (about 100-grams) and mix in well.

Then add 16-ounces of sour cream and mix until smooth and creamy. The mixture should have the consistence of mayonnaise or soft butter. If it is too stiff, add a little milk or cream to thin it slightly.

Apply about 1/4-inch thick to the dough skin, then add the fruit of your choice, such as thin slices of apple, banana, halved grapes, sliced strawberries, blue berries, Mandarin orange slices, mango slices, peach slices, or slices of kiwi. Bake as you would any thin crust pizza. Allow the baked pizza to cool for a couple minutes, then drizzle with a powdered sugar icing. Serve: Fresh and hot as is, or alamode, or serve it cold.

General Pizza Making / Re: White Sauce recommendations or recipes anyone?

Abe;

With yeast leavened products there is no need to make any adjustments until you reach about 7,000-feet (think Cree). With chemical leavening (baking powder) you do need to make an adjustment of roughly 8% less for every 1000-feet increase in elevation above from the elevation that the product was formulated at. You will find that the baking is somewhat different in Denver than in Chicago. I would recommend that you bake at 15 to 25F higher temperature.

Dough Clinic / Re: High Altitude

I make a quick and easy Alfredo sauce by cooking together 1/4 stick of butter, 1-cup of whipping cream, 2-cloves of garlic (minced) and 1.5 cups of Grated/powdered Parmesan cheese. To this I like to add a couple tablespoons of my home made basil pesto, or you could use any commercial basil or sundried tomato pesto.

General Pizza Making / Re: White Sauce recommendations or recipes

anyone?

My own personal favorite is an Alfredo sauce to which I add some basil pesto that I make from my home grown basil. This year we are drying tomatoes, it seems by the bushel, so I'm looking forward to making some home brewed dried tomato pesto and using that in the Alfredo.

The Alfredo sauce is great when making a chicken topped pizza, or even a vegetarian presentation. Try Alfredo sauce sprinkled with dried dill weed, and top with a variety of seafood, add some onion, a few slices of fresh tomato, top lightly with Mozzarella cheese and finish with a sprinkle of grated Parmesan cheese.

General Pizza Making / Re: White Sauce recommendations or recipes anyone?

We did a study on IDY a number of years ago and we found that unopened packages lost about 25% of their activity, as compared to fresh stock, when stored in a freezer for a period of two years. When we stored it in a south facing window for the same length of time the deterioration was in the neighborhood of 40%. That really isn't bad, all things considered. Once opened, the two mortal enemies of IDY are air and moisture. If you open a bag and plan to use it over the next two weeks you are probably better off storing it at room temperature (65 to 75F) as this will prevent condensation from forming on the yeast each time you remove it from the fridge and open it to use. If you will not be using it for some time, the best way to store it is to either leave it in the original bag, and roll the bag down tight onto the yeast, excluding as much air as possible, securing it with a rubberband, and then storing it in the fridge. The biggest mistake that people make when storing it is putting it into an air tight container that has a huge head space of air above the yeast. It is much better to place the yeast into a plastic bag, in this case, such as a Baggie, and press out the air before sealing it. This will ensure the best activity when you go to use it the next time.

Dough Ingredients / Re: How Long Does IDY Last??????

Peter;

I'd bet that Luigi is just doing it the way he learned to do it. I don't think abusing the yeast by re-hydrating it in cold water is the correct way to slow down fermentation, but to each his own. I'm in your court, in that if I want to slow down the fermentation I'll just save a few pennies and use less yeast, or adjust the temperature of the dough water to give me a slightly cooler dough off of the mixer, hence a slower fermenting dough, but that is using a technology that everyone is not familiar with, which, underscores one of my main objectives, to provide useful information and increase the technical understanding of the ingredients and processes that go into the making of our favorite food PIZZA.

Back when I first started at the PMQ web site I was accused of speaking and writing in a foreign language. That was the language of "bakers percent". Today they all speak that language over there, and many of the long time regulars have developed an excellent understanding of the more technical aspects of dough, sauce, and pizza production.

Dough Ingredients / Re: Yeast stopped working. Dough-y no rise-y anymore!

Norma;

I would recommend working in 5% increments based on the weight of the flour. So, begin with 5% addition of sprouted grain, then go to 10%, and work your way on up until you see something you really like, or don't like. I've probably mentioned this before, but one of the unique things that I found when I was doing a lot of

work with sprouted grains in bread dough formulas was the development of a malted milk like flavor....interesting. Also, if you have dried the sprouted grain, be sure to hydrate it in warm water before adding it to the dough. You just want the grains to be soft to the bite, not hard or crunchy. In this way the sprouted grains also provide a unique mouthfeel, much like that of a multi-grain bread.

As for the sun dried tomatoes, we have been using both our cheery tomatoes and the heritage varieties for drying. The cherry tomatoes we just cut in half, and place on the dehydrator trays cut side up. For the heritage tomatoes, I cut them into wedges, 4 to 8, depending upon the diameter/size of the tomato. I then cut each wedge in half, and place onto the dehydrator screens with the cut side up/skin down. We set the temperature at 125F and it takes about 14-hours until the tomato pieces are soft and leathery. It might take a little longer if the dehydrator is completely full. We then transfer the dried tomato pieces to a sandwich size baggie and place in the freezer for storage. To use, either add just as they are, or soak in a little olive oil for a few hours. When used in soups, chili, or stews, we like to add them just as they are and let them hydrate in the juice of the dish, but when we use them on pasta or pizza we like to soak them in olive oil first. They provide a WONDERFUL flavor.

Dough Ingredients / Re: Grinding Flour Fresh from a Wheat Field to Make a Pizza

I hear you loud and clear. Person after my own heart!

I teach pizza and bread baking to local farm families and one of the things that I try to get across in each session is that making pizza dough, as well as bread dough isn't rocket science, and toppings need not be expensive. I ask that each person attending the class clean out their fridge, and bring the "cleanin's" with them in a plastic bag. These become the toppings. We have used things like hotdogs, polish sausage, mashed potatoes, steak, pork chops, one lady thought she had me when she brought a bowl of bean soup. We blended it into the sauce to add a background flavor note. Like you, I also show how to use common toppings such as garden tomatoes and spice them up a bit to make some truly great pizzas. Making pizzas and breads at home can be a complex/technical, or as simple/easy as one wants it to be, and for the most part, it is all good, sometimes better than others, and sometimes even superb, but always a treat for the family, and ultimately, that's what it's all about. Having fun, making good food, and enjoying our mistakes as well as our masterpieces.

Welcome aboard!

General Pizza Making / Re: Pizza Anarchy

Here's my two cents worth.

ADY and IDY, the instant part of IDY is in reference to the rate of hydration for the yeast. IDY hydrates more quickly than ADY, this is why it can be added to the dough without prehydration, this is also why it tends to tolerate cold water hydrating better than ADY. The whole thing about prehydrating yeast is to minimize the flushing effect of cold water entering into the yeast cells and flowing out, bringing with it the plasma material from within the yeast cells (glutathione). When this happens, the yeast cells are not killed, but they don't ferment nearly as well as sound yeast cells do. Also, there is a reducing (softening) effect upon the dough from the glutathione. This may not be seen as readily by home pizza makers as it might be interpreted as just a little too much water, but in a pizzeria or other large production facility it can mean difficult dough handling properties, or even collapse of the dough at some point. Is it absolutely necessary to prehydrate IDY or ADY in water at specified temperature? In home made pizza dough, the answer

is no, will it hurt anything if you do prehydrate it? The answer again is no. So what is the benefit to prehydrating ADY and IDY? The answer is better, overall yeast performance and consistency. How hard is it to get a small amount of water at 95F for IDY or 100F for ADY? Not hard at all. Just remember that both of these temperatures are at near skin/body temperature, it only takes a minute, actually, just a few seconds.

Dough Ingredients / Re: Yeast stopped working. Dough-y no rise-y anymore!

Norma;

Because the sprouted grains are so high in amylase activity, you have two options, one is to dry them, but make sure they get above 160F during the drying process to make sure you have deactivated all of the amylase enzyme, or another option is to simply add the damp, sprouted grain very late in the dough mixing process, much like you would add raisins to raisin bread. I like to add them about 3 to 4-minutes before the dough mixing is completed. This limits the length of time the enzymes have to work so it also limits their effect upon the dough, while still contributing flavor and mouthfeel top the finished product.

Our garden is going great guns! We are sauteing the peppers and freezing them, and cutting all of the surplus tomatoes into small pieces and drying them (like sundried tomatoes) for use later in the year in stews, pizza, and soups. Squash is doing well too, but running out of ideas for using it. We are making a butternut squash soup once a week...really good!! And or favorite for zucchini and yellow summer squash is to grate two medium size squash (coarse grated), then fine grate about an inch of fresh ginger root. Then grate the zest from 1/2 of a medium size lemon, combine in a sautee pan and heat thoroughly with an ounce or two of butter. Add 1/2 pint of whipping cream and heat to a medium boil in the sautee pan, plate up wide noodles and spoon the squash over the two plates equally, sprinkle with Parmesan cheese add a little black pepper to taste, and enjoy!!

Dough Ingredients / Re: Grinding Flour Fresh from a Wheat Field to Make a Pizza

Hi Norma;

When comparing the nutritional properties of a whole-wheat crust against those of a crust made from enriched white flour, the whole wheat crust has a much higher fiber content (which is good for you), but the crust made with enriched white flour has an equally as good nutritional profile (it's enriched to the same nutritional profile as whole wheat flour), or possibly better due to the additional fortification of folic acid, but as indicated above, it is still lacking in fiber content. I guess it all depends upon your definition of "more nutritious". Putting on my technical hat for a moment, I would say that for women of child bearing age, the crust made with enriched white flour would be the better pick due to the fortification of folic acid. Personally, I like the texture and chew of the whole wheat crust, as for flavor, yes, it is different due to the bran being present. At home, I cannot tell you the last time we bought white bread.

By the way, did you finally get those garden pests under control?

Dough Ingredients / Re: Grinding Flour Fresh from a Wheat Field to Make a Pizza

Wow, In our microwave, that much water for 50-seconds at full power the water will be very hot. The thermal death point for yeast is about 140F, or a little less. It could be that the water was too hot and killed the yeast. For hydrating the yeast (ADY) you want to use 100F water (use a thermometer), if you are rehydrating IDY the correct water temperature is 95F.

Yeast does have a shelf life. If it is unopened, IDY will have about a 1-year shelf life, while ADY will have about a 6-month shelf life. Once opened, you will probably see some loss of yeast activity (but not total loss) after two weeks for either IDY or ADY, and you should try to use it up within 30-days. Yeast is cheap, and it just makes good sense to use fresh yeast whenever possible. By the way, we have kept IDY, in unopened packages, in the freezer for up to two years and only lost about 25% of the yeast activity, not bad, all things considered.

Dough Ingredients / Re: Yeast stopped working. Dough-y no rise-y anymore!

Oz;

Part of your problem might have to do with the dough temperature. What is the temperature of the dough immediately after mixing?

We normally look for something in the 80 to 85F range, but this is not hard and fast, so it can vary to some extent.

Try forming the dough into a ball after mixing, wiping it with oil and placing it into a bread bag, then twist the open end into a pony tail and tuck it under the dough ball as you place it in the fridge (DON'T TIE IT CLOSED). Allow the dough to ferment overnight (16 to 48-hours), then bring the dough out of the fridge and allow it to temper AT room temperature for about 90-minutes, turn the dough out of the bag into a bowl of flour, turn the dough ball to thoroughly dust it with flour, then pick it up and dust off the excess flour, place the dough onto a lightly floured surface and, using a rolling pin, roll the dough out to about 2/3 of the diameter you want to have. Now, using your hands, begin stretching the dough out to the desired diameter, making sure to keep your fingers about 1/4-inch away from the edges. This will help to give the finished crust a nice raised edge. From that point on, process it in your normal manner, then with a bit more practice, you will become more proficient, and make a better looking, more uniform skin each time, and enjoy some great pizzas along the way.

Dough Clinic / Re: Dough not uniform.....

Peter;

You are correct. The usual recommendation is to use about 4 to 5 times the weight of yeast as water to hydrate it in. When I teach home pizza baking most of the time we are using a pound or more of flour so the total weight of water will be at a cup or more, putting the amount of water used for hydrating the yeast in at most 1/2 cup, but probably better at 1/4 cup or even a little less. I stand corrected.

The main thing I try to teach is that the amount of water used to hydrate the yeast in isn't as important as having enough water left over to add at a lower temperature to achieve the desired finished dough temperature.

Thanks for calling that one.

Dough Clinic / Re: Minimal kneading technique

Adam;

I'm like you, and firmly believe in the KISS principal, so, following this rule, I like to say "use between 1/2 and 1-cup of water to hydrate the yeast in."

One question that I always ask our students: What one common denominator do water, electricity and man all have in common?

Answer: They all take the path of least resistance.

I'm with you, keep it simple.

Dough Clinic / Re: Minimal kneading technique

PC;

The only aromas associated with clean, whole-wheat flour, bought as a ready milled

product, or milled at home are 1) A grainy aroma which is normal. 2) A rancid aroma, slightly sharp and heavy. This is not a desirable aroma as it is due to rancidity of the wheat/flour. Whole-wheat flour will go rancid within a month of milling if not correctly stored (frozen or refrigerated) due to the germ oil being present in the whole-wheat flour. I would consider any other aromas to be "foreign".

One of the foreign aromas that we pickup occasionally is a musty aroma (think old, wet/damp newspapers), this can be caused by improper storage of the flour or wheat prior to milling/grinding. In this case the wheat/flour was stored in a damp location and it may have begun to mold (reason to discard). In some baked products made with whole-wheat flour we find a fruity/melon like aroma. This aroma is due to "rope" spores. Rope is a spore forming bacteria that is not destroyed during the baking process, and is in fact activated in the oven. It manifests itself by forming the characteristic aroma. Rope is soil borne, so it tends to be more prevalent in whole-wheat items, but it can still affect products made with regular white flours too. Rope is not dangerous, but the aroma is not desirable, so any products found with this aroma should be immediately discarded. In a bakery setting the rope infection can be transferred to other parts of the bakery making it extremely difficult to get rid of. FYI: Vinegar will kill rope spores on contact. So if you ever find that you have this pesty little number as a visitor to your kitchen, just wipe everything down with a sponge or towel soaked in regular, household vinegar.

Dough Ingredients / Re: Whole wheat cinnamon smell?

For the Provel cheese try a blend of 75% Provalone cheese and 25% Velveeta cheese.

Cracker Style / Re: St. Louis (Imo's) Style Crust

Yep, some way or another it got contaminated with cinnamon. They are both dark in color, and someone might have gotten the two confused, or failed to wash out a cinnamon container before filling it with whole-wheat flour. You should bring this to the attention of the manufacturer along with a sample of the flour. The ramifications of an error like this could be devastating, so please bring it to their attention as soon as possible.

Dough Ingredients / Re: Whole wheat cinnamon smell?

JJP;

Actually, we do a pizza school. It is a pizza class that we offer once a year, we've been doing it for over 25 years now. The name of the class is Practical Pizza Production and Technology. Before getting into dough formulations, sauce formulations, etc., we cover the basic function of ingredients that make up each of the component parts of the pizza (dough/crust, sauce, cheese, and meat toppings, then we go on to pizza pans and tools, this year we are adding a presentation on (POS) systems, and a suppliers presentation period, then we go into the fun part and begin making dough and sauce, followed by lots of pizzas. The class is designed for everyone from home pizza makers thinking about opening their own shop, to existing store owners wanting to know more about the technology side of pizza production. To learn more about this class, go to our web site at <www.aibonline.org> and look under seminars/ School of Baking.

Newbie Topics / Re: Pizza School - 101

Adam;

Due to the fact that during hand mixing of the dough there is a possibility that the

ingredients, especially the yeast won't be uniformly dispersed throughout the dough mass. This is the reason why we like to suspend the compressed yeast in the water prior to adding it to the dough. In the case of ADY, it has to be pre-hydrated in water at 100F before addition, but once it has been hydrated, you can safely add it to the regular dough water for addition. In the case of IDY, while it doesn't need to be pre-hydrated when a mechanical mixer is used, when hand mixing, it is suggested that it first be pre-hydrated in 95F water, and then added to the regular dough water for addition.

Folding the dough is indeed the same as kneading it, but in this application we are only folding/kneading it a few times, not for several minutes as many typically do. When forming the dough piece into a pizza skin, we begin opening the dough ball from the center out, without ever touching the outer edge of the dough piece. This provides for a light, very porous rim to the baked crust. In some cases we will use a rolling pin to pin out the dough ball to only about 2/3 of the desired diameter, and then complete the opening process by hand stretching. This process also results in a decent raised edge. The main difference between mechanical gluten development and biochemical gluten development is that biochemical gluten development, when taken at the right time gives you full gluten development without any toughness or memory in the dough, while a dough that is mechanically mixed to full gluten development will be tough and rubbery. There is nothing to fear when hand mixing or kneading and then giving the dough time to ferment for biochemical gluten development as this will not result in excessive gluten development, but do keep in mind that the time needed for complete biochemical gluten development may be a little shorter when a significant amount of kneading has already been done to the dough. I hope I have answered your questions, please feel free to ask if you should have any more questions.

Dough Clinic / Re: Minimal kneading technique

As mentioned, the Hobart N-50 is a beefed-up, industrial version of the K-5A mixer. It is also a gear drive rather than a rheostat drive, so the speeds are much more positive (consistent) when under a load. Another, often over looked mixer suitable for home use is one of the Hobart bench top mixers such as the A-120 or A-200. These are 12 and 20-quart capacity mixers respectively. I see them being offered at restaurant sales and on the internet from time to time. They are both 110-V, but they will probably require a dedicated circuit of 15-amps, or, you can do as we do at home, use a regular wall receptacle, and just don't use anything else on that circuit while the mixer is running. Note: While these are called bench top mixers, they are still a fairly large mixer, too large for the common home counter top, but we got around that by putting the mixer on its own stand, this lowers the mixer height making it easier to use, and we can easily roll it aside when it is not being used.

Mine is an A-120 that I got with three attachments (whip, hook, and flat beater/paddle) when a local restaurant went out of business for just under \$1,000.00, expensive, but I'll never need to buy another one.

Prep Equipment / Re: Another "need mixer advice" thread...

What you have described for rolling the dough out on "greased" foil is exactly what we do when making a pan style pizza. We use Crisco, margarine, or butter in the pan, then place the fermented dough ball in the center of the pan and push it out to the edges of the pan using your fingers. The dough adheres to the fat and doesn't slide around as it does with oil. We do this same thing using a coupe pan for thin crusts when we want to hand stretch. Just wipe or spray the coupe pan with the fat, and then roll the dough to just about full diameter, and finish stretching the dough

to the pan size by hand, then dress and bake as normal.

General Pizza Making / Re: the secret to ULTRA-THIN crust!

Pete;

Another good trick to getting the dough to stay put in the corners of the pan is to first put shortening (Crisco) in the corners of the pan, then use olive oil on the rest of the pan. The dough will adhere to the shortening and help it stay put until the dough relaxes sufficiently so as not to pull back out of the corners. This trick also works well when you are trying to get the dough to hold to the vertical sides of a round pan too.

General Pizza Making / Re: Techniques for Forming a Rectangular Dough

Here's another option to using sauce. Use thin slices of fresh tomato rather than "sauce". Slice a ripe tomato (any garden variety works well) into approximately 3/16-inch thick slices and arrange as you would sauce, except, you don't need to go for 100% coverage as you would a sauce, just arrange around the edge, keeping an exposed dough edge of about 1/2-inch, then fill in to the center, don't worry about the gaps between the round slices. This makes for a wonderful flavor as well as presentation.

Newbie Topics / Re: American Style: How much sauce?

Regina;

If you haven't already done so, do a Google search using the search word Celiac, or Celiac Diet. This will expose you to the world of gluten-free, which also includes many other food allergies too

www.celiac.org

www.csaceliacs.org

www.glutenfreediet.com

www.celiac.ca

www.wellnessfoods.com

www.glutensmart.com

www.glutenfreemall.com

www.amazinggrains.com

Hopefully some of these will provide you with some direction.

New Forum Members / Re: Hello from Knoxville, TN

Actually, the metal peels are meant for removing the pizzas from the oven, while the wood peels are meant for use as "prep" peels. The wood doesn't result in condensation formation between the peel and the dough during the prepping of the dough skin, while a metal peel will. Think of it like this, cool/cold dough and warm peel. While there are any number of favorite recipes for peel dust, my own personal favorite is as follows: Equal parts of white flour, semolina flour and fine corn meal.

Chitchat / Re: pies stick to the peel when starting out

Something to be aware of:

We offer a pizza class every year in October, here in Manhattan, Kansas. It is designed for both experienced and soon to be pizzeria operators. In the class we teach everything from the technology of the different ingredients, to how to make dough, sauce, and assemble pizzas, including all of the various dough shaping procedures. This is a fun filled week long class with both classroom and hands-on instruction. You can get more information on the class by contacting Jeff Zeak at <jzeak@aibonline.org> and requesting information on the Practical Pizza Production Course.

[New Forum Members / Re: going from greek style pizza to ny style pizza](#)

Bill;

Rerun the test a couple more times to see if you get the same results.

Peter is correct in his assessment, but if there is a difference, it should be consistent and occur each time you run the test.

[General Pizza Making / Re: What Happened To My Dough?](#)

No, the California thin crust is moderately thin and crispy, more crackery than what you have described. What you have described sounds more like a Philadelphia style crust. This type of crust gets its characteristics from the high oven temperature (800F) that it's baked at along with the requisite short baking time, typically about 90 to 120-seconds. Paper thin, crispy, but does not maintain the crisp for very long.

The dough is a pretty basic one, just flour (high gluten), salt, yeast and water. The formula looks something like this: Flour: 100%; Salt: 2.5%; Yeast: (compressed) 1%; Water: 60%. The Dough is allowed to ferment overnight in the fridge, then opened into dough skins on the following day, and baked directly on the oven hearth. In Philly they eat this type of pizza with a knife and fork.

[Dough Clinic / Re: thin crust dough](#)

Jay;

Deck temperatures of 500 to as high as 1000F have been used to bake pizzas, but we see temperatures of 600 to 850F used more commonly for traditional, or rustic type of pizzas. I think you will do well if you are getting your stone up to 850F. Just be sure not to use any, or very little sugar in the dough. Don't use any eggs or milk either as these will only lead to excessive crust color development or excessive charring at those temperatures. If your finished pizzas lose their crisp too fast, you may want to consider reducing the baking temperature, allowing for a longer bake and better crisp on the bottom of the pizza. You may also need to balance the bottom (stone) temperature with the bake to the top of the pizza. If the bottom is done, but the top is still not done to your liking, you may need to lower the temperature to allow more time for the top of the pizza to bake. It is a bit of a balancing act.

[Dough Clinic / Re: Pizza stone surface temps for cooking pizzas](#)

Mike;

The problem with placing the stone, or the pizza at the top of the oven is the excessive top heat that the pizza receives there. Pizzas are best baked from the bottom up. By placing the stone and pizza low in the oven, they are closer to the heat source, while the excess heat rises to the top of the oven allowing the pizza to be baked longer for a crispier crust without burning the toppings.

In some of the very large wood burning ovens with 4 to 6-inch thick decks, and high oven crowns (ceilings) we often use the oven peel to raise the pizza up into the crown of the oven, where the heat is much more intense, to achieve the desired level of top color to the pizza (usually a dark brown color to the cheese, but not burned).

[New York Style / Re: Thermal question](#)

CP;

Good lookin' pizza!

You're right about the longer baking time helping to make a firmer crust. This is why I seldom ever use much, if any sugar in my doughs, as it allows me to bake the

pizzas longer without developing excessive crust color.

General Pizza Making / Re: 2 Hour Dough Rise Pizza Cooked Well Done

Essen;

If you dough will handle it, I would suggest adding a little more water. Dough absorption can be somewhat variable, so my advice to get a more open cell structure would be to begin adding incrementally more water. When the dough begins to get difficult to handle you will know that you are at or near the limits of your flour/dough. Once you are at that point, if you still don't have what you want, begin increasing the yeast level, but keep in mind that as you do this, one result might be a loss of refrigerated holding time.

New York Style / Re: Essen1's NY-style pizza project

Craig;

It is true only for top brewers yeast as it ferments at roughly the same temperature range as bakers yeast. The bottom fermenting yeasts ferment at a temperature lower than what bakers and top fermenting brewers yeast can ferment at. As a result, there is a difference in the balance of acid and alcohol formed, hence a difference in flavor too.

Dough Ingredients / Re: coopers brewers yeast?

Peter;

Your memory is better than mine!

I might add a few updates.

We now recommend that the par-bakes be given only about 1/2 of the normal sauce application, and no cheese. This allows the par-bakes to be stored at room temperature during the day without issues from your local health department. It also allows for the addition of sauce again when dressing the crust for improved freshness and flavor.

The slice is then dressed to the order, and shredded cheese is applied to hold it all together. I have been recommending Grande Whole Milk Mozzarella because of its flavor, but any good, flavorful cheese will work. Keep in mind that you are not adding all that much cheese to the slice, and considering your return on a 16 or 18-inch pizza, cheese cost is not a big issue, at least it shouldn't be. Quality and taste/flavor should be consideration #1.

I have worked extensively with XLT oven company to identify a profile that works very well with their ovens. Profiles for other makes of ovens can be worked out, but I haven't worked with any of them to do that yet.

The Hex Disk from Pizza Tools.Com is the only carrier/disk that we recommend for baking the slices on with this process as it sheds any spilled toppings, such as cheese like water off of a duck's back.

We have the total bake time for a slice down to 3.5-minutes and 4-minutes for a whole pizza. So you can see the potential for a high volume store.

Chitchat / Re: Reheating Neo-Napolitan vs. New York Slices

Scott;

Even when stored in the freezer, flour will gradually change with storage time. The most significant change will be in oxidation of the flour. This has a significant strengthening effect upon the flour as far as dough performance is concerned. If the flour was "natural" or not fully matured when originally tested, and then put into the freezer for an extended period of time, and retested, say, a year later, it would perform differently, probably exhibiting more oven spring and a higher raised edge than the first test.

Dough Ingredients / Re: Question re: Storage of flour

Nat;

Actually, if your dough is properly fermented, it really doesn't need to be docked at all. But if you want to dock it, keep the docker about 1/4 to 1/2-inch away from the edge of the dough piece to allow for a nice raised edge. Also, the best dough docker will have very blunt pins, not sharp and pointed. The purpose of the dough docker is to lock the top and bottom parts of the dough together (like spot welding) to control bubbling. If you hold a salting or club cracker up to the light, you will see that the docker holes actually have a thin membrane of dough/crust closing the bottom of the docker holes, this is what a docked is supposed to do. The dockers that we use actually have square/flat tips rather than pointed tips.

Dough Ingredients / Re: how to make a donatos pizza(want it to taste like the real thing)

Bill;

What kind of pizzas are you making. If you are trying to make a hearth style pizza in an air impingement conveyor oven, Pizza Tools.Com has a Hearth Bake Disk (cloud pattern) that is designed specifically for this application. You must reset the oven temperature to between 465 and 500F, and delete all sugar, eggs, or milk from the dough formula. The pizzas made on these disks are very similar to those baked directly on a stone hearth. If you were to try this on a screen you would get a totally different bottom with a hard "pizza bone" around the edge. You might contact them to get a disk or two to work with for testing purposes. We have discussed these disks quite a bit in the Think Tank at <www.pmq.com>.

Stones/tiles/steel, Pans & Accessories / Re: conveyor oven - stick with the screens or is there something better ?

If you brown the flour in the oven, you will still destroy the gluten forming properties of the flour.

There may be an opportunity to get the flavor that you are looking for by using a roux as an added ingredient to the dough, by that I mean adding it at somewhere's between 5 and 20% of the total flour weight. You might need to beef up the protein content of the dough a little through the addition of some vital wheat gluten (available at most supermarkets). In this case we're looking at the roux only as a flavoring material. A good level of added gluten to add, for openers, would be 15% of the weight of flour in the roux that you are adding. You will need to take into account the water and oil content of the roux as well as the hydration requirements of the gluten (for each ounce of gluten that you add, you must add 1.5-ounces of additional water). It might take a little experimenting, to get the absorption just right, but I think it is "doable".

Dough Clinic / Re: Roux pie

The reason for making a roux paste/flour is because it does not contribute to a stringy gravy because you have destroyed the gluten forming properties of the flour. Hence, you would not get a very good pizza if you made it in this manner. Please let me know if I misread your question.

Dough Clinic / Re: Roux pie

Yeast and salt do not play well together, especially for 20-minutes. There is an excellent probability that you damaged the yeast by mixing it with the salt. You also don't say what the water temperature was that you made the yeast-salt suspension with, but if it was much above 100F again, you could have caused some damage to

the yeast. Try again, but this time, try this, use a thermometer to get your water temperature to 95F. Put the yeast into the water and stir to suspend, add to the dough and mix in for a couple minutes, then add the salt, no need to suspend in water, and continue mixing as you normally would. Check your finished dough temperature after kneading, it should be in the 80 to 85F range. See if this doesn't give you better yeast activity.

[**Newbie Topics / Re: First time using KASL flour... no rise?**](#)

Dan;

Pizzas are baked from the bottom up, to get a stronger bottom bake you will need to reduce the top heat in your oven. The color of the stone doesn't make any difference in this case as you are baking with latent conduction heat. Commercial pizza ovens all have some facility for balancing top and bottom heat. You mention convection, which is nothing more than heat transfer through fairly gentle airflow, but, convection does increase the top heat significantly, so you might want to see if you can turn off that feature in your oven. Also, by placing the pizza lower in the oven, you will create a higher crown height in the oven, which is just another way of saying that you are moving the pizza further away from the top of the oven where it is the hottest (heat rises), thus, you will reduce top heat, and because you are moving the pizza closer to the heat source, you are also increasing the bottom heat, just the ticket to getting a better baked pizza.

[**Newbie Topics / Re: Bottom-Cooking Issues**](#)

Norma;

With a whole-wheat flour, or multi-grain blend, it is all but impossible to achieve full hydration unless some form of a soaker is employed. In this case the soaker is water, whole-wheat flour and salt. It is set aside and allowed to hydrate for roughly 12-hours. I normally allow 1 to 2-hours or overnight in the cooler, to hydrate the whole-wheat flour. Failure to use a soaker can, and usually does result in a dry, stiff dough that doesn't expand well during baking (lacks ovenspring) and has a dense, heavy crumb structure.

[**Specialty-Grain Pizzas / Re: 80% Whole Wheat with Levain**](#)

Bob;

We have never found there to be a difference in flavor of the baked products made with either bakers or brewers yeast. It is not a good idea to freeze fresh yeast/compressed yeast as this significantly impairs its activity due to damaged yeast cells resulting from being frozen.

[**Dough Ingredients / Re: coopers brewers yeast?**](#)

Pat;

You New Yorkers are just in love with corn meal. LOL :)

Because they use reel type ovens so much in Chicago, they like to use some type of carrier under the pizza, screen or disk to prevent getting all that corn meal into the oven. Smaller stores with deck ovens certainly do bake right on the deck, or bake on a piece of parchment paper (not my favorite). But those true, Chicago style deep-dish pizzas are baked in a 2-inch deep pan. As for the long baking times, in Chicago, it is common to wait 45 to 60-minutes or more.

[**Pizza Ovens / Re: Stones for Bakers Pride Countertop Oven**](#)

I'm betting that fermentation is the culprit here. Any variations in the amount of fermentation that the dough receives would account for what you are seeing. Some of the things that can influence the fermentation are;

- 1) Variations in the dough temperature.
- 2) Variations in the amount of yeast.
- 3) Variations in the amount of salt.
- 4) To a lesser degree, variations in the amount of water used in making the dough.
- 5) The temperature at which the dough is fermented.
- 6) The time to which the dough is subjected to fermentation.

The dough temperature should be as constant as possible. Use a thermometer to measure the water temperature as well as the finished dough temperature.

If possible, scale rather than volumetrically portion the salt and yeast as small variations can make a big in the way the dough ferments.

Try to place the fermenting dough in an area where the temperature is as constant as possible. Many like to use the cooler for long, but consistent fermentation times. Keep in mind that doughs made without any shortening/oil will always be somewhat tough and chewy. To see a good example of this, just buy two packages of tortillas, one with normal fat, and the other fat-free.

To some extent, variations in baking can also influence the texture of the finished crust too, crusts that are not baked quite as long will tend to be tougher and more chewy.

Dough Clinic / Re: Neapolitan pizza cooling down

Norma:

In addition to your pizza baking skills, I'd say it is time to develop a good recipe for groundhog. Young groundhog, pressure cooked to make it tender, breaded and pan fried is hard to beat. Hate to say this but.....it tastes just like chicken.

Yes, I am serious. Just like chicken!

Sauce Ingredients / Re: Can Anyone Help Me With This Insects on my San Marzano Tomatoes?

Peter;

I see where you are coming from. Yes, those dough formulas do contain soda, but not in the context of just soda alone. The soda in the formulas that you have referenced is shown as a constituent part of a leavening system. That is why it is shown in brackets. As you will note, there are also leavening acids included with the soda, such as Monocalcium phosphate (MCP), sodium acid pyrophosphate (SAPP), there can also be glucano delta lactone (GDL), sodium aluminum phosphate (SAPP), and now that sodium reduction is all the rage, look for calcium acid pyrophosphate (CAPP) to become more popular.

Dough Ingredients / Re: Sodium Bicarbonate

Eve;

Fear not! Both great tasting breads and pizza are a snap to make at home. Your first attempts may not be gourmet, but they Will taste good, and that is the fun part, testing, eating, testing and improving, and eating some more. I have a home made pizza dough recipe posted in the RECIPE BANK at <www.pmq.com>. When you get there, look for the drop-down under "culinary" where it says Recipe Bank, click on this and use "dough" for your search word, scroll through the formulas until you find my home made pizza dough recipe. Send me a message and request my home made pizza dough recipe and I'll be glad to send it to you along with suggestions for making home made bread by a procedure that is super convenient, and won't give you biceps like the village blacksmith.

New Forum Members / Re: Hello from Arkanasas!

Pat;

You might look at some unglazed floor tiles as an option for the deck material. It doesn't have to be a single piece, just set them in place and they will work just fine. Since you're making a Chicago thin crust pizza, you will want to bake on a disk or screen, and not right on the deck any ways. Look for a baking time of about 30-minutes at 475F. Remember, a Chicago style thin crust is only crispy around the outer edges, that is why those pieces go first when the pizza is brought to the table. The remainder of the pieces are soft and foldable, but Ohhhh, so good! Lastly, remember to party cut the pizza, never wedge cut it. (An ex south-sider from the "Windy City")

Pizza Ovens / Re: Stones for Bakers Pride Countertop Oven

How much, how many slices of what diameter pizza are you eating?

New Forum Members / Re: Hello from Rochester, NY

Dan;

Typically, you would look at the starter as an ingredient. So the first thing to do is to determine how much starter to use. Since all starters are different, you will need to experiment to find out how much to use. For starters, you might begin at 5% of the flour weight, and then work from there. Once you have the amount of starter determined, the next thing to do is to determine as close as possible, how much water is in the starter. Subtract that amount of water from your total absorption and you're good to go.

Starters/Sponges / Re: Calculating Starter Amounts

Mario;

We are always more than glad to assist anyone where ever we can. If you are in need of some good dough formulas/recipes, I have a number of them posted on the PMQ (Pizza Marketing Quarterly) web site in their RECIPE BANK. You can access them at <www.pmq.com> and click on the Recipe Bank. It will be one of the drop downs under the Culinary heading. Be sure to use only "dough" for your search word for the dough formulas, if you use pizza, or pizza dough you will get the different types of pizzas.

I've even taught pizza production to prisoners and street kids. They all love the pizzas, and soon learn if they do well they can eat some of their pizza creations, and once they have created their own pizza, and find out how good it tastes, you will have their attention. From then on it is easy t work with them showing them how to make many different types of pizzas, and from there, you might be able to get some local support to help them transition into a pizzeria. One place that I worked with has its own pizzeria that they use to train the kids in, they are kept busy working and learning about pizza, so they are off of the streets, and eventually graduate to work in another pizzeria, or hopefully, with assistance from the local Government, go into business for themselves. Give a man a fish and he can have a meal, teach a man to fish, and he can feed himself for a life time. Give a man a pizza, and he will have a great meal, but teach a man how to make a pizza and he can go into the pizzeria business!

Good luck with your endeavors!

New Forum Members / Re: New Member

Not too shabby! To correct for the streaking on the top, try brushing the entire top and sides with a light coating of olive oil just before you place it in the oven. For a little extra pazzaz you might try sprinkling the top with a little shredded Parmesan cheese too just before you place it in the oven. You can also experiment with different types of cheese in the Stromboli too. My own personal favorite is a 50/50

mix of whole milk Mozzarella and creamy Ricotta. The Mozzarella helps to bind the Ricotta so it isn't so runny when hot. Also be sure to try things like fresh basil, or sundried tomatoes mixed in with the cheese. I also like to think outside of the box with a breakfast Stromboli filled with scrambled egg, sauteed onion, mushrooms, toasted bacon bits, breakfast sausage, and fresh tomato. For the cheese I like to use a blend of Ricotta and sharp cheddar. I hope this gives you some more ideas and motivation to continue your experimenting.

Other Types / Re: My first stromboli ! Pictures inside

#13;

You sound like a person of my type; the trip is better than the destination; the quest is better than the prize; the hunt is better than the kill; etc. The quest for the "perfect" pizza is actually much better than the pizza itself. There is no greater disappointment in life than to discover that you have fulfilled all of your life's quests. Wait a minute Lord, can you give me just one more hour? I think I may have the solution to the perfect pizza, and I've just got to test it! To my way of thinking, that's not a bad way to check out. Have fun on your quest, and be sure to enjoy a lot of great pizza along the way.

Neapolitan Style / Re: Burnt Pizzas -why are people tolerant?

Actually, brewer's yeast and baker's yeast are essentially the same. The only real difference is in their tolerance to alcohol. If I remember correctly, baker's yeast will tolerate about 12% alcohol and brewer's yeast will tolerate about 13% alcohol. While this may not seem like a lot, it is huge when you are a brewing company fermenting for alcohol. When I was in Saudi Arabia many years ago I would read about some poor fellow getting caught at the airport trying to smuggle in some brewers yeast, with a VERY harsh penalty). You could buy baker's yeast in the local market, and we used it to make beer, wine, and some distilled alcohol spirits. Like I said, they're essentially one and the same.

Dough Ingredients / Re: coopers brewers yeast?

Two things about this video.

- 1) He has done this more than once or twice! He is very good at what he is doing, and from a sitting position too! Wow!!
- 2) High tech ovens are not always needed to accomplish the task at hand.

Thank you for sharing.

Chitchat / Re: World's Largest Pizza Skin!

OHhhhhhhh, that pie sure does look good!

Right now I'm working on a project that calls for making different types of pizzas with dehydrated potatoes either in the dough (actually works quite well) and as a topping (think mashed potatoes applied with a decorating bag and a star tube), topped with bacon bits, ham/Canadian bacon, onion, and a cheddar-mozzarella cheese blend. Also thing about what can be done with shredded potatoes mixed with a little whole egg and flour to make a potato crust (par-bake) and then top either as a breakfast pizza, or as a gluten-free pizza. Potatoes are possibly one of the most overlooked health foods that really seems to work well with pizza.

Have fun, and enjoy those potato pizzas!

Thick Style / Re: Potato Pie

Dan;

Just about each and every starter is different from any other one. This is why some starters or sours will sell for as much as \$20,000.00. Did you know that Panetone (a

type of Italian fruit bread) is traditionally made from a sour? And it goes without saying that San Francisco Sourdough bread is also made from a sour, but with a significantly different resulting flavor profile. True, sours and natural starters are made up of a mix of wild yeasts and an assortment of different types of bacteria. It is the specific strain(s) of each, and the mix of them that is responsible for the performance of the sour or starter. In Mexico a starter is commonly used for some types of breads, and the way they make the starter is to save a quantity of dough, to this they add water and flour to feed / propagate it, then they use a portion of this to culture the new dough. Since the original dough is typically made with baker's yeast as the dominant microflora, if it is properly managed, baker's yeast should remain the dominant strain of microflora, and the flavor profile will not change very much, but occasionally, something goes wrong, the starter is left uncovered, or it is allowed to stand at an incorrect temperature (one that is not conducive to the propagation of the baker's yeast) and the starter is lost, meaning that it either doesn't perform as well as it used to, or it imparts a different, and usually undesirable, flavor to the finished product.

Developing and maintaining a sour or starter is a fun undertaking, and also to some extent, an art form where bread flavors are concerned.

Starters/Sponges / Re: Starter Falls Flat

This reminds me of the time when WFO pizzas first came to Chicago, Illinois, back in the late 1970's. The number one complaint was: "My pizza is burnt!" As a resident Chicagoan, (since displaced to Manhattan, Kansas) I can attest to the fact that pizza lovers in Chicago at that time were not used to, or seldom exposed to, char of any persuasion on a pizza. Hence, if there was any char on the crust it was deemed to be burnt. With time the good people of "The Windy City" were educated in the different types of pizza, and today, char is considered to be just another characteristic on some types of pizzas. The amount of char on a pizza is purely the preference of the pizza maker, some like more, some like less, some don't like it at all. I will say this, if you have ever had an English muffin that was toasted, you probably ate something with a good bit of char on it, and for the most part, the char really adds a dimension of flavor to the pizza crust that just plain old "browning" can't provide. As for pizza char at the restaurant v/s char on a home made pizza, any commercial pizza oven worth having has pretty decent control, in one way or another between top and bottom heat (baking properties) allowing you to get a perfectly baked pizza with a controlled amount of char. Pizzas baked in a home oven, being a kitchen range, or outdoor/backyard WFO typically don't have all of the design features of a commercial oven to allow for this kind of control during the baking of the pizza, hence control of the char is somewhat more problematic, but more importantly, those home baked pizzas are a personal accomplishment, sometimes the end result of a lot of hard work and dedicated time to making a great tasting pizza with the tools at hand. This is why we see so much variation in the amount of char on home made pizzas, it's just the way it is, plus, one other important fact. When I make pizza at home, it is to MY liking, not my customer's, so if I just happen to like a lot of char, you can bet that it will be there by some design.

Neapolitan Style / Re: Burnt Pizzas -why are people tolerant?

Norma;

Yes, I've used my own sprouted wheat to make both pizza and bread doughs. When thoroughly dried, and very lightly toasted, to destroy any enzymatic activity, the finished result will be a malted milk flavor in the baked bread or crust. Since I never was a fond lover of the breakfast drink Ovaltine (malted milk flavor) or

malted milk balls (candy), I never persued the flavor.

Dough Ingredients / Re: Grinding Flour Fresh from a Wheat Field to Make a Pizza

You are correct in that high absorption doughs are easier to roll out using oil rather than flour. The oil also helps to darken the finished crust color too, just as painting oil on the edge of the crust before baking helps to darken it when rolled out in flour. Commercially, we have the Celeste brand of frozen pizzas that are actually fried, not baked. and many crusts that are formed using the cold press forming method utilize an oil soaked dough ball to improve the forming properties of the dough under the cold press. You can identify a cold pressed crust by looking at the bottom. If it has raised circular rings, creating what appears to be a bulls eye pattern, you have a cold press formed crust in your hands.

General Pizza Making / Re: Rolling dough out in olive oil

Louis;

I can't come up with any good reason for wanting to add baking soda to a pizza dough formula/recipe. It will raise the pH of the dough away from the favorable lower pH (acidity) for yeast activity and flavor development. Dipping the dough into an alkali (soda) will impact both the crust color and the flavor of the finished product. This is what gives a pretzel its unique flavor. Take a piece of pizza dough, roll it out under your hands to form a thin string, dip it into hot (200F) soda water solution (15 grams soda in 85 grams of water), then sprinkle on a little sea salt, place it on a parchment paper lined baking pan and bake at 450F until golden brown in color and you Will have the beginnings of a pretzel.

Dough Ingredients / Re: Sodium Bicarbonate

Norma;

Yes, you can grow your own sprouts. After sprouting, dry them in a dehydrator, then grind them into a coarse powder (a food processor might work well for doing this). I would expect no difference between fresh sprouted and a commercial product. Just resist the temptation to sample the raw sprouts without thoroughly cooking them first.

Dough Ingredients / Re: Grinding Flour Fresh from a Wheat Field to Make a Pizza

Pete;

Good point. For home use, where we are trying to get a finished dough temperature in the 80 degree range, the procedure where we subtract the flour temperature from the number 145 seems to work pretty well. In any case, it sure beats the guess and by gosh method. So, simply take the temperature of the flour and subtract that from 145 to get the desired water temperature to give you a finished dough within the range of 80 to 90F. which is quite workable when making pizzas at home. When I make my pizzas for demonstration at home, or for family enjoyment, I use this method for calculating the water temperature, and my mixer consists of a wood spoon and a suitably sized bowl. I suspend the yeast in a very small amount of water (100F) for 10-minutes if using instant dry or active dry yeast. If using compressed yeast, I just stir it into the water that I've added to the mixing bowl, then add the flour, followed by the salt, sugar (if called for), and then I begin stirring, until the mixture looks like wet oatmeal, then add the oil, and stir in for about 1-minute, I then turn the "paste" out onto a floured surface, making sure to scrape the bowl clean, I oil the bowl, the then scoop up the "dough" and knead in the flour adhering to the outer surface (this just takes a few seconds) and then

place the dough back into the oiled bowl where it is allowed to ferment at room temperature for anything from 2 to 5-hours. I then turn the dough (it now actually looks like a dough) out onto the bench with a little dusting flour and kneed the dough for about a minute, or so, adding just enough dusting flour to it to make a nice feeling dough. Then place back into the bowl to ferment again for 30-minutes, now turn out of the bowl into some dusting flour, and roll or hand toss the dough to desired size, dress and bake. This makes for a very rustic looking pizza with a lot of old world charm. Most people that I show this to are amazed at how little work is actually needed to make a great pizza.

Dough Clinic / Re: Dough Temperature Formula

Nick;

If you have a gas home oven you can do a pretty decent job with a pizza stone, or use unglazed floor tile (works great) and it is a lot cheaper to boot. Place the stone(s) in the upper 1/3 of the oven.

Set the oven temperature at 450F, then allow at least 45-minutes for the temperature to come up and equilibrate. Get yourself a pizza screen, and place the opened pizza skin onto the screen (be sure to season the screen first). Dress the pizza as desired, and place in the oven on one of the lower racks in the bottom 1/3 of the oven. Bake the pizza there for about 5 to 7-minutes, then move to the stone and continue baking until the crust is well colored and beginning to char a little around the edge. You might need to experiment with placement in the oven and exact baking times between the top and bottom positions as all ovens are somewhat different. This is how I make my pizzas at home, and they always turn out great. By the way, do not put any sugar, eggs, or milk in the dough formula/recipe as any of these will result in premature browning of the crust, resulting in a reduction of crispiness.

Good luck, and have fun making pizzas!

Pizza Ovens / Re: Individual Pizza Oven?

Norma;

In my above reply, (first sentence) I meant to say that sprouted is the same as malted.

Dough Ingredients / Re: Grinding Flour Fresh from a Wheat Field to Make a Pizza

Norma;

Sprouted wheat, barley, etc. is the same as sprouted. Please do NOT be tempted to eat any of the raw sprouted grains. The mere act of sprouting is also a form of incubation which also allows for the growth of pathogens, some of which are not so people friendly. I receive notices almost daily of sprout recalls. The one in Europe, that killed and sickened many people was traced back to.....you guessed it, SPROUTS.

You should be able to sprout any type of wheat berry, just be doubly sure it is not commercial seed wheat with a red or green color to it. Farm or elevator stuff is fine and safe, or as safe as you can expect it to be. To sprout the berries, soak in water for 24-hours, then place onto a wet towel in a dark place and hold at 90F. You should see sprouting in a few days.

As for your wild yeast starter, whatever you get will be either a yeast or bacterial ferment, or a combination of the two. There is no way to predict what you will get. As you know, once you get something growing, you must culture it and propagate it until you have enough to work with. The idea then is to add enough, normally about 20% of the flour weight, to the dough so the culture becomes the dominant

microflora in the dough. With this done, it will impart its characteristic flavor and aroma. Be sure to save it in different locations because if you lose it (a term used to describe a change in the microflora of the starter/sour), your chances of ever replicating it are not quite as good as your chances of winning the Power Ball Lottery this week.

Dough Ingredients / Re: Grinding Flour Fresh from a Wheat Field to Make a Pizza

Steve;

Your procedure won't work when you use a starter as you are. Instead, after you divided the dough into pieces, place each into an oiled, plastic container and cover lightly with a piece of foil, and set aside to ferment at room temperature. I can't say how long this will take as I don't know anything about the type or strength of your starter, but it could take anything from 5 to 6-hours at the short end to 1 day or more at the long end. Watch the dough balls, when they have grown somewhat, and are resilient to the touch, try opening one up, if it opens easily, they are ready to go, if not, you will need to wait longer.

Can you add yeast? Yes you can, and then you don't need to wait nearly as long, but the yeast will become the dominant microflora, completely overwhelming the bacteria in the sour, hence your sour flavor will be lost.

One last thing, most sourdough starters are used at around 20% of the total flour weight. This is assuming a wet, active starter.

Dough Clinic / Re: Struggling with the dough!!!

Norma;

Wheat typically doesn't go directly from field to mill. Instead it goes from field to a local grain elevator where it is collected for sale. It may be held there for days or weeks. From there it will go to a flour mill. While the grain would probably still be considered to be green when it arrives at the mill, the flour miller adds a maturing agent (Maturox aka azodicarbonamide/ADA) to correct for this condition. Now, on to your next question. Malted wheat is nothing more than sprouted wheat, typically dried and ground into a powder. The question is: Is it enzyme active or not? If it is enzyme active it will raise havoc on your dough, breaking down starch and turning it into sugars resulting in a soft, sticky dough. If it is not enzyme active, it will only provide somewhat of a malt flavor to your dough. You can test the material in a small dough by using it at 2% of the total flour weight and allowing it to ferment for several hours then making, or trying to make a pizza from the dough. Keep in mind that you can also buy non-diastatic (non-enzyme active) malt powder or syrup from many bakery ingredient suppliers or Malt Products. When this product is used, many people will look at the malt only as a flavoring and a source of sugar as it is somewhat sweet.

Dough Ingredients / Re: Grinding Flour Fresh from a Wheat Field to Make a Pizza

Bruce;

I've used a BBQ with apple wood chips to smoke and bake pizza, and I've used smoked cheese on many a pizza, all with good success, so why not smoked tomato? I'm not so keen on the idea of adding any sugar to the tomatoes as this will only encourage scorching of the tomato or sauce during the baking of the pizza. On the other hand, the quest that most people go on when looking for a pizza sauce is one of that just picked, garden fresh tomato flavor. Any cooking of the tomato prior to its use as a pizza sauce actually reduces the delicate flavor profile of the tomatoes. This is not to say that a sauce made with your smoked tomatoes will be bad, it will

just be different, and in the world of pizza, different can be good. Flavor, like beauty is all in the eye of the beholder.

Sauce Ingredients / Re: Smoked Cherry, Grape or Farmers Market Tomatoes for a Pizza Topping or a Sauce

Norma;

Send a couple of the bugs over to your county agricultural agent, or the entomology department at a local university and I'm betting that they will be able to identify it and also provide you with suggested control measures.

Sauce Ingredients / Re: Can Anyone Help Me With This Insects on my San Marzano Tomatoes?

John;

By taking the dough directly from the mixer to the bench for scaling and balling, and then straight to the cooler, we are allowing the dough to be fermented under refrigeration in a very slow, uniform and controlled manner. This is much better than bulk fermentation where there are inconsistencies in the rate of fermentation throughout the dough mass. Also, the acids that are formed during fermentation at the lower temperature are different from those formed at fermentation at higher temperatures, resulting in a different flavor profile to the baked product, being it pizza crust or a loaf of bread. The refrigerated method of dough management works equally as well in a home kitchen as it does in a pizzeria. Some artisan bread procedures call for refrigeration of the dough at least overnight to develop the desired flavor profile in the finished bread.

Dough Ingredients / Re: how long is dough good in the fridge

Just to confuse things:

I have a dough formula and procedure posted in the PMQ RECIP BANK for a Chicago style thin cracker type crust. This is a very different type of procedure in that it calls for mixing the dough for less than 2-minutes. Actual mixing time typically runs about 1.5-minutes. With this short of a mixing time, what comes from the mixing bowl is more of a dry mix of ingredients than a "dough". Think of it more like that of a baking powder biscuit dough than a pizza dough. In this case you take a weighed amount of the "dough" and press it together using your hands into what we call a "puck", this is much the same way you would make a flaky pie dough, infact that is where I got the idea from. Anyways, you press the dough together to form the puck, and place onto a lightly floured sheet pan. When the pan is filled with dough pieces, cover with plastic, or slip inside of a plastic bag and secure closed by tucking the open end under the pan as you place it into the cooler or fridge. If you're doing this at home, a plastic bread bag works well for holding each dough piece. When you come back to the dough on the following day, you will find that the dough has pretty well knit together. Bring a dough piece out of the fridge and set aside at room temperature allowing the dough piece to temper AT room temperature for about 1.5 to 2-hours, then roll the dough out very thin. You cannot stretch the dough to shape it, it must be rolled. Dress and bake the pizza in the normal manner. This makes a very crispy, cracker type crust.

Dough Clinic / Re: Thin crusty dough did not mix quickly into ball

Most of the time the insect problem comes from within the flour itself, rather than from the outside. It can be a roll of the dice if you will have buggy/wormy flour after much more than a month of storage. The key is to keep the flour as cool as possible. I've got a small chest freezer in my garage that I use for storing things that I inherit, such as extra flour, fish from a neighbor's successful fishing trip,

surplus garden vegetables, you name it. It pays for itself in savings, and when I'm not using it, I just unplug it.

Dough Ingredients / Re: Question re: Storage of flour

Norma;

Do check with one or more of your local wheat farmers as to when they will be harvesting the wheat. Wheat right from the field is referred to as "green" wheat. It will make a product, but not typically the best. Try to hold some of the wheat aside at room temperature for several weeks to age, and then grind it. It will make better products once aged to some extent. Do not grind the wheat first and then try to hold it as the wheat germ will only rancidify, making for very rancid flour. Since you did not mention anything about cleaning the wheat, I'd suggest that you first freeze the green wheat for at least 30-days, then remove it from the freezer and allow it to age at room temperature for 30 or more days. Why freeze first? The freezing of the wheat will destroy any insects or larva inside of the wheat berries, then as you age the wheat, it will not become even more infested.

Dough Ingredients / Re: Grinding Flour Fresh from a Wheat Field to Make a Pizza

The secret to successful dough management is temperature. If you use a suitably strong flour, like Pillsbury "BREAD FLOUR" available from most supermarkets, and have a good dough formula/recipe, and keep the finished (mixed) dough temperature in the 75 to 80F range, you should be able to keep the dough for 2 or 3-days in the fridge. For this application, I would suggest using bread bags to store the dough in. Mix the dough, immediately take it to the bench and scale it into desired weight pieces, then form it into balls, lightly oil the dough balls, and place into individual bread bags, twist the open end of the bag to form a pony tail, and tuck the pony tail under the dough ball as you place it into the fridge. To use the dough balls from the fridge, remove and allow to temper AT room temperature for about 2-hours, then open the dough ball(s) into pizza skins as you normally would.

Dough Ingredients / Re: how long is dough good in the fridge

John; How did you get it to stay crispy for 10-minutes???

When you fast bake a pizza at high temps, you develop a very thin crust, like searing a piece of meat (to retain the juices). Typically, within a minute or so, the pizza begins getting soft and soggy. Some things that you might do to improve the situation are:

Use a thin crust (no sugar, eggs, or milk in the dough formula).

Make sure the dough is well fermented (one or two days in the cooler is sufficient). Very lightly oil the pizza skin, and then try using thin slices of fresh tomato rather than sauce.

Bake the pizza to the max, some charring is good to have.

That should be your best shot.

Dough Clinic / Re: Neapolitan pizza cooling down

We occasionally need to store flour for extended periods when conducting experiments for customers. The best way we have found to store flour for extended periods of time is to freeze it for a MINIMUM of 30-days, and then hold it under refrigeration for the remainder of the storage time. To prevent drying of the flour, be sure to plastic bag it. If you won't be using the entire contents of the 50# bag all at one time, we suggest breaking the bag down into smaller bag quantities appropriate for your use needs. Lastly, pull the flour from the fridge and allow it to warm back to room temperature before opening the bag. This will prevent any

condensation from forming on the flour while you're in the process of using the contents of the bag, which might be several days. Whole -wheat flour is a totally DIFFERENT story.

Dough Ingredients / Re: Question re: Storage of flour

The "big lump of mostly dry dough" says it all. There is nothing chiseled in stone when it comes to dough absorption. You need to add sufficient water to the dough to make a smooth, somewhat soft and elastic dough. I would suggest experimenting with adding more water to the dough. When I make dough at home, I will typically start out using too much water, making a dough that is too soft, and somewhat sticky, knowing that this is easily corrected by incorporating a little more flour later on while I'm working with the dough.

Dough Clinic / Re: Thin crusty dough did not mix quickly into ball

Nat;

To roll the dough out in corn meal, be sure to use a very fine grind corn meal. Begin by placing the dough ball into a bowl of corn meal and thoroughly coating it, then toss some on the bench or counter top where you will be rolling the dough out and roll the dough out in the corn meal. A dough docker is a tool with what look like spurs on it. The function is to lock the top and bottom of the dough sheet together (like spot welding) to reduce bubbling during baking. You can get a docker from just about any kitchen store. Be sure to look for one that has blunt points rather than sharp points as the dull points work better. As for flour, your local supermarket should have Pillsbury BREAD FLOUR in 5# bags, this flour has about 12% protein content and should work well for you.

Proof: To allow the dough to rise after forming/shaping, just prior to baking.

IDY: Instant dry yeast

Knead: To work the dough in the bowl to develop the proteins in the flour into gluten. You can do this biochemically through fermentation, so all you need to do is to mix the dough together thoroughly, then allow the dough to ferment for an hour or so, and you will begin to see the dough becoming more elastic as the gluten forms.

Best Vegetable Oil: Canola oil or better yet, olive oil

Water in the oven: Never, you want a dry bake for pizza

Toppings: For about a 12-inch pizza use 4 to 5-ounces of sauce and about 5 or 6-ounces for the cheese. The dough weight should be about 11-ounces.

Dough Ingredients / Re: how to make a donatos pizza(want it to taste like the real thing)

Randy;

Since you are making these pizzas at home for your own personal consumption you can save a couple dollars and make your own pizza prep peel. Scrounge up a piece of tempered hardboard, 1/4-inch thickness is great, but 1/8-inch will work well too. draw out the shape and size of the peel you want, and cut it out using a jig saw. Clean up the edges with a little fine sandpaper, then, using a sanding block with your sandpaper, bevel the end of the peel to about a 45 degree angle, be sure to sand this bevel from the untempered edge. You're now ready to begin peeling your pizzas into the oven. Use your existing peel to remove the pizzas from the oven, and to spin the pizzas in the oven for a more even/uniform bake.

A good alternative to using plastic containers is to save your bread bags and use them for storing the dough in. Lightly oil the dough ball(s), and place one into each bag, twist the open end to close, forming a pony tail, tuck the pony tail under the dough ball as you place it in the fridge. Kiss it good night, and it will be ready to

use over the next 24 to 48-hours. To use the dough, remove from the cooler, and set aside to temper AT room temperature for about 2-hours, then turn the dough ball out of the bag into a bowl of dusting flour, and open on your counter top, transfer to your prep peel and dress as desired, then peel into the oven for baking.

Newbie Topics / Re: very quick question regarding pre-made dough

Expresso;

The very first time you fire up the oven, it should be brought up to temperature gradually. Bring it up to 300F, and then after 30-minutes, increase the temperature by 50F, hold it at that temperature for an hour, then increase it by another 50F. Keep repeating this until you are up to full operating temperature. Once at full temperature, hold it there for a couple hours, then shut it down. The next time you use the oven, just set the temperature to where you want it, and wait for it to come to temperature. The gradual ramp-up in temperature goes a long ways in helping to prevent stone breakage/cracking and warping of the ovens superstructure. Remember to toss some corn meal onto the deck to help season it if you are planning to bake directly on the deck surface.

Commercial Ovens / Re: Turning On the Oven

Mike;

It sounds like you might have a Bakers Pride deck oven. Normally, the top heat is expressed in low, medium or high, while the bottom (deck) temperature is set to a specific temperature. Since your oven sounds like an electric oven, some changes in temperature might be needed, but this is what I use as a basic setup for an oven of this type:

Bottom temperature 500 to 550F

Top temperature medium heat. Use the top heat adjustment to get the toppings baked along with the bottom of the crust.

Bake time will vary, but I normally look for something in the 12 to 15-minute range.

Commercial Ovens / Re: Correct Pizza Oven Temperature

Bricklayer;

Your 0.5% level of ADY is "spot on", as is the two days in the cooler. Your 4-hours out at room temperature to temper might be a little long though. We typically allow the dough to temper for 2-hours or three, at the most if the dough ball weights are 20-ounces or more. You should be able to continue using the dough for up to 3, possibly 4-hours once the dough has tempered sufficiently to allow you to begin forming the dough balls into pizza skins. Bottom line, if 4-hours is working for you, and you are happy with the window for using the dough after it has tempered, don't change anything.

The most rewarding part of my job is when I hear from someone like you, that I've helped get started, or turn around a failing business and make a success story out of it. I only supplied the direction, you made it all happen. :)

Dough Clinic / Re: cold rise

Matt;

What you're doing is probably on par with about as good as it gets. If you are trying to make a more healthy profiled pizza, with reduced sodium content, dress your dough with slices of fresh tomato, and green leaf basil, reduce the cheese content to not more than 4-ounces for a 12" pizza, and use fresh vegetables and meat that you have pre-cooked yourself (without salt, of course), and you should have a pretty good sodium profile.

Dough Clinic / Re: Sodium-free Dough

CIZ28;

We can't convert volumetric portions (cups, teaspoons, etc.) into bakers percent. It can only be done with weight measures (grams, kilograms, pounds, ounces, etc.). When you have a chance, portion out each of your ingredients and weigh the portion, then let me know what those weights are and I can do the conversion for you.

Dough Ingredients / Re: Bakers' Percent??

Bruce;

Be glad to.

Friction, or "friction factor" is just a number that is used in calculating desired water temperature to account for the temperature gain of the dough, as a result of friction (dough rubbing against the side of the bowl) during mixing. The grind of the flour has no influence on "FF" but the size of the dough and the formulation do, especially the amount of water added, the use of reducing agents, such as L-cysteine (PZ-44) or dead yeast, and flour protein content. For most pizza doughs mixed in a planetary mixer, the FF will figure out to be about 35. To calculate FF:
$$3 \times \text{actual mixed dough temperature} - (\text{sum of flour temperature, room temperature, water temperature}) = \text{FF}$$

The formula for calculating water temperature is as follows:

$$3 \times \text{desired dough temperature} - (\text{sum of the room temperature, flour temperature, and friction factor})$$

Another formula that works well for doughs that will be in the 80F range is as follows: 145 minus flour temperature = water temperature needed to achieve a mixed dough temperature in the 80 to 85F range.

Dough Clinic / Re: Dough Temperature Formula

Jah;

I wrote on this very topic about 2.5 years ago in PMQ Magazine. I wrote about reheating slices, and also about a new pizza by the slice concept that I developed, which, by the way is presently in use at a very successful pizzeria here in Manhattan, Kansas (AJ's NY Pizzeria) <www.ajsnypizza.com>.

Chitchat / Re: Reheating Neo-Neopolitan vs. New York Slices

Smith;

The Schwan's Freschetta thick crust pizza isn't too far from the old, DiGiorno deep-dish frozen pizza. Patty's Gourmet Pizza also makes a pretty mean Chicago style Deep-dish pizza too.

Chitchat / Re: DiGiorno Deep Dish?

A.O.

You should not be having this problem if your hood and stack are working properly. You might possibly need a fan in your ventilation system to help draw the smoke up and out. We have both static and powered hoods that we use for different applications.

As for your African hard wood, what kind of flavor does it impart? Remember, all wood is not the same, just ask anyone with a smoker. Apple, cherry, hickory, oak, mesquite, pine (for what it's worth) and your African hard wood all impart a different flavor to the food.

Chitchat / Re: Pizza Oven Smoke!

Jude;

I stand to be corrected, but I believe the blue bag is a lower protein content flour than the red bag. This could well be the cause of the dough tearing, especially when mixed with your own milled wheat. If you want to use the blue bag flour, try adding about 5% vital wheat gluten to the flour. To figure 5% in weight, use your calculator, enter the flour weight, then press "X" and enter 5 then press the "%" key and read the amount of gluten to add for a 5% dosage. Remember, to increase the water content by at least 1.5 times the weight of gluten added. Also, if you enter the total flour weight (combined bag plus your milled flour) in ounces, the gluten weight will be shown in ounces. Whatever weight unit the flour is expressed in is the weight unit that the gluten weight will be expressed in.

[Chitchat / Re: Dough is tearing](#)

Thank you everyone for the very warm welcome!

As many of you who know me are already aware, I am away from my desk here at AIB, sometimes for a week or more, as I am out on a contracted assignment working for a customer. Because I'm "old school" I feel that my customer is paying for, and should receive 101% of my attention and efforts while I'm working for them, so I seldom ever respond to e-mails, or monitor boards while out on the road, but I do get caught up again soon after returning back to the office. I mention this because next week will be one of those weeks. I'll be right back at you again as soon as I get back to the office.

[Dough Clinic / Replies to Questions](#)

I keep seeing references to bromated flour. Bromated flour is fine for making pan breads, ain't nothin' that works much better, but when it comes to pizza, bromate is not a friend, unless you like having a dough that is tough and elastic, and likes to fight you as you try to form it into a pizza skin. That's what bromate (potassium bromate) does. Keep in mind that bromate is frowned upon in California (it is a carcinogen) and not allowed for use in Canada. As a result, most flour suppliers have their flours available either bromated or non-bromated. For example, General Mills has Rex Royal brand that has 12.4% protein and is unbleached and unbromated #57151 and also Washburns brand at the same protein level, unbleached, but bromated #59401. A potential for a locally produced flour similar to Caputo-00, might be General Mills Pollyanna (this is an untreated flour coming in at about 10.5% protein content. I've also had good success using General Mills King Wheat brand flour. If you can't get the G.M. brand in your area, just use these names and ask your flour supplier what he has an an equivalent.

[Dough Ingredients / Re: Mea culpa, Caputo is it](#)

Thank you for the warm welcome.

[New Forum Members / Re: New Member](#)

Bruce;

Not to discourage you from kneading your dough by hand, but did you know that it isn't necessary? Try this sometime, put the water in the mixing bowl, add the yeast to the water and stir to suspend if using compressed yeast, you must prehydrate either IDY or ADY prior to adding it to the water. Then add the flour, and remainder of ingredients. Using a wood spoon (more on that shortly) stir the mass until it is wet and sticky. Remove the spoon and lightly cover to prevent drying, allow to ferment for 2 to 5-hours, turn out onto a floured bench top, fold the dough several times (I'm hesitant to call this kneading), lightly oil the bowl that the dough was fermented in, and place the dough back into the bowl to ferment for another 30 to 60-minutes. Turn the dough out onto your bench top and cut into desired size

pieces, then shape into pizza skins for immediate use. The reason why I like to use a wood spoon to stir the "dough" is so you don't over mix the dough. As you stir, the dough will become tougher, and fear of breaking the wood spoon will prevail to the point where you will stop mixing, and that will be sufficient mixing in this application. The gluten development in this case is accomplished through what is known as biochemical gluten development. You can also get it by managing the dough through the cooler overnight too. This is how bakers used to develop their doughs before Mr. Hobart invented his first dough mixer. The procedure is still used in a number of developing countries around the world.

Stones/tiles/steel, Pans & Accessories / Re: Non stick mats for kneading pizza dough

It will all depend upon the flavor profile that you are looking for. The flavor from the malted milk powder will be that of a malted milk candy. In work that I did many years ago I used 5% of the flour weight to achieve a characteristic flavor of malted milk, if that's what you're looking for.

5% of 155-grams is 7.75-grams. Using your handy calculator: 155 X 5 (press the "%" key) and read the answer in the display window. Remember, your answer will be in the same weight units that you displayed the flour weight in.

Dough Ingredients / Re: King Arthur Malted Milk Powder

Thinking this one through, sprouted wheat will be very high in amylase activity. Amylase enzymes break down starches into sugars. Think malted barley flour aka sprouted barley flour. This is why wheat that has sprouted in the field prior to harvest, due to excessive rain at harvest time, has very little commercial value for going into flour that is used for baking. Hence, sprouted whole wheat flour should be able to be used in a manner similar to malt, and in fact, it should have a bit of a malty flavor (think malted milk balls). The actual use level for a product like this would be quite low, I would think something in the 1 to 3% range, based on the total flour content of the dough. The one question that I have is concerning enzyme activity. Is the flour enzyme active (diastatic) or non-enzyme active (non-diastatic)? If it is diastatic, it will make a dough soft and sticky if used at excessively high levels, but if it is non-diastatic, it will only provide that malty flavor to the dough and act much like a sugar would.

Dough Ingredients / Re: Lindley Mills Super Sprouted Flour available from K.A.

I'll toss my hat into the ring on this one too. Cy is indeed highly perishable, needing constant refrigeration, and even at that, it will show signs of deterioration after about 10-days of correct refrigerated storage. The aroma of fresh, compressed yeast can run from musty (like old newspapers found in a damp basement) don't ask, to an ammonia smell. These are normal for compressed yeast. A good visual indicator for old or expired yeast is its color. Dark brown and a cracked appearance are good indicators that the yeast is long in the tooth. Texturally, the yeast can be dry feeling, or it may feel somewhat gummy/slightly sticky, both are normal. As yeast ages, it dies, and glutathione is released from the cells. Glutathione is a reducing agent much like L-cysteine (PZ-44) or you can even buy "dead yeast" as a natural reducing agent. Keep this in mind if you are forced into menu labeling and find yourself in need of a reducing agent. The reducing agent breaks down a portion of the gluten, making the dough more extensible as well as making the resulting crumb structure in the baked product more tender/less chewy. From a flavor and performance point, there is no difference in any of the three yeast types (compressed, ADY, IDY) when used at the correct substitution levels, and

reconstituted correctly. A lot of the "old school" bakers still like to use compressed yeast because that's what "it" is, old school, and it fits well into their concept and way of doing things.

Dough Ingredients / Re: The unique crumb characteristics of Cake Yeast

Steve;

Actually, I might have been at one time, right at your inception, but due to early problems with logging in, I faded away, but I'm back now. :)

Tom

New Forum Members / Re: New Member

This is my first time here. I am a regular participant at the PMQ and Pizza Today boards, as well as a very long time participant in all of the pizza shows across the country. You may also read my ramblings in PMQ (In Lehmann's Terms) and Pizza Today (The Dough Doctor). Aside from being a writer, speaker, and consultant for the retail and wholesale pizza industries, I am a fond lover of Chicago and New York style pizzas, and my motto is: "I've never had a pizza that I couldn't learn to like"

New Forum Members / New Member