

1981

/ [Re: Repetative strain in hands from rounding](#)

The other thing you can do to help alleviate things a bit is to increase the dough absorption which will make for a softer, more easily rounded dough, if this will alter the style of pizza you're making is something that I cannot answer.

Tom Lehmann/The Dough Doctor

1982

/ [Re: Pizza with last minute balling ?](#)

The method described here, cutting a piece of dough from the large fermented dough mass, and immediately flouring and sheeting it (NOT ROUNDING IT) is the same process commonly used by pizzerias back in the late 40's and through the 50's. It died out in the 60's when we began looking for a more effective way to manage the dough as this method had two major flaws. 1) It gave pizzas that were somewhat inconsistent as the dough continued to ferment and change throughout the day. 2) It limited the number of pizzas which could be sold without fear of having to toss out masses of unused dough. This procedure was ultimately replaced by a variation of the cold fermented dough ball method of dough management we see widely used in pizzerias today. It was also this process that resulted in high protein flour becoming known as "pizza flour" as you needed all that protein content to give the dough the necessary fermentation tolerance to hold up to all those hours of fermentation at room temperature. A typical dough formula from those bygone years will look something like this:

Flour: All Trumps 100%

Salt: 2.5%

Yeast: (compressed, as we didn't have IDY at that time) 0.5%

Sugar: 2%

Water: 55%

The dough was started approximately 6 to 8-hours prior to use and used throughout the day/evening or until it was gone. Unused dough was tossed out. A piece of dough was grabbed and cut from the bulk dough piece, it was floured and sheeted to thickness and trimmed to size. Trim scrap might have been saved but was usually just tossed out. The dough sheet was commonly docked, then dressed and baked in a deck oven at 500 to 525F.

Tom Lehmann/The Dough Doctor

1983

/ [Re: Repetative strain in hands from rounding](#)

Carl;

Are you saying that you don't have 4-square feet (2 X 2) to spare in your kitchen? That's all the space required by an AM-Round O Matic. Sure rounders cost some money but then so does a life long disability not to mention the associated medical costs. I don't know how you're presently rounding your dough balls but if you go to my web site at <www.doughdoctor.com> and peruse through my videos you will be able to see how I round my dough balls. I've been teaching this method to

operators for years and it really works well, fast and with a lot less strain (absolutely nothing on the fingers).

Tom Lehmann/The Dough Doctor

1984

[/ Re: Tweaks for using cold dough?](#)

Without knowing your dough formula and management procedure I can't say too much but as a rule, by adjusting the IDY to about 0.45% and increasing the total dough absorption to around 65% (assuming you are using a flour with 12 to 12.8% protein content) you should be able to effectively manage your dough straight out of the cooler after 36 to 48-hours cold fermentation time, again assuming a finished dough temperature of 70 to 75F and balling the dough immediately after mixing for cold fermentation and cross-stacking/down-stacking after at least 2-hours (another assumption). A lot of assumptions I know, but that's the best I've got to go on for now.

Tom Lehmann/The Dough Doctor

1985

[/ Re: Timing my dough balls](#)

Here's another idea to try,

Remove the dough balls from the fridge, make sure they are lightly oiled to prevent crusting, partially flatten the dough balls to about 1.5-inches thick, place the flattened (puck shape) dough balls onto a cookie sheet and place in a warm location (on top of the stove?), turn the dough pieces over after 20-minutes and allow to go for another 20-minutes, then begin opening them into skins by your preferred manner. This is similar to how we force the dough in a commercial pizzeria setting. If you don't pre-flatten the dough balls into "pucks" they are very difficult to warm properly as only the outside gets warmed while the middle is still cold.

Tom Lehmann/The Dough Doctor

1986

[/ Re: Better / best water to use?](#)

Actually, any potable water with a neutral or very near neutral pH should work just fine. Remember, sourdoughs were born in the presence of well water/natural spring water. With today's municipal water treatment facilities seemingly all over the board with water quality (well documented fact) as a general rule I might suggest that bottled spring water/mineral water be used when working with sourdough systems unless you know that your doughs will perform OK with your tap water.

Tom Lehmann/The Dough Doctor

1987

[/ Re: Keeping pizza hot and not soggy when transporting to customers](#)

Parchment paper will not help in the least, the idea is to have the pizza supported/raised up off of the bottom of the box to allow steam/moisture to escape (that's what makes the bottom soggy). Cutting a delivered pizza in front of the customer? I can see it for a carry out pizza but not for a delivery pizza.
Tom Lehmann/The Dough Doctor

1988

/ Re: re-balling dough before use?

To answer your first question it has to do with two things, one is realignment of the gluten bonds and the second has to do with exposing the gluten bonds to oxygen which restrengthens the gluten. We do this on a commercial basis using 2,800 pound dough mixers where the dough is mixed until it becomes almost too soft to handle, then the mixer door is opened to allow air/oxygen to replace the carbon dioxide inside the mixing chamber and the dough is then mixed at slow speed to expose it to the air, much like what you do when re-rounding the dough balls, the dough is then finished with a short mix at high speed and discharged for processing. This is done for either of two reasons, it can be done to address an over fermented dough resulting from a delay in production or it can be done to allow for the addition of more water (higher absorption) to the dough.

To answer your second question, this is a step commonly taken when working with high absorption doughs, the rest period in the mixing bowl acts like an autolyse period allowing time for the flour to better absorb the water. If done correctly, there is good scientific evidence that the dough mixing period prior to the rest period opens the gluten structure allowing it to better absorb water which allows the dough to carry even greater amounts of water without becoming excessively soft and unmanageable. In bakery terms this process is referred to as the "fatigue dough mixing method". By this method the dough is mixed to just short of full development with the greater dough absorption, it is then tumbled in the mixer at low speed with the mixing bowl partially open to allow for the entry of air, this is done for several minutes during which the dough becomes noticeably tighter, it is then mixed at high speed for a very short time just to give it the desired extensibility and discharged for processing. This procedure really isn't suited for pizza production though as pizza doughs are NOT mixed to full development in the manner as bread doughs are.

Tom Lehmann/The Dough Doctor

1989

/ Re: Ice cubes in dough hydration and adding oil

If you're machine mixing and you are using all very cold water it's best to add the IDY to the dough after about a minute of mixing time. If you are hand mixing you are better off suspending the IDY in a small amount of 95F/35C water, you can then add it to the cold water without any issues.

Tom Lehmann/The Dough Doctor

1990

/ Re: Wooden pizza peel in WFO?

All the time.
Tom Lehmann/The Dough Doctor

1991

/ Re: Dough Formulation and bake time

Factors affecting baking time:
Dough formulation.
Dough fermentation.
Oven type and design.
How the oven is fired (gas, electric, wood, coal)
Baking temperature.
Baking platform and color.
Dough weight/thickness.
Type of pizza.
Application of pizza (dine in v/s DELCO)
Type and amount of toppings.

I probably missed a couple but I think those are the high points.
Tom Lehmann/The Dough Doctor

1992

/ Re: Better / best water to use?

The main "good thing" in the water used for making dough is calcium. If you use "0" water and add 0.25% (total flour basis) calcium sulfate you will have about the best you can hope for in a bread or pizza dough.
Tom Lehmann/The Dough Doctor

1993

/ Re: Keeping pizza hot and not soggy when transporting to customers

Here are some suggestions for a better DELCO pizza.
1) Bake the pizzas as long as possible.
2) Bake your pizzas in an air impingement oven for a drier top.
3) Minimize vegetable toppings.
4) Do not cut the pizza.
5) Allow pizza to steam off for a minute prior to boxing.
6) Use a ripple sheet or Dri-Pie Mat under the pizza in the box.
7) Make sure steam vents in boxes are opened.
That's about the best you can do.
Tom Lehmann/The Dough Doctor

1994

/ Re: Better / best water to use?

Hard tap water is going to be the best to use. Don't worry about the hardness, the harder the better as far as the dough is concerned. If taste is an issue for you use

an activated carbon filter. R.O water is probably the worst water to use in a dough with softened water running a close second. The dissolved minerals actually strengthen the dough (especially the calcium).

Tom Lehmann/The Dough Doctor

1995

/ [Re: Ice cubes in dough hydration and adding oil](#)

You get a higher BTU exchange when using ice as opposed to ice water...big difference. When using ice it is not recommended that "ice cubes" be used as they do not melt very well, instead, use shaved ice or flake ice. Very seldom do we ever need to add ice to a dough to achieve the desired finished dough temperature unless we're making some type of a frozen dough or we have a very hot mixing room to contend with. For most doughs with a targeted finished dough temperature in the 70 to 85F range water temperature in the 55 to 65F range will be sufficient.

Tom Lehmann/The Dough Doctor

1996

/ [Re: In need of guidance](#)

PA;

No offense taken. :)

Tom Lehmann/The Dough Doctor

1997

/ [Re: Ice cubes in dough hydration and adding oil](#)

Mix the dough until all of the ice has melted, then add the oil gradually over 60-seconds or so.

Tom Lehmann/The Dough Doctor

1998

/ [Re: In need of guidance](#)

There is no need to "bloom" IDY when hand mixing, just suspend it in a small amount of plain water at 95F (temperature is critical with IDY).

No need to "eye ball" the yeast, just put it into a known quantity of 95F water, suspend it and divide the water. for example, if you need 1-gram of IDY you can weigh 2-grams into the water and use only half of the water. If you want 0.5-gram just divide the water by four. This is a pretty common practice where small amounts of an ingredient are needed, it sure beats the "guess and by gosh" method.

Tom Lehmann/The Dough Doctor

1999

/ [Re: In need of guidance](#)

If you are using a mechanical dough mixer it will take care of distributing the yeast throughout the dough just fine, if you are hand mixing it will be necessary to suspend the yeast in all or a portion of the water (compressed yeast). Process is the same if you ferment the dough balls at room temperature, just don't put them in the fridge and adjust the finished dough temperature to 70F/21.1C to 75F/23.8C.
Tom Lehmann/The Dough Doctor

2000

/ [**Re: In need of guidance**](#)

If your mixer has a common "J" hook the dough most likely just grabbed onto the hook and went for a ride with it around the bowl without receiving much, if any, mixing input/action. In a case like this if the dough temperature was much under 80F/26.6C with your yeast level, the dough was under significantly under mixed (making it sticky to handle with poor shape retention) and quite likely it was under fermented too resulting in a tight, bucky (elastic) dough condition when you were trying to form the skins.

You might try this:

Mix your dough as you are, check the finished dough temperature, you are looking for 80F/26.6 to 85F/29.4C (adjust the water temperature to give you this finished (mixed) dough temperature. Immediately scale and ball the dough, place into individual plastic bread type bags (twist the open end into a pony tail and tuck it under the dough ball as you place it into the fridge). Note: Lightly oil your hands to make handling the sticky dough easier, make sure dough balls are lightly oiled when placing into bags. Allow the dough to cold ferment in the fridge for 24 to 48-hours, remove from fridge and allow to warm AT room temperature for about 1-hour, turn dough ball out of the bag onto a floured surface, flour the dough ball and open into a skin. It should handle and open much easier thanks to bio-chemical gluten development.

To answer your question about "dough management": Dough management is everything that you do to the dough from the time it is mixed until you open it into a skin.

Tom Lehmann/The Dough Doctor

181

/ [**Re: I haven't been able to duplicate my bubble crust after succeeding once.**](#)

You say you allowed the dough to rise for 6-hours prior to baking, when did you open the dough ball into a skin, before or after that 6-hours at room temperature (whatever temperature that might be).

Tom Lehmann/The Dough Doctor

182

/ [**Re: Dough science - minutes after cold ferment but before baking?**](#)

My fear is that you are jumping back and forth between sourdough and conventional pizza and bread type doughs, is this a correct observation?

Tom Lehmann/The Dough Doctor

183

[/ Re: Getting crust to brown without being too overcooked and hard.](#)

A malted bread type flour will certainly work a lot better for you right now. Read the ingredient label on the flour bag for contains: malted barley flour, or it may just say "enzymes" (which would be amylase enzymes which act as the malted barley flour does). You can also see if you can find some diastatic malt powder. You will want to have a diastatic malt powder with a 20 degree Lintner Value. This will need to be added to the dough as an ingredient at 0.25%. If you get a diastatic malt with a higher Lintner Value divide the value by 20 and then divide 0.25% by the same number to find the amount to add. For example, if you get a 60 degree Lintner Value malt; $60 \div 20 = 3$ so you will now divide $0.25\% \div 3 = 0.0833\%$ (this is the amount of the 60-L malt that you will need to add).

Tom Lehmann/The Dough Doctor

184

[/ Re: help diagnose dough issues using SD starter](#)

Without more details it's hard to say what the issue might be but just for grins, try using only 10% of your starter the next time. All starters are different and because of that the amount used will vary too.

Tom Lehmann/The Dough Doctor

185

[/ Re: I haven't been able to duplicate my bubble crust after succeeding once.](#)

In addition to what Yael has said, with reference to the yeast, within the yeast that you add, some of the cells are budded, and some are not, those that are budded, with sufficient fermentation time, the buds will grow and develop into "daughter" cells however they themselves will not bud (reproduce) which partially explains why fermentation will tend to speed up to a point in the fermentation process and then level off with fermentation continuing at a steady rate until the process is interrupted by alcohol content, nutrient depletion, or temperature.

Tom Lehmann/The Dough Doctor

186

[/ Re: NY Style in my Wood Fired Oven](#)

At the levels we're talking about using here it won't make a difference which one you use, BUT if you use butter, use it at room temperature and you don't need to use the delayed oil addition mixing method, you can just add it right on top of the flour.

Tom Lehmann/The Dough Doctor

187

[/ Re: I haven't been able to duplicate my bubble crust after succeeding once.](#)

Additionally, yeast doesn't replicate in a dough, it just feeds and generates by-products of fermentation.

Tom Lehmann/The Dough Doctor

188

[/ Re: Pizza Slap Practice Dough](#)

It might. Try 1% powdered garlic (not garlic salt).

Tom Lehmann/The Dough Doctor

189

[/ Re: Flat dough from sour dough starter in lieu of IDY](#)

Just don't freeze the dough for more than about two weeks, three on the outside, and anticipate a long time for the dough to become active again after the freezing process. This is one reason why frozen dough typically has a higher yeast level.

Tom Lehmann/The Dough Doctor

190

[/ Re: Franchise vs. Independent, raising the money to open](#)

A number of years ago I spoke with a major pizza box store franchise owner about a similar question, his response at the time was that one doesn't really begin to make money (as an investment) until he/she owns at least three to five stores. If I remember correctly, at the time he owned about 12 stores and was doing quite well. The old adage of "It takes money to make money", has a familiar ring in this case.

Owning an independently owned/operated store can have its advantages too, but it takes a lot of leg work (blood, sweat and tears) to get it off the ground, and if you're successful at that you will then be faced with getting good help, let me repeat that in another way, getting good help today is the number one biggest challenge an independent store has today. It is also the number one stifle to independent store growth/expansion. But this is the price we pay to be an independent store owner/operator. I might also add, if you are a micro-manager or feel that you just cannot get away from the shop for any reason, abandon any idea of being an independent, you're doomed to failure, instead invest your money in the stock market, you'll be a lot happier and more successful.

Tom Lehmann/The Dough Doctor

191

[/ Re: ADY to prove or not](#)

We did some work along those lines back in the 1970's but the problem that we had was that we couldn't get consistent results so the amount of mix time reduction and dough extensibility were all over the board. To the best of my knowledge this work was done prior to the advent of "dead yeast" for use as a reducing agent. What has to be done is to heat a yeast suspension to the thermal death point (140F) to inactivate the yeast without denaturing the glutathione which will now be

the active ingredient. Remember, the amount of glutathione used in a dough to achieve desired results is measured in PPM (parts per million), so it doesn't take much to cross the line between something that works well in a dough and something that's disastrous for a dough.

Tom Lehmann/The Dough Doctor

192

[/ Re: Cold Fermentation advice](#)

No correction needed, Peter "nailed it" ^^^

Tom Lehmann/The Dough Doctor

193

[/ Re: Cold Fermentation advice](#)

If you will email me at <thedoughdoctor@hotmail.com> I'll be glad to send you a copy of my Dough Management Procedure which contains all of the elements necessary for effective management of your dough through the cold fermentation process.

Tom Lehmann/The Dough Doctor

194

[/ Re: Flat dough from sour dough starter in lieu of IDY](#)

Just a tip: One cannot accurately state the amount of starter needed without first knowing the strength of the starter in question. Commercial yeast (IDY, ADY and CY) are standardized in strength and very uniform/consistent when fresh which is why we can, with good accuracy, predict the amount of yeast needed for a specific fermentation scenario. The same is not true for sourdough starters since they are "natural" and vary accordingly. To recommend an amount of IDY to use we will need to know the specifics (including all times and temperatures) pertinent to your dough/dough management procedure.

Tom Lehmann/The Dough Doctor

195

[/ Re: How to achieve a better spring/sponge in the pizza](#)

Yael is correct, only the flour, remember....we change only one thing at a time. The list that I provided is a list of options that might help by strengthening the dough, thus allowing it to better support the weight of the toppings without collapse.

Tom Lehmann/The Dough Doctor

196

[/ Re: Flat dough from sour dough starter in lieu of IDY](#)

Agreed, most sourdough starters do not play well in cold temps, plus if you used your starter at the same level as IDY you were VERY low on leavening. You should

have been using it at something in the 5 to 15% range depending upon the strength and acidity of your starter.

Tom Lehmann/The Dough Doctor

197

/ [Re: Issues with Elasticity](#)

I would take the sourdough starter out for now, just use IDY (0.25%) for the leavening. Once you get something that you like you can then change over to your starter at different levels (5%; and 10%) to start with and adjust accordingly from there.

Tom Lehmann/The Dough Doctor

198

/ [Re: Another reason to make your own dough...](#)

This may come under the Federal Food Protection Act, if it does, the person committing the crime will be Federally prosecuted and if found guilty will be sentenced to a mandatory 20-years in a Federal prison. This is the reason why we see so little of this anymore. It used to be a lot more prevalent.

Tom Lehmann/The Dough Doctor

199

/ [Re: Issues with Elasticity](#)

Issues relating to excessive elasticity are almost always related to insufficient fermentation in one way or another.

Tom Lehmann/The Dough Doctor

200

/ [Re: Pizza Slap Practice Dough](#)

While I've not done it, your question is interesting. You might try making a dough as follows:

Flour: All Trumps or the highest protein baking flour available (14% to 14+% protein content) 100%

Salt: 3%

PZ-44: 2% (variable)

Oil: 4%

Water: 58% (variable) 70F.

Mix the dough until it has the desired extensibility, scale and ball.

Begin practicing with one dough ball right away, lightly oil and wrap the others in plastic and store in the refrigerator. At some point the first dough ball will become too extensible to play with, at that point re-ball it and place it in the refrigerator and remove one of the other dough balls, keep repeating until fun time is over.

Let us know it this works for you.

Tom Lehmann/The Dough Doctor

201

/ [Re: Dough tray](#)

With a large dough box and just a couple dough balls it's like putting those two dough balls into a gymnasium and expecting them not to dry out. We just recently had some discussion on this very topic and how to address it.

Tom Lehmann/The Dough Doctor

202

/ [Re: Dough not rising and too white](#)

The picture I was referring to appears to be a pan pizza but the outside of the pan appears to be bright and shiny, which would raise concern with bake color especially in an air impingement oven.

What do you have for a top and bottom finger profile?

Tom Lehmann/The Dough Doctor

203

/ [Re: Dough sticks to proofing container, deflates while removing?](#)

Your dough might also be a bit over absorbed, if additional oil and a shorter fermentation time don't work reduce the dough absorption by 5% to see how that works, remember dough absorption is ALWAYS variable.

Tom Lehmann/The Dough Doctor

204

/ [Re: Dough not rising and too white](#)

Raj1;

Is that a picture (2nd from last) of your deep-dish pizza still in the pan in which it was baked? That pan looks to be bright silver in color? Please confirm and show pictures of the OUTSIDE of the pan.

Thanks,

Tom Lehmann/The Dough Doctor

205

/ [Re: Want to add more salt](#)

At your present 0.25% IDY level you will be just fine even if you increase the salt to 2.2%. If you want to go more than that increase the IDY to 0.3 to 0.375% and you can go as high as 3% salt.

Tom Lehmann/The Dough Doctor

206

[/ Re: Dough not rising and too white](#)

I cannot answer that question as it is dependent upon a number of factors relating to the strength of your dough, about which I know nothing. You'll have to try them to determine if they will hold up or not. If they don't hold up you can make something else from the dough like garlic knots or bread sticks or you can add them back into fresh/new dough at up to 15% of the total new dough weight.

Tom Lehmann/The Dough Doctor

207

[/ Re: Dough a little sticky, maybe not rising enough?](#)

That one will certainly work for you. I always recommend the dial/stem type since they are so much lower in cost and are easily re-calibrated.

Tom Lehmann/The Dough Doctor

208

[/ Re: Dough a little sticky, maybe not rising enough?](#)

Just get yourself a dial/stem type thermometer with a hex nut under the dial. This nut is used to calibrate the thermometer. To calibrate a thermometer: Use a low cost oral thermometer and adjust the water temperature in a glass so the temperature reads on the oral thermometer, then place the stem/dial type thermometer in the glass of water and adjust the temperature by holding the head and turning the nut until the temperature reads the same as the oral thermometer, your thermometer is now calibrated.

Tom Lehmann/The Dough Doctor

209

[/ Re: Dough a little sticky, maybe not rising enough?](#)

Don't worry too much about the flour temperature at this time, instead just concentrate on the finished dough temperature which is typically in the 75 to 80F range. If you are mixing by machine you can use this formula for calculating the dough water temperature: $145 \text{ minus flour temperature} = \text{desired water temperature}$ for a finished dough temperature of about 80F. If you are mixing your dough by hand you will need to experiment with the water temperature.

Tom Lehmann/The Dough Doctor

210

[/ Re: Dough not rising and too white](#)

After the cold fermentation of the dough balls and you press the dough into the pans, you will need to experiment with how long you allow the dough to proof/rise in the pan before placing them back into the walk-in cooler. My advice is to take a few at 15-minute intervals: 15, 30, 45 and 60-minutes. Cover them or better yet, place in a wire tree rack which is covered with a large plastic bag. After about 3-hours begin testing by removing pans of proofed dough beginning with 15-

minutes and going all the way to the 60-minute proofer dough. As you remove the proofed dough immediately dress and bake, then evaluate and decide which proofing time provided you with the best finished crust characteristics. Send us some pictures of the whole pizzas and also of each pizza cut in half so we can see the thickness as well as the crumb structure.

Tom Lehmann/The Dough Doctor

211

/ Re: NY Style in my Wood Fired Oven

Here is a good basic dough formula that should work well for you.

Flour: (strong bread type flour with at least 12% protein content, higher protein is even better) 100%

Salt: 2%

Sugar: (variable/optional) 2%

Yeast: (CY: 1%) or (ADY: 0.5%) or (IDY: 0.375%)

Water: (variable) 62%

Oil: 2%

Use delayed oil addition mixing method.

Target finished dough temperature: 75 to 80F

Procedure:

Mix.

Scale and ball within 20-minutes.

Place in plastic dough boxes and oil top of each dough ball.

Cross-stack in the cooler until INTERNAL dough ball temperature reaches 50F.

Down-stack.

Cold ferment minimum of 24-hours, 48-hours is better.

Remove from cooler and allow the set AT room temperature until the INTERNAL dough ball temperature reaches 50F.

Begin opening dough balls into skins.

Tom Lehmann/The Dough Doctor

212

/ Re: Dough a little sticky, maybe not rising enough?

The dough looks fine to me, but you're going to need to do some work on the dough formula, for example (1/3 hot and 2/3 cold) how hot? How cold? Remember, it's not the hot and cold that matters, it's the actual temperature of the water that counts. Also, there was no mention of finished dough temperature, I always say that you cannot have effective dough management without effective temperature control. Assuming room temperature fermentation after balling so a total of 24-hours room temperature fermentation.

Tom Lehmann/The Dough Doctor

213

/ Re: Dough not rising and too white

Raj1;

With compressed yeast you should be OK using 1%, I don't think 0.5% will be sufficient.

Tom Lehmann/The Dough Doctor

214

[/ Re: Writing this intro while my dough gets up to room temperature](#)

Correct me if I'm wrong, but that looks like a cookie sheet? What does the bottom look like? If you are trying to achieve a hearth bake that's not the best option, a baking steel or stone will serve you much better.

I second the nomination to upgrade to a better "baking surface" ^^^

Tom Lehmann/The Dough Doctor

215

[/ Re: Dough not rising and too white](#)

Raj1;

I agree with Yael that 24-hours at room temperature with your dough formula is going to be too much fermentation and result in a low pH condition of the dough which will impede crust color development. Can you follow my Dough Management Procedure and target a finished dough temperature of 75 to 80F, go directly from the mixer to the bench for scaling and balling, then box the dough balls and oil the top of each ball and then into the cooler for cross-stacking (all within 20-minutes of removing the dough from the mixer), allow the dough balls to remain cross-stacked until the INTERNAL dough ball temperature reaches 50F/10C and then down-stack or cover the boxes. Allow to CF for 24 to 48-hours, remove from cooler (keep boxes covered) until INTERNAL dough ball temperature reaches 50F/10C, then begin fitting the dough to the pan(s) and allow to final proof for about an hour or whatever time is needed to give the desired finished crust height/thickness. Baking deep dish pizzas at too high of a temperature usually results in not getting the internal crumb structure properly baked while in many cases scorching the toppings at the same time.

Tom Lehmann/The Dough Doctor

216

[/ Re: Pizza Hut pan pizza dough rising too much](#)

That's a lot of (ADY?) even more if it's IDY. The amount shown calculates out at 1.2% while a more typical level is 0.5 to 0.75% if it's ADY or 0.4 to 0.6% for IDY for pan style pizza. I should also add that if it's ADY it should really be hydrated and activated separately in a small container with about five times its weight of warm (100F) water. If the yeast is IDY you can just add it dry right to the flour. What is the finished dough temperature? Ideally you should be looking for something in the 80 to 85F range.

Tom Lehmann/The Dough Doctor

217

[/ Re: Writing this intro while my dough gets up to room temperature](#)

Send us some pics of that aluminum "surface" (not quite sure what you mean by that), so we can see what you have and possibly make some recommendations to help you achieve your pizza making goals.

Welcome!

Tom Lehmann/The Dough Doctor

218

[**/ Re: Trays for rack**](#)

I looked them up for you, they are called wooden bagel proofing boards/Bakedco.com/\$8.75 each./size 18 X 26

Tom Lehmann/The Dough Doctor

219

[**/ Re: Trays for rack**](#)

They look like bagel boards, used to be made out of wood but now made from a plastic like material. Look for "bagel boards".

Tom Lehmann/The Dough Doctor

220

[**/ Re: Sour dough starter experience**](#)

Once you have an active starter it is typically maintained at about the consistency of heavy cream. It's a starter, not a sponge or biga. Depending upon the characteristics of the starter, you will probably use it at something between 5 and 15% in making your pizza dough (be sure to take the water content of the starter into account when calculating the total dough absorption).

Tom Lehmann/The Dough Doctor

221

[**/ Re: Does ascorbic acid make tougher dough?**](#)

The amount of ascorbic acid added to IDY is VERY small (measured in ppm (parts per million)). Its purpose is to compensate for the small amount of glutathione released from the yeast during the drying process thus giving the IDY a performance profile more like that of CY. To get the effects that were mentioned you would need to add something between 75 and 100 times as much ascorbic acid AND it would need to be a coated/encapsulated form of ascorbic acid.

No truth to what you heard.

Tom Lehmann/The Dough Doctor

222

[**/ Re: Puffy Crust but has raw dough**](#)

A picture would help immensely, but lacking that it might be insufficient IDY. Are you weighing the IDY?

Tom Lehmann/The Dough Doctor

223

/ [Re: Flavored and Infused Oils](#)

No problem as long as you dispose of it at the end of each day.

Tom Lehmann/The Dough Doctor

224

/ [Re: Opening up a pizza shop.](#)

With everything that has been already said, spend some time visiting with your local codes department to make sure whatever you end up doing meets with their approval, it will in the end, no matter what, so make it easy on yourself and do it the way they want it right from the start. Visiting another local store to see what they have may not always be the best idea, codes/regulations change and some cities will grandfather in stores with, let's just say a hood, which no longer meets current code, if you do what they have done it will NOT pass new code, you will not collect \$200.00 and you will not be issued a permit/license. Even the type, location and size of your signage will come under the codes department and it will cost you \$\$\$\$\$. It will seem like everybody you meet will have their hand out and it won't be to shake your hand! :-D

Tom Lehmann/The Dough Doctor

225

/ [Re: iced water for flour with ascorbic acid](#)

It "can" be a solution BUT the "fly in the ointment" is that by doing so it is possible to reduce the yeast level sufficiently so as to reduce the oven spring characteristics of the dough which can lead to the development of the "dreaded gum line".

Tom Lehmann/The Dough Doctor

226

/ [Re: Freezing dough](#)

Before diving head first into heat n' eat pizza I would HIGHLY encourage you to thoroughly test your concept. There is a reason why essentially all of the ready made pizzas available in the frozen foods case are made on par-baked crusts, the reason being that it is extremely difficult to heat the entire pizza (crust and toppings) properly without over doing one or the other. Added to the challenge is the vast array of different types of consumer ovens in use and you can see a problem brewing. Additionally, be sure to check on all of the state and Government regulations that you will need to abide by. For example, if you will be putting meat on your pizzas you will be USDA inspected, and have a USDA inspector on premise at all times during production (this will be at YOUR cost too). Just giving you a "heads-up".

Tom Lehmann/The Dough Doctor

227

/ Re: Question about yeast-less doughs?

They certainly will spoil and possibly in a worse way than a yeast leavened dough. Flour has a relatively high possibility of being contaminated with Ecoli or Salmonella (just look at the number of recent flour recalls), without the acid and alcohol production of the yeast it is entirely possible for these, or other, organisms to eventually grow in the dough, true, baking will destroy them but not before creating havoc through cross contamination. For a refrigerated dough it's probably not a good idea to hold it more than a week due to the possibility of microbial growth and a higher than normal probability of mold growth which only takes about 4-days to colonize.

Tom Lehmann/The Dough Doctor

228

/ Re: Pizza slice reheat

Most shops just reheat the slice right on the deck. It's common for some debris to collect on the deck surface but this is easily removed using an oven rake and brush (metal blade scraper on one side and a brush on the other side).

Tom Lehmann/The Dough Doctor

229

/ Re: Keep Crust from Forming While Dough Balls Wait for Stretch?

Now you know why I always say to lightly oil the top of each dough ball after placing it in the dough box. It keeps it from drying out during the cross-stack period and also when you're using the dough balls to make skins.

Tom Lehmann/The Dough Doctor

230

/ Re: iced water for flour with ascorbic acid

Ditch the "dough in the freezer" approach, instead either store water in the cooler or do as Amolapizza suggested. The easiest way to make your own crushed ice is to put ice cubes in a plastic bag and pound on it with a hammer or mallet, instant crushed ice! ;D

Tom Lehmann/The Dough Doctor

231

/ Re: Neapolitan dough problem

I can't tell for sure without getting my hands into the dough but from the pictures provided, it looks like the flour might be over oxidized.

This is a very common problem with flour that is not stored in the freezer. Five gallon buckets are fine for storing flour in but it does not address the oxidation issue. Flour oxidizes naturally as it is stored and is pretty significant already at 30-

days for a flour that is not treated at the mill with AA (ascorbic acid). We had some discussion on this very topic some time ago if you want to go back and research it in the archives.

Tom Lehmann/The Dough Doctor

232

[/ Re: Keep Crust from Forming While Dough Balls Wait for Stretch?](#)

You open the box and release the humidity trapped in the box, then repeat, repeat, repeat = dry dough balls. The very thin plastic film easily drapes over the individual dough balls and because it is a smaller space the moisture loss is less when the plastic is moved. It's almost like having each dough ball in its own individual plastic bag or dome as opposed to the large dough box. Dough boxes are really designed for use in pizzerias not home use.

Tom Lehmann/The Dough Doctor

233

[/ Re: Is it possible to get a crispy bottom crust in a home oven \(without par-baking\)?](#)

You bet it makes the slice more crispy to put it back in the oven to re-freshen it! Putting the fresh baked pizza on/in a pan doesn't do anything to encourage a crispy crust either. It's better to place it onto a screen where it can freely steam off as opposed to a solid pan which will force the steam back into the crust. Ripple sheets also work well for this application too.

Tom Lehmann/The Dough Doctor

234

[/ Re: Keep Crust from Forming While Dough Balls Wait for Stretch?](#)

The flour actually encourages the development of a dry skin or crust as it dramatically increases the surface area. I really don't like the damp towel either as it can cause the dough balls to pick up more dusting flour and make it harder to get it off, instead, try using one of those very thin, light weight plastic bags that you get from the dry cleaners, these bags are about as light as those that you get at the supermarket for your vegetables. You can split these bags open and use them too. Just drape over the dough balls to prevent drying, you can then remove just one dough ball without uncovering all of the rest.

Tom Lehmann/The Dough Doctor

235

[/ Re: Airy Sicilian style?](#)

Please explain to me how freezing a par-baked crust removes moisture from it as opposed to allowing it to set out on a rack at room temperature?

Tom Lehmann/The Dough Doctor

236

/ Re: Steaming your Pizza during parbaking? (Home Oven)

Something to keep in mind, most ovens are not specifically designed to be used with steam. Steam creates a number of issues in an oven, the greatest is that it will mix with the byproducts of yeast fermentation (acids, alcohol and carbon dioxide) which are then carried to all internal parts of the oven where they are concentrated as the moisture evaporates, these acids can/will do irreparable damage to an oven in a very short time. I realize that this is in a home setting but the damage can still occur, just making you aware of this.

Tom Lehmann/The Dough Doctor

237

/ Re: iced water for flour with ascorbic acid

One of the manufacturer recommended methods for adding IDY is to add it to the dough after the dough has formed in the bowl. We normally don't recommend that method only because we have found that all too many times one will forget to add the yeast..Oops! :o

Amylase has no impact upon the dough temperature at the mixer. You should always be targeting a specific finished dough temperature that is correct for your shop conditions, equipment and dough management procedure, this might mean that you will need to use ice water, refrigerated water or possibly even ice as part of the total water weight.

Tom Lehmann/The Dough Doctor

238

/ Re: Oven problem or dough problem

Be sure to provide your dough formula as well as your dough management procedure and give information on the oven that you have as well as the finger profile it is equipped with, the baking time and temperature and what you are using for a baking platform (pan, screen, disk, etc.).

Tom Lehmann/The Dough Doctor

239

/ Re: Help getting bottom crispier please

Doing the easy thing first, the first thing I would do is to reduce the oven temperature to something in the 475 to 500F range and try baking the pizza a little longer (7-minutes is a good target time).

Tom Lehmann/The Dough Doctor

240

/ Re: Steaming your Pizza during parbaking? (Home Oven)

The reason for using steam in the oven for baking certain types of breads and rolls is not for heat transfer, but instead to cool the outer portion of the dough (crust portion). Since the dough is much cooler than the steam (212F/100C) you get

condensation forming on the surface of the dough which both cools the dough (actually keeps it cooler for a longer time during the baking process) which prevents the crust from forming and allows for greater expansion (oven spring) during baking. The condensation on the dough also serves to keep it flexible and extensible which allows for expansion without the dough tearing or developing a break and shred.

In commercial production of par-baked crusts and buns (think of those WONDERFUL dinner rolls we'll be serving at Thanksgiving dinner) it is a common practice to use some steam injection in the oven during baking to allow the crusts and buns/rolls to be fully baked without crust color development, or at least minimal crust color development. This is because the evaporating moisture from the dough prevents the surface from reaching the 350F/176.6C necessary for color development while still allowing for a thorough bake with an internal temperature of 180 to 190F/82.2 to 87.8C. When some color development is desired the steam is used only for the first part of the baking cycle which allows the dough to dry off and reach a temperature where crust color can begin to develop.

Tom Lehmann/the Dough Doctor

241

[/ Re: Is it possible to get a crispy bottom crust in a home oven \(without par-baking\)?](#)

Since "00" flours are not typically compatible with home oven baking temperatures I would suggest putting the "00" flour aside for now and using only a malted flour with about 12% protein content, then when you get a crispier crust you can begin experimentally replacing a portion of the regular flour with your "00" flour. Allow the dough balls to CF for 48-hours. You should be OK at 500F, tell us about the stone that you are baking on, there are many iterations of baking stones and it helps to know what you are using. Also, how long do you allow the oven and stone to preheat? Where is the stone positioned in the oven? Tell us something about your oven too. What is your baking time? Lastly, when you say the crust isn't crispy, how long after removing the pizza from the oven are you making this determination?

Tom Lehmann/the Dough Doctor

242

[/ Re: Is my kneading speed good ? \(stand mixer\)](#)

For that small of a dough you certainly don't want to mix the dough at a slower speed. You would get better mixing action with a larger size dough.

Tom Lehmann/The Dough Doctor

243

[/ Re: Is my kneading speed good ? \(stand mixer\)](#)

I'm unable to access your video but if you are mixing at speed #3 on a 5-speed mixer it should be OK. Specifically, what kind of mixer do you have? Can you send a picture of it along with the dough agitator?

Tom Lehmann/The Dough Doctor

244

[/ Re: Cold Ferment Plastic Bag Method Advice](#)

Using 500-gram dough balls you can probably pattern the dough balls 3 X 5 (15 total count) on a sheet pan. Space four plastic spicer bottles on the sheet pan between dough balls to act as a spacer to allow for stacking another sheet pan above it. By the way, your total dough absorption is 64% (not 65%) with 1% oil.

Tom Lehmann/The Dough Doctor

245

[/ Re: Neapolitan dough problem](#)

Just how long have you had the flour which you are now using?

Tom Lehmann/The Dough Doctor

246

[/ Re: Ideal rise at RT and CT? When to move?](#)

If you are going to CF (cold ferment) it's best to take the dough directly from the mixer to the bench for scaling and balling, then directly into the fridge and leave it there for the duration of the CF time, then, if you want to do some RF (room fermentation) you can do it at that time and use the dough when that's finished. Going back and forth between CF and RF serves no useful purpose except when working with previously frozen dough, but that's a whole different story. Keep in mind that all pizza doughs do not have to double in size, some doughs show little movement over the entire fermentation period but still make a great crust. Putting a sufficiently large "bulk" dough in the fridge only leads to variability in the dough as only the outer portion of the dough gets sufficiently cooled to control the rate of fermentation while the core remains warm and continues to heat up and merrily ferment away, giving you two different doughs at the end. By breaking the bulk dough down into individual dough pieces and forming into balls you get smaller dough pieces with a smaller cross section which are more effectively cooler to a temperature where the fermentation rate can be effectively controlled which in turn, results in greater uniformity/consistency in dough performance. It might be well to note that a "bulk" dough weighing less than about 2-pounds performs more like a dough ball in the fridge than a true bulk dough that weighs more than two pounds and has sufficient mass to perform like a bulk dough.

Tom Lehmann/The Dough Doctor

247

[/ Re: Struggling and unsure what ...](#)

T-P-D;

You've got the right approach, I'm betting you'll be enjoying some good pizzas along the way. Just remember to take notes and record temperatures along the way and take some pics to share. :chef:

Tom Lehmann/The Dough Doctor

248

/ Re: Silly question, dough sliding back down on the sides

We used to refer to shortening as "glue" to hold the dough in place while its in the pan.

Before anyone asks, NO, it doesn't cause the baked crust/pizza to stick in the pan.
Tom Lehmann/The Dough Doctor

249

/ Re: Dough issues during stand mixing

You should be mixing at a speed sufficiently high to allow centrifugal force to pull the dough off of the agitator during the mixing process. You might go to my web site <www.doughdoctor.com> and watch my video on making dough to get an idea of how this is done.

Tom Lehmann/The Dough Doctor

250

/ Re: Ideal rise at RT and CT? When to move?

Placing a fermented dough ball in the fridge isn't going to do much to control the rate of fermentation. The fermentation has reduced the density of the dough making it an excellent insulator which will prevent much, if any, temperature change in the critical core of the dough ball. You might see that the dough ball isn't expanding as much in the cooler but this is only due to the now colder outer portion of the dough ball exhibiting resistance to expansion, the internal core is still warm (may actually be getting warmer due to heat of metabolism) and fermenting. This is why, in commercial practice, we open over fermented dough balls into skins that are then placed on screens and stored in the cooler, by doing this we significantly reduce the cross section of the dough/dough ball thus allowing it to be more effectively cooled all the way through as opposed to just on the surface.

Tom Lehmann/The Dough Doctor

251

/ Re: Fritos corn chips in dough???

We got the best results between 15 and 30% masa flour to REPLACE an equal portion of the white flour. It will impact the dough absorption so be sure to do an absorption test on the masa flour first (use the same absorption test that has been outlined for whole-wheat flour and multi-grain blends).

Tom Lehmann/The Dough Doctor

252

/ Re: Dough issues during stand mixing

Your mixing speed is too slow for the dough size.

Tom Lehmann/The Dough Doctor

253

[/ Re: Silly question, dough sliding back down on the sides](#)

Absolutely! Use Crisco or some other form of plastic shortening. If you want to use oil use the Crisco only on the side walls of the pan and use oil in the center section. To demonstrate this during our pizza seminar we used to prepare one pan with shortening and one pan with oil, then pick up both pans and invert them, plop! The dough in the oiled pan would just fall out while the dough in the pan with the shortening would stay in place. It also makes fitting the dough to the pan a lot easier too, try it, you'll see what I mean.

Tom Lehmann/The Dough Doctor

254

[/ Re: Fritos corn chips in dough???](#)

I've seen crushed corn chips used in the dough a number of times. In each case though the reason was to provide a unique flavor to the finished crust. You can achieve exactly the same flavor using masa flour/Maseca. This is because corn chips are made from a dough containing only masa flour, water and salt. The dough is then rolled thin, cut and fried. In some cases a flavoring or powdered cheese is applied immediately after exiting the fryer. We have used it extensively in developing Tex-Mex style pizzas.

Tom Lehmann/The Dough Doctor

255

[/ Re: AP flour.](#)

Since there is no "true" definition for AP (all purpose) flour there are significantly different versions of it from different manufacturers. Some mill it from soft wheat varieties while others mill it from hard wheat varieties. Within the group that mill it from hard wheat varieties it can range from a low of 9+% protein content to as high as almost 12% protein content. If you can, go to the web site of the manufacturer to see if you can find the protein content or try Googling (what is the protein content of XXXX all purpose flour). Let us know what you find out.

A good flour to look for that is readily available is Pillsbury Bread Flour also called Pillsbury Bread Machine Flour. This is really just the Pillsbury Superlative Flour repackaged in a consumer size package. It has approximately 12.6% protein content and it constitutes an excellent all around/general purpose pizza flour.

Tom Lehmann/The Dough Doctor

256

[/ Re: Dough not rising and too white](#)

Raj1;

One other thing, I see in your photos that the conveyor chain is carboned up quite a bit, when was the last time you pulled the conveyor for a thorough cleaning and

cleaned out the finger sleeves? Do you have a top and bottom finger map attached to your oven?

Tom Lehmann/The Dough Doctor

257

/ Re: Dough not rising and too white

Raj1;

Based on cost alone, I would suggest increasing the sugar content rather than the malt, but if you want to increase the malt you can do so as long as the dough doesn't become overly sticky.

Let's talk ovens; Your oven specifically. It's an air impingement oven, who is the manufacturer of the oven? Gas or electric? Did you buy it new or used? What are the top and bottom finger profiles? It concerns me that you are baking your pizzas so long and not achieving decent color even with malt and 4% sugar in the dough formula. In my air impingement ovens I used to get plenty of color even at 3-days CF with just 2% sugar. It's an uphill battle if you try to fix an oven problem with dough formulation.

Can you show a picture of the crust that you said is now all white?

Tom Lehmann/The Dough Doctor

258

/ Re: Struggling and unsure what ...

120 to 180 is a very high Lintner Value. I would suggest reducing the amount added to 0.05% of the flour weight and carefully working up from there if you can. We have had some discussion on Malt and Lintner value fairly recently, a quick search will allow you to learn more about this important aspect of the malt products that we use in pizza making.

Tom Lehmann/The Dough Doctor

259

/ Re: Dunkin' Donuts Yeasted Donuts copycat

Frying donuts at such a low temperature will result in a dry and oily finished donut. Yeast raised donuts typically have a shelf life of 4 to 6-hours (without additives), frying at a low temperature will further reduce this.

The corn starch is indeed a part of the powdered sugar, there is 3 to 5% corn starch in powdered sugar. The sugar used to make powdered sugar is dextrose, not sucrose.

There is no way to tell if putting a pot of water in with the dough would help at all as there would be very little evaporation from a "pot".

Maybe wet towels?

You want to have a hygrometer to measure the humidity in the air. This is easy to make, use two stem/dial type thermometers, two Styrofoam cups and a piece of paper hand towel. Put one thermometer through both sides of a cup (this will be the dry bulb). Push the other thermometer through the other cup about 2-inches up from the bottom of the cup. Add a few ounces of water to the cup (water should be at or close to the air temperature in the box), now, wet a strip of the paper towel,

wrap it around the stem of the thermometer allowing the two ends to drape down into the water, place both thermometers in the product zone in the box. After an hour, or so, read the temperature from both thermometers (the one with the wet towel is the "wet bulb" reading, the other one is the dry bulb reading. If you've done it correctly, the wet bulb reading will ALWAYS be the cooler of the two readings (due to evaporative cooling of the stem from the wet towel). Now get a RELATIVE HUMIDITY CHART (you can download one from the Internet), find your temperatures on the two axis lines and where they meet the number will be the relative humidity in the box. For donuts you want about 70% for most other things you want to have something around 85%.

Tom Lehmann/The Dough Doctor

260

[/ Re: pre-bake red sauce on cornicione?](#)

Sounds more like a "thing" to me. Trying to achieve a certain appearance.

Tom Lehmann/The Dough Doctor

261

[/ Re: Neapolitan dough problem](#)

Strange that the one thing you did not mention at all was dough temperature. As you've already discovered, fermentation has a huge impact upon the dough and temperature is the driver of fermentation, it's a variable that we seldom ever control or even monitor. If you have any data on your dough temperature as well as the temperature during the various stages of your dough management you should be able to plug those numbers back into the dough to see if that improves things, lacking that, you may need to begin experimenting with your dough (while keeping records of the dough and room temperature) to how temperature is impacting your dough. From your comment on the excessive elasticity I'm guessing that your bread machine might be getting the dough too warm, easy to check this out the next time you make dough. I'm guessing that you should be looking for a finished dough temperature (off of the bread machine) around 70 to 75F. That's a neat trick for most bread machines which is why I got rid of ours years ago.

Tom Lehmann/The Dough Doctor

262

[/ Re: Struggling and unsure what...](#)

75 to 80F is much too cold for hydrating and activating the ADY in, I suggest using 95 to 100F water.

Degree L is the Lintner Value use for measuring the diastatic activity of the malt.

Too much of the wrong malt will result in wet, sticky doughs.

I really wouldn't call 55F as CF as most people think of CF being done at a refrigerated temperature in the 35 to 40F range. I mention this because if the process calls for CF and you are doing it at 55F your dough will receive significantly more fermentation than anticipated.

Tom Lehmann/The Dough Doctor

[/ Re: Switching from shortening to oil.](#)

Oil and shortening both weigh the same so if you are asking how much oil to use when replacing the shortening the answer is: Use the same weight of oil as you do shortening. If you want flavor use POMACE GRADE OLIVE OIL as opposed to EVOO, you could also just use lard, trans free and if you use NON-DEODORIZED LARD it'll add a great flavor. Keep in mind that if you use oil it is recommended that you use the delayed oil addition method of dough mixing.

Tom Lehmann/The Dough Doctor

[/ Re: Maximize flavor](#)

Fermentation is indeed the key to achieving a great flavored finished crust. How much fermentation is a question that only you can answer as it will be dependent upon the fermentation tolerance of your flour, the dough absorption, the amount of yeast being used and the temperature of the dough during the time it's being managed and then we also have to add baking. Lots of variables there! Without knowing anything about what you are doing here is what it's going to take;

- 1) Weigh all ingredients.
- 2) Measure the temperature of the water, flour, room and finished dough temperature.
- 3) Know how long the dough is being mixed so you can replicate it.
- 4) When you are using a multi-stage dough management procedure as you are be sure to record the time between each step and if applicable, the dough temperature.
- 5) Record everything and keep good notes.

By doing this, when you get something that you really like you will know exactly what you did and you will be able to retrace your steps to get to that place again. It will also allow you to look for short cuts to that sweet spot without losing track of knowing exactly where you are at in your dough making process.

Tom Lehmann/The Dough Doctor

[/ Re: Struggling and unsure what ...](#)

I have a couple of questions:

- 1) What is "DCL Active"?
- 2) Diastatic malt: What degree L is it? Is this a dry malt powder or a syrup?
- 3) Have you tried making a dough with less dough absorption? I'd suggest dropping back 5% on the absorption.
- 4) I did not see where you are activating the ADY in 95 to 100F water prior to addition to the dough.

Tom Lehmann/The Dough Doctor

[/ Re: Pizza Screens shedding?](#)

My recommendation is to wash the screens but DO NOT ALLOW THEM TO SOAK IN SOAPY WATER, rinse well, towel dry and then force dry in the oven. After that, coat with salad oil and place back in the oven at 425F. and allow to bake for 20 to 30-minutes. You might need to repeat this a couple of times. At first you will see an amber colored finish beginning to form, this is the seasoning, after the initial seasoning you will not need to do it again. With continued use the screens will continue to darken in color and eventually become almost black in color (this is what you are looking for) DO NOT bake on an unseasoned screen, if you do the screen and dough will stick together. Once seasoned, NEVER EVER, EVER soak anything that has been seasoned in water!! This will cause the seasoning to come off like a bad sunburn. We have discussed how to season and clean seasoned pans a number of times here.

Tom Lehmann/The Dough Doctor

267

[/ Re: put the pizza pan directly on the heating coil?](#)

I think the first thing I would do is to shelve the volumetric portions and get a scale so I could weigh my ingredients and then pick up a dial/stem type thermometer. This will allow you to accurately weigh each of your ingredients and measure dough temperature at the various stages of your processing allowing you to zero in on achieving the results you're looking for without the need of using the old pasta on the wall methodology.

If you can provide us with your "recipe" and dough management procedure we might see something that would help us in providing you with a good starting point to get the open crumb structure you're looking for.

Tom Lehmann/The Dough Doctor

268

[/ Re: The reasons for different types of dough](#)

Pizza dough is made from a pretty basic dough formula such as:

Flour: 100%

Salt: 2%

Yeast (CY): 1%

Water: 62% (variable)

In this case sugar and oil are optional ingredients used for specific purposes such as making a more tender eating crust or providing for more crust color or nutrient for the yeast.

To the above formula add 4% oil and you have a great deep-dish/thick crust formula.

Use the formula as shown to make a basic thin crust dough.

Increase the water to 68% for a New York style pizza.

You can also make a somewhat Neo. style pizza by increasing the absorption to 75%

If you want to make a basic pizza that will emulate those made by the big box stores just make the dough with 2% oil and 2% sugar and you can get pretty close by manipulating the dough management procedure.

It's when we begin making specialized types of pizzas that we really need to have more specific dough formulas for the pizza being made. If you want to make a more traditional Neo. type of pizza you will need to reduce the yeast level substantially and manage the dough in a very different manner for the desired outcome. Most American style pizzas are not very complex at all and most seem to fall within pretty close formulation parameters, even the dough management procedures for American style pizzas do not vary all that much which explains why they tend to be so similar regardless of the name on the store front.

Tom Lehmann/The Dough Doctor

269

/ Re: Very airy dough

When you put the salt into the dough water the dough comes together a bit faster in the bowl during the mixing process as a result of the salt tightening the gluten as it is being formed. When salt is added as a dry ingredient it can take a minute or so longer for the dough to come together forming a cohesive dough. In home pizza making this is not an important issue but in a commercial setting, be it a pizzeria or a commissary, this can be very important in determining how the dough is mixed.

Because the dough becomes tighter in the presence of salt it receives more mixing action sooner during the dough mixing process thus developing gluten at a somewhat faster rate. The premise to this is that firm/tight/stiff doughs tend to develop gluten at a faster rate than very slack doughs.

Tom Lehmann/The Dough Doctor

270

/ Re: soft neapolitan cornicione

AntonioT;

That's a classical example of what I always tell perspective new pizzeria operators; "You don't have a vote in the type of pizza you will make, your customer will dictate that, your job will be to make that pizza and put the money in the bank".

Tom Lehmann/The Dough Doctor

271

/ Re: Bake pizza so the mozzarella ends up with a chewy texture

Two things that you can do;

- 1) Some brands of non-frozen mozzarella cheese will turn tough and chewy when frozen, so you might try freezing your cheese for a week or two prior to use to see if your cheese is one of those brands.
- 2) Open your cheese and re-wrap it in Saran Wrap/stretch wrap and store it in the fridge for about 6-weeks before using it. This allows the cheese to dessicate, resulting in a much chewier cheese after baking on the pizza.

Many of the older cheeses were never frozen, just refrigerated and when the pizzeria operators stored the cheese in the freezer or held it too long in the cooler

it gave the chewy characteristic. Today most shops do not want the chewy characteristic as it poses too much of a potential choking hazard.

Now, if by "chewy" you actually mean "stretchy", take a look at provolone cheese as it tends to be more stringy than mozzarella.

Tom Lehmann/The Dough Doctor

272

[/ Re: Allow myself to introduce....myself. - Lincoln, NE - Koda 16](#)

I was just there last Sunday delivering a motorcycle!

Welcome aboard!

Tom Lehmann/The Dough Doctor

273

[/ Re: "Good pizzas are 90% oven" "conveyor ovens are not great" Oven primer for newb](#)

The one thing that I find absolutely AMAZING about air impingement ovens is just how few operators know anything about them! They really don't have a clue as to how they bake, how the fingers work or the importance of the finger profile, or even what kind of different fingers are available for their specific oven. This observation doesn't necessarily stop at the owner/operator either, it also flows back to the oven manufactures too. I personally, have been very critical of this for a good number of years now and I can say that there are some of the manufacturers who are very good at working with their customers to find the best finger profile for their client's pizzas but there are still some out there who insist upon selling you an oven with a generic, one size fits all, finger profile which may or may not work the best.

When you toss in used ovens you are opening a Pandora's Box if you don't know EXACTLY what the top and bottom finger profiles are. Air impingement ovens are just that, they are "OVENS", nothing more, nothing less, they can be profiled to bake many different food items from seafood, cookies, bagels, and even pet foods, it all depends upon how the oven fingers are profiled. When these ovens turn up on the used equipment market they are sold as, you guessed it, PIZZA OVENS! It sure looks like a pizza oven, so it must be one...right!!

Deck ovens are not as prone to these issues, they are pretty straightforward to operate with only the baking temperature being a variable BUT don't forget that this can also pose problems too, these ovens can last a long time and over time the temperature management systems will fail and need replacement, I see this frequently. Then too, going back to the used equipment market place, all deck ovens are NOT pizza ovens! There are some deck ovens, especially those with steel decks, that were built for use in a small bakery or restaurant for baking bread and pastry items, not pizza. These ovens have smaller burners than those ovens built as a pizza oven so they will bake a few pizzas but lack the ability to retain baking properties under a continuous load. For good measure let's also look at electric deck ovens, especially those getting "long in the tooth", I've seen my share of these ovens from different manufacturers that just wouldn't bake a decent pizza because the heating elements were failing, so based on this alone, one might assume that

electric deck ovens are not the best for baking pizzas either.

It's easy to draw the wrong conclusions when we don't have all the facts. A number of years ago I wrote an in-depth article on the different types of ovens for either Pizza Today or PMQ, I don't remember anymore which one it was, but maybe Peter can work his magic and find a link to the article if anyone is interested.

Tom Lehmann/The Dough Doctor

274

[/ Re: Emergency dough](#)

Raj1;

Yes, there is an "emergency" dough procedure but I don't recommend its use as you have outlined as it is too different from your regular production dough. Instead, it is intended to be used in situations where all of your regular dough has been lost, forcing you to close the store, in this case the emergency dough will allow you to remain open. We always tell our clients to manage their dough in such a manner so as to have carry-over dough at the end of the day which can be used on the following day. Let's say your best day of the week is 100 pizzas, you always have an inventory of 15% greater than this on each night of the week and when you make dough make just enough to rebuild your dough inventory back to the 100 + 15% (115). This is where an Effective Dough Management program is worth its weight in gold in a commercial operation as it allows you to use your dough over a 2 to 3-day period and never toss out any dough unless it hits the floor. Sales/dough projections and dough management are critical aspects of operating a pizzeria.

Tom Lehmann/The Dough Doctor

275

[/ Re: Trying to understand some things I've been doing for years, but never asked](#)

For all practical purposes, fermentation begins as soon as the dough begins to mix and ends with the cessation of oven spring when the dough temperature reaches the thermal death point of the yeast (approximately 137F). Keep in mind that when discussing dough management total fermentation time includes both the dough fermentation and dough proofing times. Dough proofing is the time allowed for the dough to rise after shaping, for example a deep-dish pizza dough might be fermented for 24-hours, and then shaped and placed into the pan and allowed to proof for an additional 60-minutes before dressing and baking. If a dough is fermented in bulk or as a dough ball it doesn't matter, it's still referred to as the "fermentation" period. When cold fermenting, the time that we allow for the dough balls to warm up after removal from the fridge is not counted as fermentation or proofing time since the dough is too cold to ferment very much during this relatively short period of time, this is ASSUMING that the dough is being allowed to temper to the 50 to 60F range before opening, dressing and baking.

Tom Lehmann/The Dough Doctor

276

[/ Re: Dough is not light and fluffy](#)

And to add a few logs to the fire;
What was the finished (mixed dough temperature?
You said the dough was wet, did you leave the containers open until the internal dough ball temperature reached 50F?
After removing the dough balls from the fridge you only need to wait for the INTERNAL dough ball temperature to reach 55 to 60F before opening them into skins....4-hours was wwaayy too long.
You will also want to get a scale so you can begin weighing your ingredients, this will also allow you to put your dough "recipe" based on volumetric portions, into a dough formula, based on ingredient weights which can then be expressed in bakers percent to make evaluation of the dough formula much easier. By weighing your ingredients you will have significantly better consistency in dough performance too.
Tom Lehmann/The Dough Doctor

277

/ [**Re: Popping dough**](#)

Amolapizza;
That's an EXCELLENT video! Shows correct dough development with the spiral mixer and also shows effects of biochemical gluten development.
Thank you for making it and sharing it.
Tom Lehmann/The Dough Doctor

278

/ [**Re: Popping dough**](#)

Not at all, it sounds like you might be making a fairly low absorption (50's %) range dough.
Rom Lehmann/The Dough Doctor

279

/ [**Re: Superstitions?**](#)

That's how you tell the "good guys" from the "bad guys" in the old western movies too, the good guys are always wearing white hats. :-D
Tom Lehmann/The Dough Doctor

280

/ [**Re: Freezing dough ball question**](#)

The sooner you can freeze the dough balls after mixing the better the finished results will be. The procedure that I developed for commercial frozen dough balls is as follows:
1) Slack-out (defrost) dough balls in the fridge for 12-hours.
2) Remove from fridge and allow to set at room temperature until the INTERNAL dough ball temperature reaches 50 to 55F (pick a temperature).
3) Place back into the fridge to CF for 24-hours.

4) Remove from fridge and allow to set at room temperature until the INTERNAL dough ball temperature reaches 60F.

5) Begin opening the dough balls into skins for immediate use.

Tom Lehmann/The Dough Doctor

281

/ [Re: Pizza steel experience and what went wrong.](#)

It appears that the top of the pizza still needs a lot of work which is beyond the dough, or is that a par-baked crust which has been dressed and ready to go into the oven?

Tom Lehmann/The Dough Doctor

282

/ [Re: Margarita pizza](#)

The photo (12 of 16) showing four pan different black colored steel pan options shows what appear to be very similar to your existing pans, the second one from the right and the last one (#4) from the right. Get a few in the sizes that you need and give them a try.

Tom Lehmann/The Dough Doctor

283

/ [Re: Dough balls too flat](#)

Start out at 62% absorption again and adjust if necessary, don't ever be afraid to adjust the dough absorption, flour is rather variable when it comes to absorption, especially the Caputo flours.

Tom Lehmann/The Dough Doctor

284

/ [Re: Yeast increase](#)

It's perfectly safe to eat yeast just as it is (in moderation). I know individuals who actually eat raw yeast believing that it's good for them. I don't know about that, but they're healthy. For me, I'll take a pass on the raw yeast and consume it after it has been allowed to do its work in fermenting the dough and getting killed during the baking process (much more tasty that way). In any case, there is nothing to fear in eating raw yeast in moderation or any amount of spent yeast in baked dough.

Tom Lehmann/The Dough Doctor

285

/ [Re: Vegetarian pizza](#)

The one caveat is that you want to leave enough water/moisture in the mushrooms to prevent them from burning during baking of the pizza. Remember, mushrooms are approximately 90% water by weight. I've seen pizzas made where the

mushrooms were too low in moisture content going onto the pizza and after baking the mushrooms were all but black.

Tom Lehmann/The Dough Doctor

286

/ [Re: Sour dough starter question](#)

Has your starter been stored under refrigeration since you started it? Most starters do not perform well at refrigerated temperatures but if you have kept the starter at refrigerated temperature the micro-flora present in the starter has adapted and will continue to flourish under those conditions whereas if you have stored it at ambient temperature (whatever that might be) it will not fare as well when held under refrigerated temperature (40F +/-).

Tom Lehmann/The Dough Doctor

287

/ [Re: Margarita pizza](#)

The deep-dish pans have plenty of color on the outside bottom, but the other pans don't and that could be a contributing factor to your long baking time.

Tom Lehmann/The Dough Doctor

288

/ [Re: Dishwasher safe serving pans](#)

I personally don't know of any manufacturers still using galvanizing, instead they are all using TIN PLATE which is very different from galvanizing, with none of the safety issues either.

Tom Lehmann/The Dough Doctor

289

/ [Re: Yeast increase](#)

You should not need to adjust the dough absorption seasonally, ditto for the yeast level but only if you are managing the dough correctly, by this I mean targeting a specific finished dough temperature (70F/21.1C is a good starting point) and maintaining that temperature for all of your doughs.

Tom Lehmann/the Dough Doctor

290

/ [Re: Dishwasher safe serving pans](#)

The aluminum pans get discolored due to a reaction between the alkali in the soap and the aluminum. This is especially bad with raw/bare aluminum pans. Anodized aluminum has the protective anodizing so the problem isn't as bad until the anodizing is worn off and considering the pan will be used for table service that might happen sooner than later. Steel pans are galvanized to protect from rusting

so they don't suffer the same fate but over time rusting could be a potential issue.
Tom Lehmann/The Dough Doctor

291

/ [Re: Margarita pizza](#)

It looks like pictures of two different types of pans, deep-dish pans and what appear to be similar to what we call a "cutter" pan (40 degree sloped sides). The cutter pans from what you sent are bright on the outside bottom, they should be dark colored like the inside of the pan. The deep-dish are well seasoned on the inside but there doesn't appear to be a picture of the outside bottom so I can't tell.
Tom Lehmann/The Dough Doctor

292

/ [Re: soft neapolitan cornicione](#)

I might be a bit concerned about using sugar or malt at the high baking temperature employed here, but it's always worth a try.
Tom Lehmann/The Dough Doctor

293

/ [Re: Dough Conditioners/Enhancers](#)

Absolutely! The amount of actual ascorbic acid used is only 30 to 120 ppm (parts per million) based on total flour weight. When we use it in tablet form each tablet (about the diameter of a dime and 1/4-inch thick) provides 30-ppm, the rest of it is filler too.
Tom Lehmann/The Dough Doctor

294

/ [Re: High Gluten Flour](#)

I couldn't agree with you more ^^^
My "go to" flour for making pizza is 12.2% protein content on average.
Tom lehmann/The Dough Doctor

295

/ [Re: Pizza comes out soggy in the middle...](#)

While the bricks will be a bit hotter than the air above the bricks the main reason for what you saw was due to the type of heat transfer taking place. Conduction due to direct contact with the hot object allows for very rapid heat transfer, convection due to contact with the air is a pretty poor heat transfer mechanism. This is why even though a commercial deck oven might be baking pizzas at 525F we can safely reach into the over without getting burned, just DON'T touch anything in the oven! When you bake those cookies on a raised rack above the bricks you changer the type of baking from conduction to convection.

Tom Lehmann/The Dough Doctor

296

[/ Re: Semolina and whole wheat flour in formula](#)

While both whole-wheat and semolina flour are indeed included in the dough absorption equation they must be calculated separately from the regular white flour. This has been discussed along with a procedure on how to do it previously here, a quick search through the archive will take you to it.

Tom Lehmann/The Dough Doctor

297

[/ Re: High Gluten Flour](#)

As a point of interest, those pics above look just like what we were demonstrating to our students, additionally, you see in the pics what appears to be darker/less translucent areas within the dough sheet, those areas are referred to as the "gluten web structure" or just "web structure". This is important to know as it is an indication of gluten development, the finer the web structure, the better/greater the gluten development. Both pics show EXCELLENT and very complete gluten development.

Tom Lehmann/The Dough Doctor

298

[/ Re: Dough Conditioners/Enhancers](#)

One thing to be aware of is that while ascorbic acid is indeed the same as vitamin-C the forms used in a dough to act as a "dough improver" are NOT the same. The form of AA used in dough conditioners or as a dough conditioner is either fat encapsulated or micro-crystalline encapsulated to slow/delay its reaction in the dough. Ascorbic acid reacts very fast unless treated in this manner thus significantly reducing its benefit as a dough strengthener. When added at the flour mill (this is the AA that you see shown on the flour bag) it is added to rapidly oxidize the flour so it is not treated/encapsulated. This is important as it improves the baking properties of the flour. When flour is not properly oxidized after milling it is referred to as "green" flour. Before the advent of ADA and AA the bakers used to store their flour for 30-days or more to allow for normal oxidation to take place....not very practical anymore to say the least! This natural oxidation also explains why flour that is milled towards the end of a crop year tends to show stronger characteristics than new crop year flour (wheat berries, not just flour will naturally oxidize), and it also explains why if we, at home, store flour at room temperature can find that for some strange, unexplained reason the flour seems to become stronger, now you know why, natural oxidation is the answer.

Tom Lehmann/The Dough Doctor

299

[/ Re: Vegetarian pizza](#)

Raj1;

No, if it did you would have dehydrated mushrooms. You are just reducing the moisture content. In commercial applications we use moisture controlled vegetable toppings with excellent results. The DiGiorno brand of frozen pizzas utilize the moisture controlled IQF (individual quick frozen) toppings. They retain color and texture much better than fresh toppings making them especially well suited to use in frozen pizzas.

Tom Lehmann/The Dough Doctor

300

/ [Re: Pizza comes out soggy in the middle...](#)

Due to their high sugar content cookies will burn, especially when placed directly on the stone just about every time they see temperatures above the 350 to 400F mark. If you look at the bottom of most cookies you will see that the bottom is a bit darker than the rest of the cookie except for the rim which is sometimes also dark due to lateral heat penetration. To bake cookies with balanced color it is common to remove the cookies from the oven before they are fully baked they are then allowed to cool on the baking sheets during which time the cookies finish baking from the latent heat stored in the baking sheet. Point is, cookies are a poor test media for a pizza oven, the one thing you did learn from the test though is that while the bricks remained hot the air in the oven did not as the top and bottom color were different. Remember too that the crown height and shape in an oven has a huge impact upon how that oven will bake different products.

Tom Lehmann/The Dough Doctor

301

/ [Re: soft neapolitan cornicione](#)

What you have is pretty standard for a NP pizza.

A couple of things you might try are as follows:

- 1) Brush the edge with oil immediately prior to baking.
- 2) If you can "dome" the pizza in your oven this might also help.
- 3) As soon as the bottom of the pizza is baked place a screen under the pizza to allow for a longer baking time.
- 4) Change direction and make a New Haven style pizza.

Tom Lehmann/The Dough Doctor

302

/ [Re: Flour](#)

I would begin my search by looking right here, over the years we have had a lot of discussion on different types of flour that can be used to make pizza. While typical bread flours are appropriate for making pizza the reverse cannot be said for making all types of breads. Pastry flours are a totally different animal as they are generally made from soft wheat varieties which form a much softer/weaker gluten structure necessary for the tender eating characteristics associated with pastries. Then there are cake flours. There are two basic types of cake flours, high ratio cake flour for use in cake formulations where the sugar is greater than the flour. These

flours are chlorinated AKA chlorinated cake flour. The other cake flour is for cake formulas where the sugar is equal to or less than the flour AKA low ratio cakes. Low ratio cake flours are typically the same as a pastry flour but are usually milled to a finer particle size, however for home use an all-purpose flour will work just fine for making low ratio cakes. Then there is whole-wheat flour, when it's made from hard red winter wheat or spring wheat varieties it is known as whole-wheat flour and it is commonly used in breads, rolls, buns, pizzas either in total or in part. When the whole-wheat flour is made from varieties of soft wheat flour it is known as "graham" flour. Yes, graham crackers are made from whole-wheat flour and it is used in pastries, cookies, and just about any other type of baked product not requiring a lot of strength/gluten. On top of this, there are hard red wheat varieties where the wheat berry is a dark mahogany to brown in color, the color is due to tannin which gives the wheat a somewhat bitter taste, then there are hard white wheat varieties (only type of wheat grown in Australia) which is growing in popularity here in the U.S. due to its greater acceptance as a whole-wheat flour owing to its reduced tannin content making the flour less bitter tasting, lastly, you have spring and winter wheat varieties. Due to the different climatic conditions/geographic regions that the wheat is grown in some areas grow winter wheat which is planted in the fall and harvested in the following summer. In colder regions the wheat is planted in the early spring and harvested in the early fall to late summer, this is known as spring wheat. Typically, spring wheat varieties will have a higher protein content than winter wheat varieties but they will perform equally on an equal protein basis. That's it in a nutshell, now you can read up on the finer details to learn more about each.

Tom Lehmann/The Dough Doctor

303

/ Re: Dough Conditioners/Enhancers

Wow! Dough conditioners, there are sooooo many different kinds of them. Some make the dough softer and more extensible, some make it tighter and less extensible, some make it feel drier, some make it stronger and then there are the enzyme based dough conditioners and the non-enzyme based conditioners. Whatever else is also in that bag of flour that you've got aside from "wheat flour" by law, has to be shown on the bag label. In the past we used to see potassium bromate added to the flour as a flour improver, not a dough conditioner but due to health concerns we don't see it used nearly as often as we used to. We still see a lot of ascorbic acid being used as a flour improver so it's pretty common to see it on the label. Then too we used to see Maturox on the bag label too (azodicarbonamide) but even that has fallen from favor in the past few years. Many flours are malted so malted barley flour will often be seen on the bag label however that is now being replaced by the addition of amylase enzymes to the flour, so now we often just see "enzymes" listed on the label. Then there is the standard flour enrichment declaration that most flours will have as many states require that all flour sold in their state be enriched to Federal standards. Whole-wheat/whole-grain flours are exempt from this requirement since non whole-wheat flours are enriched to the same vitamin and mineral content as whole-wheat flour. Today, for the most part, the only difference between white flour and whole-wheat flour is the bran/fiber content contained in the whole-wheat flour.

One other thing, because there are so many different kinds of dough conditioners with different functions a dough conditioner is never randomly added to any flour,

it is added only to address a very specific issue associated with the dough. I used to tell my students to think of dough conditioners as medicine for the dough. You have to know what's ailing the dough before you can prescribe a medicine (dough conditioner) to address the problem. When working in Mexico back in the 70's I used to bring an assortment of different functioning dough conditioners with me. To facilitate handling the ones I brought with me were all in tablet or gelatin capsule form and once I knew what the issues were with the dough it was easy for me to select the correct dough conditioner and add it to the dough, these became known as "aspirina para la masa" (aspirin for the dough) and since I was the one giving them out I became known as the "El medico para la masa" Literally translated: The Dough Doctor, the title stuck.

Tom Lehmann/The Dough Doctor

304

/ [Re: Neapolitan dough in a spiral mixer](#)

With those conditions water stored in the walk-in over night would be a good place to start.

Tom Lehmann/The Dough Doctor

305

/ [Re: Eggplant as sauce?](#)

I make egg plant lasagna frequently so why not pizza? I've not done it, but it sounds interesting with lots of opportunity to experiment.

Tom Lehmann/The Dough Doctor

306

/ [Re: Margarita pizza](#)

Raj1;

Your temperature is OK but the baking time is much too long. I'm betting the problem is with your pans being too light in color, can you send a picture of your pans so we can see what the bottom and outside look like? A more typical baking time would be 6.5 to 7-minutes max. This will probably correct the cheese issue too. If it doesn't the top finger profile will most likely need to be changed to something flowing less air.

Tom Lehmann/The Dough Doctor

307

/ [Re: Pizza steel experience and what'r wrong.](#)

I'm betting that you didn't bake it at a temperature north of 800F. That's what it takes to bake a pizza made with Caputo 00 without any added sugar or diastatic malt in the dough formula.

Tom Lehmann/The Dough Doctor

308

/ Re: Freezing pizza dough

Assuming you would be static freezing the dough (0 to -15F) with little to no airflow, you can freeze the dough with a projected frozen shelf life (use it or lose it) of about 10-days. For anything longer than that you will need to go with blast freezing (-25 to -38F with airflow of 600 to 800 linear feet per minute or cryogenic freezing (liquid carbon dioxide or nitrogen) with pressure adjusted to give -45 to -55F in the product zone plus a holding freezer at -15F to allow the frozen product to equilibrate to a core temperature of 0 to +15F within 90-minutes of exiting the cryogenic freezer.

Vacuum packaging is NOT recommended due to the potential for clostridium growth.

Tom Lehmann/The Dough Doctor

309

/ Re: Dough not rising and too white

The diastatic malt (450-grams for \$6.75) is the one to use. They don't appear to provide any information on the L-value so I would suggest starting out at 0.25% and going up from there if necessary.

Tom Lehmann/The Dough Doctor

310

/ Re: Focaccia rising in pan

I like to think of focaccia like a bread, where you have to allow the dough to proof/rise in the pan before baking.

Tom Lehmann/The Dough Doctor

311

/ Re: Neapolitan dough in a spiral mixer

IR thermometers are fine for all but the internal dough ball temperature measurements, for that I recommend a low cost dial/stem type thermometer. Make sure it has a hex nut under the head/dial, this is the adjustment nut that is used to calibrate the thermometer.

To calibrate, use an oral thermometer available from any pharmacy at low cost, adjust the water temperature to get a temperature reading on the oral thermometer, note the temperature, place the stem of the dial thermometer in the glass of water holding the oral thermometer, note the temperature shown on the dial, if necessary adjust the temperature so it reads the same as the oral thermometer, now you're good to go.

Tom Lehmann/The Dough Doctor

312

/ Re: Pizza comes out soggy in the middle...

When you open the door of a home oven and place a pizza in the oven, don't kid

yourself, the oven takes a BIG hit and the burner is not designed for rapid recovery, instead, it's designed to be economical and have a 20 Energy Star rating. Commercial ovens can have a burner with a greater BTU capacity than most home furnaces and they are designed so as not to lose very much air/temperature when opening the door, plus they have a lot more thermal mass than a few bricks. I'm betting that your pizza will take close to twice as long to bake in your home oven.

Tom Lehmann/the Dough Doctor

313

/ [Re: Dough not rising and too white](#)

Get the specifications for the diastatic malt that is available to you and let us see it, we can then direct you on its use. Typically, you will be looking for a 20 degree Lintner Value dry malt powder, if you can get it it will be used at 0.25% of the flour weight. The only change to the dough formula will be to adjust the sugar content to 2%. The dry malt is just added right on top of the flour with no special handling.

Tom Lehmann/The Dough Doctor

314

/ [Re: Margarita pizza](#)

If you are using the cheese from refrigerated storage (required by law as it is a food safety issue) the season of the year will not make a difference. Another trick to help control color development on the cheese is to mist the top of the pizza with water. Having an air impingement oven and with the issues you are having with the vegetable pizzas and your cheese getting excessive color I'm also guessing that the top fingers are not correctly profiled for YOUR pizzas. What is the baking time and baking temperature you are using and what is your baking platform (pan, screen, disk and what color is it)?

Tom Lehmann/The Dough Doctor

315

/ [Re: Vegetarian pizza](#)

If you saute the vegetables you will not have any of the problems you mentioned. Also, be sure to LIGHTLY brush the skin with a little oil before dressing it, this will help to retard the migration of moisture into the crust as it is being baked. This is an application where air impingement ovens really shine as they are very effective at removing moisture from the top of the pizza if the top fingers are properly configured. If you have a deck oven you can also bake at a lower temperature (450F/232C) to help dry off the top of the pizza.

Tom Lehmann/The Dough Doctor

316

/ [Re: Measuring scale](#)

My preference is for the AND /A&D Weighing scales, <www.andweighing.com>

Their scales are about bullet proof, accurate and best of all they operate on common flashlight batteries.

Tom Lehmann/The Dough Doctor

317

[/ Re: Pizza comes out soggy in the middle...](#)

Your oven temperature is very low for baking pizza, 350 to 375 is better suited for baking cakes. Added to that, if the oven is not FULLY up to temperature it would really be difficult to get a decent bake on a pizza as the act of putting a pizza in the oven as well as baking will further drop the temperature creating a double "whammy" for you. My advice is to adjust the oven temperature up to 500F, allow at least 90-minutes for the oven to fully heat and stabilize in temperature and then bake, I think this will give you a much better bake if you are using a dark colored pan as an added plus, you won't need to wait so long for your pizza to come out of the oven so you'll be eating pizza sooner. ;D

Tom Lehmann/The Dough Doctor

318

[/ Re: Dough not rising and too white](#)

Raj;

Your dough formula shows "yeast cake" at 0.5%, not 1 to 1.5%.

Also, the flour bag does not indicate any malting or use of enzymes, hence it is an unmalted flour. The only thing it has is some added enrichment.

Tom Lehmann/The Dough Doctor

319

[/ Re: Perforated peel for large NY style pies?](#)

When you say "larger" I don't know how large you mean but I've made pizzas up to 20" in diameter on my wood peels, that was also the largest diameter wood peel we had at the time, if we had a larger one I'd have used it too.

Tom Lehmann/The Dough Doctor

320

[/ Re: Perforated peel for large NY style pies?](#)

It seems to be a love/hate relationship, some people love them, others hate them. My own personal preference is for a good wood peel.

Tom Lehmann/The Dough Doctor

321

[/ Re: Dough balls drying out on wooden boxes](#)

Gene has a good idea there, try covering the box with a damp towel and then cover with the plastic wrap, I don't like the idea of spraying water in the box. Water +

flour = GLUE (wallpaper paste).
Tom Lehmann/The Dough Doctor

322

/ [**Re: Focaccia rising in pan**](#)

I always let it rise in the pan before baking. What do you mean by "others will TIP the focaccia"? Did you mean "top"? I always allow the dough to rise in the pan before topping as this prevents any possibility of moisture migration into the dough during the proofing period.
Tom Lehmann/The Dough Doctor

323

/ [**Re: Dough not rising and too white**](#)

If your flour weight is 12.5Kg/12500 here is what your ingredient weight should be for the percentages you cited.
Flour: 100%
Sugar: 500-grams
Salt: 187.5-grams
Oil: 125-grams
Yeast cake/compressed yeast: 62.5-grams
Water: 7000-grams

Please note that all of these do not align with your numbers based on 12500-grams of flour weight.
Tom Lehmann/The Dough Doctor

324

/ [**Re: Dough balls drying out on wooden boxes**](#)

It appears that the dough box might be too big for the size and count of the dough balls that you are using.
Tom Lehmann/The Dough Doctor

325

/ [**Re: Transferring From peel to the stone has been my biggest problem**](#)

Just for the record, I'm not a big fan of composite peels, they tend to be overly heavy for their size and the dough tends to stick to them. I'll take a good wood peel every time.
Tom Lehmann/The Dough Doctor

326

/ [**Re: Canotto style**](#)

High dough absorption, well fermented dough baked at 850F+ and hand formed.

[/ Re: Neapolitan dough in a spiral mixer](#)

Using your spiral mixer I really think you can just add all of the ingredients to the mixer at the same time (including the poolish) and begin mixing, this will result in better mixing action which will result in a shorter mixing time. Use cold water (at least 60F) and shoot for a finished dough temperature of 75 to 80F. Regarding the 15-minute cross-stack time, this is not nearly enough time to accomplish anything, instead allow the dough balls to remain cross stacked until the internal dough ball temperature reaches 50 or 55F (pick one), then down-stack and kiss the dough good night. Note: Be sure to lightly oil the top of the dough balls to prevent excessive drying of the dough during the cross-stack period.

Tom Lehmann/The Dough Doctor

[/ Re: Transferring From peel to the stone has been my biggest problem](#)

I don't know how much you are referring to when you say that your dough "shrinks back" when peeling the dough into the oven but there are two things than can be done, one is to ensure the dough has been properly fermented (insufficiently fermented dough has a greater tendency to exhibit memory characteristics) and to open the dough up to a slightly larger diameter that what you are targeting with the knowledge that the dough will shrink back to the target diameter as you peel it into the oven. Additionally, during the baking process you can expect the pizza to contract by something between 1/4 and 1/2-inch in diameter.

Other things which can/will impact the way the dough handles on the peel:

Dough temperature (warm dough tends to be more problematic)

How thin the skin is (very thin skins are more problematic)

Amount and viscosity of the sauce used. (heavy sauce application and thin sauce viscosity tend to be more problematic)

Length of time needed to assemble/dress the pizza/skin. The longer it takes the greater the propensity for the dough to stick)

Type of peel being used. (In my experience wood peels are easier to use and more forgiving)

Failure to shake the skin on the peel during and after building the pizza can result in the dough sticking to the peel.

Just some ideas for consideration.

Tom Lehmann/The Dough Doctor

[/ Deep-Dish Pizza Pans](#)

We just returned from vacation in Park Rapids, Minnesota and while we were there we visited Linda's Recycled Goods, 807 West 1st. Street, Park Rapids MN. 56470/ Tel: 218-252-3949/ Cell: 218-252-5005/ Linda and Richard Anderson (owners). In their back room they have a lot of different size deep-dish pizza pans. I bought a dozen individual size deep dish pans for just \$2.00 each. The pans range in

condition from very good to like new. If any of our members in Minnesota are located close to Park Rapids and you are interested in getting some (what appear to be Pizza Hut) individual size deep-dish pans, this is a good opportunity pick some up and look at other pans which they also have.

Tom Lehmann/The Dough Doctor

330

/ Re: Neapolitan dough in a spiral mixer

92F is much too hot for your dough. What was the temperature of the water that you were using to make the dough with? Also, please tell us about the formulation, age and amount of poolish you used.

Tom Lehmann/The Dough Doctor

331

/ Re: low or high hydration whats the advantage of both ?

Since N.Y style pizzas are typically baked at a lower temperature than NP style pizzas you could bake the NP pizzas first and then bake the N.Y. style pizzas in the cooler oven.

As for the water question, Soft water is not preferred for making dough and R.O water is even less preferred. This is because of the beneficial effects of the minerals in hard water on the dough and fermentation. If you do a search through the archives you will find quite a bit of discussion on hard v/s soft water in making dough.

You also mention multi-grain and whole-grain doughs, again, we had some excellent discussion on that topic not too long ago where I gave the procedure for finding the correct dough absorption and dough making process for there sometimes difficult to make doughs. Done correctly they will make great pizzas but done incorrectly whole-grain and multi-grain pizzas are many time described with words like cardboard, leaves and twigs, etc.

If you are planning to use your wine room as opposed to a refrigerator for cold fermentation you will need to reduce the yeast amount and you may not get the same flavor profile in the finished crusts as you would at the lower temperatures.

Tom Lehmann/The Dough Doctor

332

/ Re: how much old dough in % for 1 kg flour new dough batch ?

The amount of "old" dough that can be added is highly variable depending upon the formulation and age of the old dough so the amount added will be application specific. When we studied this many years ago we found that, for the most part, we could add 15% (based on the total fresh dough weight) old dough without significantly impacting the performance of the new dough, so in your case the amount added will be something greater than 15%. I would suggest starting with 20% old dough addition and going up in 10% increments (30%, 40%, 50%, etc.) from there. Because the amount of old dough is being calculated on a "true %" basis (based on total dough weight as opposed to bakers percent) no other dough changes are generally needed. The end result is similar to that of using a biga or a

"sponge" in making a dough.
Tom Lehmann/The Dough Doctor

333

[/ Re: Please help me troubleshoot my Neo pizzas from tonight](#)

Not knowing anything about the strength of your sourdough starter, I'd start at 5% and go up in 5% increments. For a "true" sourdough no yeast is used, plus typically a sourdough doesn't play well at refrigerated temperatures so you might want to think about 12 or 24-hours at room temperature for starters.

Tom Lehmann/The Dough Doctor

334

[/ Re: Dough recipe using Caputo Americana flour](#)

If using compressed yeast use 1%.

No change in water temperature is needed.

When I'm making N.Y. style pizza at home I like to use All Trumps Flour (14+% protein content).

Tom Lehmann/The Dough Doctor

335

[/ Re: A real noob question: sticky dough](#)

Use a little flour or oil on your hands to remove the dough from the bowl, then use a plastic bowl scraper to scrape the dough up for the folding process, after a few folds it will become noticeably easier to manage, don't be afraid to use a little dusting flour too to help get things started. Remember, you're making dough, not rocket fuel or nitro glycerin ;D

Tom Lehmann/The Dough Doctor

336

[/ Re: low or high hydration whats the advantage of both ?](#)

Different types of pizzas have different identifying characteristics and water/dough absorption is a tool that we use to achieve some of those characteristics. Higher absorption = a softer, more fluid dough that will exhibit more oven spring during the baking process while lower absorption will tend to inhibit oven spring. I'm not sure if all of this is covered in the function of ingredients that we have here but do take a look. We're always happy to expand on any questions which you might have.

Tom Lehmann/The Dough Doctor

337

[/ Re: iced water for flour with ascorbic acid](#)

Yeast is NOT an oxygen scavenger, it produces carbon dioxide during fermentation which will displace a small portion of the oxygen/air in the dough. In an anaerobic

environment ascorbic acid is indeed a dough reducer but to get the reducing effect you need to mix the dough under a vacuum using a Tweedy mixer. Forget what you read as it does not apply here. Just go ahead and make your dough as you normally do.

Tom Lehmann/The Dough Doctor

338

[/ Re: Please help me troubleshoot my Neo pizzas from tonight](#)

What was the flour weight in your dough formula, need it to determine the IDY percentage.

Tom Lehmann/The Dough Doctor

339

[/ Re: Why does my skin look like this?](#)

Agreed. I do see at the 2 o'clock position, slightly in from the edge an area of dough collapse resulting from insufficient bake time.

Next time try par-baking the crusts with 1/2 of the sauce on them and you will get a better finished crust.

Tom Lehmann/The Dough Doctor

340

[/ Re: Want to try a new flour](#)

What you are looking at is a pasta flour made from a variety of durum wheat, not the best choice for making pizza. The gluten that is formed from durum flour is vastly different (it has little extensibility) from that of wheat flour.

Tom Lehmann/The Dough Doctor

341

[/ Re: Fried pizza dough](#)

His two favorite words: You're fired!!! I didn't include the common adjectives he included with the phrase for obvious reasons.

Sorry Donald, he beat you to the phrase. :-D

Tom Lehmann/The Dough Doctor

342

[/ Re: What flour should I try next? Looking for a certain taste](#)

Yep, 3-hours RT fermentation is just OK for bread but it sure doesn't cut it for pizza. Reduce the IDY to 0.4% and CF for at least 48-hours. I've posted my Dough Management Procedure here a number of times if you need a procedure to start with (a quick trip through the archives will bring it up). I would do this with my regular flour first, and then begin introducing other flours in 10% replacement increments up to 30%. This will allow you to assess the many different options

across their typical use level and hopefully find something that you like while having fun experimenting at the same time. Just remember to keep good records (times and temperatures are important to record in your notes).

Tom Lehmann/The Dough Doctor

343

[/ Re: Can anyone help me figure out this issue](#)

Do the crusts look normal immediately when coming out of the oven? If so the issue is due to collapse resulting from insufficient bake.

Tom Lehmann/The Dough Doctor

344

[/ Re: Fried pizza dough](#)

I was working for him at one time, once was enough!!!

Tom Lehmann/The Dough Doctor

345

[/ Re: Looking to make frozen dough](#)

One other thing, vacuum packaging is NOT recommended for dough or finished product due to the potential for clostridium. MAP is what everyone uses.

Tom Lehmann/The Dough Doctor

346

[/ Re: Looking to make frozen dough](#)

No, a yeast spike is added AFTER the poolish, the idea is to have some yeast in the dough that has not been allowed to ferment (it will have a better survival than yeast that has been allowed to ferment). Even the best frozen dough manufacturers only get 21 to 23-weeks of frozen shelf life from their dough. To get that kind of shelf life you will need to blast freeze the dough at -30 to -37F with 600 to 800-linear feet of airflow over the product, or you will need to use a cryogenic freezer (liquid nitrogen or carbon dioxide) with pressure adjusted to give a temperature in the product zone of -50 to -65F, then package and immediately place into a holding freezer at -15F to finish freezing. After 2-hours in the holding freezer the internal dough ball/puck temperature is measured, if it is -15F the time in the cryogenic freezer is correct, if the temperature is higher than -15F the time in the cryogenic freezer will need to be extended and if the temperature is lower than -15F the time in the cryogenic freezer will need to be reduced (as a matter of economics). Date loggers are placed with shipments of frozen dough to monitor dough temperature (temperature abuse is a major cause of dough failure) during distribution.

Tom Lehmann/The Dough Doctor

347

[/ Re: What flour should I try next? Looking for a certain taste](#)

The question that begs to be asked is, what does your "tasteless" crust dough formula look like?

Tom Lehmann/The Dough Doctor

348

[/ Re: Fried pizza dough](#)

Don't forget that the Celeste brand frozen pizza is made using a fried crust, it was the topic of a huge and long running legal law suit between Pillsbury and Jeni Schwaninger which finally ended in 1985 when Jeni sold out to Pillsbury. At one time it was estimated that legal expenses were about 10-million dollars a year for that suit and anyone even thinking of frying a piece of dough was targeted in the suit too.

Tom Lehmann/The Dough Doctor

349

[/ Re: Marsal vs. Blodgett vs. Bakers Pride Gas Ovens](#)

I like all three, but my preference is for the Marsal oven, thicker decking and lots of BTU's make for great ability to continually load and unload pizzas without any difference in bake. Just don't buy into the story line about not needing to rotate the pizzas in the oven, I've never found that to be true for any deck oven with a door! NOTE: Their gas decks come with an internal gas regulator already installed, DO NOT install another gas regulator.

Tom Lehmann/The Dough Doctor

350

[/ Re: Chicago Thin \(Cracker?\) Crust Pizza/ Bar Pizza](#)

There are thin crispy pizzas and there are cracker type pizzas. What you appear to be looking for is a thin crispy type aka Chicago style thin crust pizza. You really don't need to go very far back into the archives here to find discussion and some very good pictures of this type of pizza.

Tom Lehmann/The Dough Doctor

351

[/ Re: Consistency, hydration and oven temp](#)

Boy! It would sure be nice to be able to see your dough formulation as well as your dough management procedure on this one, inconsistency with the dough is really hard to nail down without knowing exactly what you are doing. Remember, T.M.I. is not an issue so be sure to include all times and temperatures when outlining your dough management procedure.

Tom Lehmann/The Dough Doctor

352

[/ Re: Pizzeria Needing Wisdom!](#)

An Edge oven would be a very good place to begin looking at an oven to bake your heavily laden pizzas. Air impingement ovens are, by far, the best suited ovens to bake that kind of pizza. Your dough formula looks to be pretty typical so I see no issues there. You can get any kind of bake you want from an air impingement oven BUT the oven MUST have the finger profile properly configured for YOUR specific product. Edge has always been good at working with their customers to make sure the oven they are buying is properly profiled so work with them, to get the bake you want. Additionally, there are a host of different baking platforms for use in air impingement ovens so if you don't get the bake you want on one platform be sure to try some of the others. NOTE: In case you're wondering, a "baking platform" is a screen, pan or disk used to carry the pizza through the oven. Just make sure whatever you use is either seasoned to a dark color or has a black/dark gray anodized finish.

In the event that you are not satisfied with the air impingement oven there are always conveyor deck ovens to be considered, they are significantly more expensive, but they are a viable option.

Tom Lehmann/The Dough Doctor

353

/ Re: Looking to make frozen dough

If you can live with a maximum frozen shelf life of 15-days what you are proposing doing is totally feasible (assuming you are going to be freezing the dough in a static freezer). Why only 15-days? It has been well documented that yeast which has been subjected to any amount of fermentation does not fare well when frozen in any kind of freezer, much less a static freezer (-10 to 0F with little to no airflow), this results in the potential for significant yeast damage as a result of being frozen which, in turn, leads to dough failure. We do know that the dough will perform reasonably well out to about 15-days but after that it's a crap shoot as to whether it will perform to customer's expectations or not and when we are selling dough you have to remember that FAILURE IS NOT AN OPTION. I would recommend using a yeast spike in the dough (addition of 0.2% IDY when making the dough) then mix the dough as cold as possible (under 70F if at all possible) then immediately go to scaling and balling. Allow the dough balls to rest for 5-minutes then flatten into "pucks" about 1 to 1.5-inches thick, lightly oil, place on aluminum sheet pans that have been stored in the cooler, place the dough pucks on the sheet pans and immediately take to the freezer, freeze uncovered for at least 3-hours, then while in the freezer, package the dough pucks in plastic bread type bags (1.5-mil. thickness) being sure to pull the bag snug to the dough puck, twist the open end into a pony tail and apply a twist tie close to the dough puck, place the pony tail under the puck as you package the dough for sale. Note: This is all done in the freezer to prevent condensation from forming on the dough.

Tom Lehmann/The Dough Doctor

354

/ Re: Cracker style dough

Well...it all depends upon what you mean by "better". You can add non-deodorized lard for a different flavor, and I like to use bacon "drippings" for a different flavor too. A lot of people like to use Butter Flavored Crisco or Blue Bonnet Margarine

(Chicago) but that's still a butter flavor.
Tom Lehmann/The Dough Doctor

355

[/ Re: Where did the crust go? Air bubble...](#)

Two things I'd do, increase the dough absorption to at least 68% (possibly more) and decrease the individual dough ball weight to achieve a dough loading of 0.079646-ounces per square inch of surface area for the skin size you are opening the dough to. If you want to continue using the same dough absorption and dough weight you will need to drop the baking temperature to 500F.

Tom Lehmann/The Dough Doctor

356

[/ Re: Cracker style dough](#)

Generally, an AP flour works well in this application. (10.5 to 11.2% protein content)

Tom Lehmann/The Dough Doctor

357

[/ Re: Where did the crust go? Air bubble...](#)

What I'm seeing is a dense crumb structure with the top crust lifted away from the crumb portion. Do the actual slices reflect that observation?

Tom Lehmann/The Dough Doctor

358

[/ Re: Where did the crust go? Air bubble...](#)

Are you saying the dough was "cold fermented" at 61F?

Tom Lehmann/The Dough Doctor

359

[/ Re: Where did the crust go? Air bubble...](#)

It appears that the crust might have been baked at too high of a temperature for the weight of the skin but to cover more bases, please tell us about your dough management procedure (everything you do with/to the dough from the time its mixed until you open the dough into a skin and dress it for baking).

Tom Lehmann/The Dough Doctor

360

[/ Re: Dough recipe using Caputo Americana flour](#)

You would want to use 0.5% ADY to replace the 0.375% IDY. Don't forget to suspend the ADY in a small portion of the dough water adjusted to 95-100F and allow it to activate for 10-minutes before adding it to the dough water in the mixing bowl. If using the commercial dough boxes: scale, ball, place dough balls into dough box, lightly oil the top of each dough ball, place in cooler (UNCOVERED) until the internal dough ball temperature reaches 50F, then lid the box. Note: The dough must be scaled, balled boxed and in the cooler within 20-minutes of removing the dough from the mixer. The dough should be cold fermented for a minimum of 24 hours (48-hours is better). To use the dough, remove from the cooler (leave the box lidded) and allow the dough to temper AT (NOT TO) room temperature until the internal dough ball temperature reaches 50F, the dough is then ready to begin opening into skins for immediate use. The dough balls will remain good to use for up to 2,5 to 3-hours, just remember to KEEP THE BOX LIDDED after removing a dough ball.

Tom Lehmann/The Dough Doctor

361

/ Re: frozen pizza crust

What the picture shows is a thin crust skin which was formed on a sheet and die cut production line. Typically the dough has a moderate dough absorption of about 56%, it is NOT fermented, but instead used a reducing agent such as dead yeast (RS-190) or L-cysteine (PZ-44) to achieve the necessary extensibility for efficient processing. After mixing to a smooth, cohesive dough consistency (75F) the dough is taken to the automated sheeting line where it is deposited onto the production line and then reduced to approximately 3/16-inch in thickness by means of a series of reduction rolls or more likely than not, a cross roller, a single reduction roll and then a satellite multi-roller reduction roll followed by a single gauge roll then a docking roller and a die cutter. After that it's off to a blast freezer where it is frozen to +15F in about 20-minutes, then it exits into a temperature and humidity controlled room for packaging, bulk packing, palleting pallet wrapping and into a holding freezer (-10 to -15F) for 18 to 24-hours prior to shipping to a distributor. Wanna make it at home?

Flour: 100% (12 to 12.8% protein content)

Salt: 2%

Sugar: 2%

IDY: 0.6%

Oil: 2%

PZ-44: 2%

Water: 56% (variable)

Procedure:

Mix to a smooth, cohesive dough consistency.

Scale

Ball

Allow to rest at room temperature for 10-minutes.

Roll out to 3/16-inch in thickness.

Dock the dough.

Place the dough on a 12" diameter pizza screen and trim off excess dough.

Leave the dough on the screen and place in a freezer for 1-hour.

Transfer the frozen skin to a pizza circle and wrap for frozen storage (will keep for

up to 15-days).
Tom Lehmann/The Dough Doctor

362

/ Re: Gas fired brick oven dough recipe question

As a general rule, make no other changes, just reduce or eliminate the sugar, if you still want/need more bake time after that reduce the oven temperature slightly (15 to 25F). This will allow more time for the top of the pizza to finish baking while reducing bottom bake color.

Tom Lehmann/The Dough Doctor

363

/ Re: Forgot to oil my dough balls - question

I agree ^^^

A thin crust is one thing and usually not much of an issue but my reference was for a thick, scaly crust (bad enough that you might be able to strike a match on) and usually only occurs when the dough was not covered for an extended period of time. I suppose if one was at high altitude or in a dry desert environment you could achieve the type of crust I was referring to in less time? But I too would question only 2-hours.

Tom Lehmann/The Dough Doctor

364

/ Re: gluten development. small batch vs large batch

In most all pizzerias the dough is just mixed until it's smooth, the dough is then scaled, balled and placed into dough boxes for cold fermentation. Cross-stacked about 2-hours (50 to 55F) internal dough ball temperature, then down-stacked and kissed good night. On the following day the dough is removed from the cooler and allowed to warm to 50F (internal dough ball temperature) before opening into skins. The dough is good to use for about a 3-hour period by this method.

No other handling of the dough is required. There is a huge difference between a K5A and a 60 or 80-quart commercial planetary mixer.

If you go to my web site <doughdoctor.com> you will be able to watch my dough making video to see how a pizzeria makes their dough.

Tom Lehmann/The Dough Doctor

365

/ Re: Forgot to oil my dough balls - question

Dry, crusted dough is insoluble in the dough. You will most likely be reminded of it again when you go to open the dough balls into skins. How bad it will be remains to be seen.

Tom Lehmann/The Dough Doctor

366

/ Re: Dough recipe using Caputo Americana flour

Here is my N.Y. Dough formulation.

Flour: 100%

Salt: 1.75%

Oil: 2%

IDY: 0.375%

Water: 63% (variable) / (60F)

Targeted finished dough temperature: 75 to 80F

Mix Just until the dough becomes smooth.

Scale and ball.

Lightly oil dough ball.

Place in plastic bread type bag, twist open end into a pony tail and tuck under the dough ball as you place it in the fridge.

Cold ferment 24 to 48-hours (48-is better).

Remove from fridge and allow dough ball to warm to 55F internal temperature, then turn out of the bag onto a flour dusted surface.

Open into a pizza skin by your preferred method.

Dress and bake on a stone or steel.

Tom Lehmann/The Dough Doctor

367

/ Re: Extra fancy durum flour add diastatic malt?

There should be no need to add any additional malt just for the durum semolina flour as "hopefully" you are not planning to use it at 100%. Ideally, it should not be used at more than 25% of the total flour (3-parts regular flour + 1- part durum semolina flour). That is unless you want the finished crust to go in direct competition with the likes of Good Year, Firestone, Uniroyal, Cooper and a host of other tire manufacturers.....it'll be that tough and chewy soon after baking.

Tom Lehmann/The Dough Doctor

368

/ Re: Opening up a pizza shop.

Be sure to avail yourself of the services and guidance available from the Think Tank at <www.pmq.com>, the TT is visited mostly by operators.

Tom Lehmann/The Dough Doctor

369

/ Re: Predough and timing questions

A different/unique flavor that can only be achieved through the use of a sourdough starter that has been properly managed, which is a whole 'nother story.

Tom Lehmann/The Dough Doctor

370

/ Re: How to know if flour is malted? This one?

Enzymes are used at very low levels but the flour still functions as a malted flour.
Tom Lehmann/The Dough Doctor

371

/ Re: Growing Your Own Tomatoes

Ricko;

The answer is ABSOLUTELY,POSITIVELY YES! That is unless you have a favorite beneficiary on your life insurance policy that you would like to toss a few bucks their way. Clostridium is nothing to mess with, it's DEADLY, and it doesn't take much to accomplish the evil deed.

Tom Lehmann/The Dough Doctor

372

/ Re: Just got my caputo blue pizzeria flour, need help with fool proof recipe ooni

As a "newbie" Which I assume you are, I would encourage you to begin your pizza making endeavors using a more traditional flour for your first pizza making excursions. Something like Pillsbury Bread/Bread Maker Flour or KABF would be a good starting point, these flours are quite forgiving and will allow you to better develop your skills while building your confidence, then in a short time you can transition to your Caputo flour.

Just a suggestion.

Tom Lehmann/The Dough Doctor

373

/ Re: Does the dough shape impact how fast the dough rises?

A lot will depend upon the environment in which you are proofing the dough and for how long. When you open the dough into relatively flat circle you significantly reduce the cross section dimension while at the same time increasing the surface area, both of which will allow the dough to be more responsive to (influenced by) the temperature in which it is placed so if the dough is 85F as a ball and the room is 70F the ball will retain its temperature much better than the opened dough which will quickly cool to the 70F room temperature and since temperature is the number one driver of fermentation the lower temperature will result in a slower rate of fermentation. If several hours are involved there is also heat of metabolism that has to be considered too. As the dough ferments it will warm due to heat of metabolism from the yeast feeding. This will warm the dough at the rate of approximately 1F per hour. The flattened dough piece will also experience this same heating BUT due to the reduced cross section and greater surface area it is much less able to retain this heat so its impact upon the rate of fermentation is significantly lessened.

Tom Lehmann/The Dough Doctor

374

/ Re: Not "breaking" the fermentation bubbles ?

If you are re-balling the dough just 1.5-hours prior to opening the dough into a skin I'm betting that you are also experiencing issues with opening the dough too? You should find that the dough opens easiest when you just remove it from the fermentation container and drop it into some dusting flour and immediately proceed to begin opening the dough.

By the way, after removing the dough ball from the fridge you only need to allow it to warm AT (not to) room temperature until the internal dough ball temperature reaches the 50 to 60F/9.9 to 15.5C range. Depending upon your proficiency at opening the dough you may find it easier to open the dough at the cooler side of the temperature range.

Tom Lehmann/The Dough Doctor

375

/ Re: Best height for dough trays?

There can be, but any issues are essentially eliminated by lightly oiling the top of each dough ball as it is placed into the box and effectively cross-stacking (leaving uncovered) until the internal dough ball temperature reaches 50F before down-stacking/lidding the box(es).

Tom Lehmann/The Dough Doctor

376

/ Re: Can you use a pan to bake a NY style in Blackstone?

Some of the Lloyd's disks are not intended for use in any type of deck oven. Only those that are fully perforated across their entire diameter will work in a deck oven without warping. The others are intended for use in air impingement ovens.

When going to the 16" diameter pizzas you might try reducing the dough absorption in 2% increments until you find that you can easily work with the dough without it sticking, then, as you gain confidence and proficiency begin gradually increasing the dough absorption. Remember, that dough absorption is ALWAYS going to be somewhat of a variable since it is tied to the absorption properties of the flour which is variable/not consistent.

Tom Lehmann/The Dough Doctor

377

/ Re: Newbie help with crust 'doneness' in a brick oven

Another thing to consider is the dough weight (assuming no sugar in the dough formulation). If the skin is too thin/light weight for the diameter you will have a harder time getting to bottom to bake properly than if you have a slightly greater dough weight. The next time you make pizzas make a couple of dough balls 1-ounce heavier and a couple 2-ounces heavier (open them all to the same diameter) bake the pizzas to desired bottom color.

Tom Lehmann/The Dough Doctor

378

/ Re: How do you get a crust like this?

It ain't necessarily what you've got that counts, it's what you do with it that matters most, so you have the dough formula, as well as the flour down pat, the question now is how are you managing the dough (that's where the "rubber meets the road"). You can use the same dough formula but manage it differently and get different finished product characteristics. Please be specific as TMI is seldom an issue here just so long as it's pertinent to the topic. ;D

Tom Lehmann/The Dough Doctor

379

/ Re: Bottom of dough

You might also try leaving the cover off of the container until the dough reaches 50F, then covering. This will allow the dough to be more tolerant to variations in finished dough temperature as well as slight differences in refrigeration temperature thus diminishing the likely hood developing an over fermented dough condition. This approach has been discussed any number of times here where it is referred to as "cross-stacking and down-stacking".

Tom Lehmann/The Dough Doctor

380

/ Re: Best height for dough trays?

Forgot to add one more thing, how tight or loose you're rounding the dough balls.

Tom Lehmann/the Dough Doctor

1

/ Re: Just bought some Caputo 00 Americana. Do you guys adjust hydration by flour?

Your Caputo Americana flour, if I remember correctly comes in around the high 12% protein content range and is already malted so you shouldn't have any problems baking at 550F. Every flour will exhibit different dough absorption properties so I would suggest starting out at 60% and adjusting up or down from there if necessary.

Tom Lehmann/The Dough Doctor

2

/ Re: BIGA - Flour and Yeast Amounts

As a rule:

The more flour there is in the biga the softer and more extensible the dough will be, this in turn promotes a larger, more open crumb structure.

As for the amount of yeast used in a biga we found best results when the % of yeast in the biga was the same as used in the dough BUT remember that the the amount of yeast in the biga is based ONLY on the weight of flour in the biga. You then calculate the weight of yeast based on the yeast percent and the TOTAL flour weight then subtract the weight of yeast used in the biga, the remainder is the

weight of yeast that goes into the dough side. If the biga is to be fermented overnight the amount of yeast as compressed yeast or its equivalent in ADY or IDY should not exceed 0.25%, this yeast is not considered as part of the total yeast.
Tom Lehmann/The Dough Doctor

3

/ Re: Temperature of Pizzeria Oven

I haven't priced them recently but typically the Marsal ovens are cheaper than the rest of the lot. Make sure you're comparing equal size ovens.
Tom Lehmann/The Dough Doctor

4

/ Re: Problem with overfermenting

Aside from the finished/mixed dough temperature please tell us all you can about the flour you're using.
Tom Lehmann/The Dough Doctor

5

/ Re: Temperature of Pizzeria Oven

It'll be hard to go wrong with a Marsal gas fired deck oven. Your baking temperature will most likely fall somewhere in the 500 to 550F range. When locating the oven be sure to allow at least 1.5 times the depth of the oven as free space in front of the oven for the oven tender to work in.
Tom Lehmann/The Dough Doctor

6

/ Re: Pizza Dough Storage & Handling Questions

That's the procedure but since then I've added the following:
The dough should remain cross stacked until the INTERNAL dough ball temperature reaches 50F/10C. NOTE: The time required for the dough ball to reach this temperature will change with the size/weight of the dough ball, so each dough ball weight will require a different time. Once you have determined the correct time for each dough ball weight you can then go by the time required to reach 50F/10C and use that for your cross-stack time for that dough ball weight.

After the CF (cold fermentation) period, remove the number of boxes of dough balls that will be required for the first three hours of operation, place the dough boxes AT room temperature (70 to 80F/21 to 26.6C) to allow the dough balls to warm TO 50F/10C INTERNAL DOUGH BALL TEMPERATURE. DO NOT ALLOW DOUGH BALLS TO WARM TO ROOM TEMPERATURE!!

Once the dough balls have warmed to the targeted temperature they are ready to begin opening into skins for immediate use. The dough balls will remain good to use for the next 2.5 to 3-hours. NOTE: If your shop is warmer than 80F/26.6C this time will be reduced and you will need to take this into account when determining

how many dough boxes to remove from the cooler and at what frequency to remove them during the day.

Any dough balls nearing their expiration time at room temperature can be pre-opened, placed onto screens and stored in a wire tree rack in the cooler for use during the next busy rush period. After placing the pre-opened skins into the wire tree rack in the cooler leave the rack uncovered for 30-minutes, then cover with a plastic bag to prevent drying. To use the pre-opened skins, remove from the screen, touch up the size as needed, place onto wood prep-peel for dressing and immediate baking. If baking on screens BE SURE TO TRANSFER THE SKIN FROM THE STORAGE SCREEN TO A SEASONED BAKING SCREEN. DO NOT BAKE ON THE STORAGE SCREEN EVEN IF IT HAS BEEN SEASONED WITHOUT LIFTING IT OFF OF THE SCREEN FIRST AND THEN PLACING IT BACK ONTO THE SCREEN. FAILURE TO DO THIS WILL RESULT IN THE DOUGH BAKING INTO THE SCREEN MAKING REMOVAL FROM THE SCREEN IMPOSSIBLE WITHOUT DESTROYING THE BAKED PIZZA.

Tom Lehmann/The Dough Doctor

7

/ Re: Pizza Dough Storage & Handling Questions

I don't know if Peter has my Dough Management Procedure posted here but if he doesn't PM me with your email address and I'll be glad to send you a copy of it which will lead you through the entire process from mixer to getting ready to open the dough balls.

Tom Lehmann/The Dough Doctor

8

/ Re: on fat : oil, margarine, vegetable shortening, butter

Larger cell structure which promotes greater fat absorption during frying. As a general rule your donuts should weigh about the same after frying as they did before going into the fryer, if they weigh more you most likely are experiencing excessive fat absorption.

Tom Lehmann/The Dough Doctor

9

/ Re: Quantity of yeast in a preferment after calculating total weight of ingredients

To be a little more precise, we've found that in most cases, for a same day preferment, it's best to use the same percent yeast in the preferment as you use in the dough BUT remember that the amount of yeast in the preferment is based only on the amount of flour in the preferment. This amount of yeast is then subtracted from the total amount of yeast (based on the total formula flour). When an overnight preferment is used we found best results using 0.25% yeast (as compressed yeast/CY) or its equivalent in ADY or IDY. In this case the amount of yeast used in the preferment is NOT included in the total yeast amount.

Tom Lehmann/The Dough Doctor

10

/ [Re: Pizza Pockets](#)

I really can't tell much from the poor quality picture as it's all washed out. The fat flakes will be visible in the dough at the end of the mixing process, if they aren't they won't perform in the manner expected. After mixing allow the dough to rest for about 15-minutes, then sheet out to about 3/16-inch in thickness using a rolling pin or pastry pin. then follow directions provided in my original post.

If you want to read up on a similar process study the "Blitz" method for making Danish Pastry or puff pastry, or even pie dough for that matter, they're all very similar.

Tom Lehmann/The Dough Doctor

11

/ [Re: Friction Factor and Final Dough Temperature](#)

What you were missing was the temperature of the bench top. By hand kneading you were exposing a great amount of the dough surface to the bench top which now most likely had a significant impact upon the dough to lower the temperature to something closer to the measured room temperature.

Tom Lehmann/the Dough Doctor

12

/ [Re: New Park Pizza Dough... Flour Used?](#)

All Trumps? The single most popular flour used in NYC. It comes in at 14 to 14.5% protein content.

Tom Lehmann/The Dough Doctor

13

/ [Re: Guaging Fermentation](#)

nhnybo;

Do you cover/lid the fermentation containers when you put them into the fridge? Keep in mind that by putting the dough into the fridge/cooler the yeast doesn't immediately slow down, there is a significant cooling curve before the core of the dough ball reaches a temperature that will inhibit yeast activity. Part of this long curve is due to the heat being generated by the yeast as a result of heat of metabolism which can amount to a temperature rise of 1F per hour, so we're removing both the latent heat in the dough plus the heat being generated by the yeast as it feeds. A tool that we commonly use is to adjust the finished dough temperature. With a higher temperature there will be a longer period where the dough is in the temperature range which will support fermentation and a lower finished dough temperature means that the dough will be in this temperature range for a shorter period of time. For example, if we plan on a 7-day CF period we would target a lower finished dough temperature so there is less up front dough fermentation which means the dough won't be suitably conditioned for use at 24 or maybe even 48-hours but it will be ready to go on the 5th day after mixing and will remain good to use through the 7th day. Conversely, if we target a higher finished dough temperature the dough can be easily made to be ready to use after 24-hours

CF and still provide decent results out to 48 and possibly 72-hours, but it's a pretty sure bet that it won't be in its prime out at 7-days. This highlights one of the main reasons why I don't advocate allowing the dough to ferment prior to CF. The dough becomes less dense with fermentation so it is becoming harder to cool and extract the heat being generated by the yeast. This is what leads to inconsistency in the rate of cooling the dough balls and when this happens the inconsistency will result in inconsistent dough performance or even failure several days down the road. This is also why we highly recommend that the initial cooling of the dough (to 10C) be done with the dough box uncovered, this allows heat to freely escape, prevents condensation from forming inside of the dough box and doesn't create a dead airspace around the dough balls in the box which is just another insulating factor that will inhibit cooling the dough balls at a consistent rate.

As I used to express to my students all the time, the most important factors in making good dough (for any kind of product) are temperature control (without temperature control you cannot have effective dough management) and consistency, whatever you make, if you cannot make it consistently the same all the time, at the end of the day you still don't have anything.

Tom Lehmann/The Dough Doctor

14

[/ Re: on fat : oil, margarine, vegetable shortening, butter](#)

What most people associate with a "yeasty" flavor isn't yeast at all, instead it's the by-products of fermentation that is providing that flavor. Yeast has a flavor that might best be described as somewhat like that of old, wet newspapers, after all, it's a member of the mold family. So, to your question, with IDY or any other type of yeast you will just want to avoid over fermenting the dough. Typical for yeast raised donuts is mix, (75 to 80F) bulk ferment 1-hour, cut into manageable size pieces and form into loaves, allow loaves the ferment for 30-minutes (approx), sheet to 1/2-inch thickness, cut, place on proofing screens, proof at 80 to 85F (90F max.) for about 45-minutes, fry at 365F.

Think of this: a very rich sweet dough will contain over 20% sugar, and about as much fat, the yeast level will be about 4.5% IDY and there is no "yeasty" flavor because the fermentation time is very limited. By the way, the definition of a yeast raised donut dough is a very lean sweet dough.

Tom Lehmann/The Dough Doctor

15

[/ Re: Instant Dough](#)

As Peter and many of the community here know, my first experience with pizza was with the Chef Boyardee pizza mix which is really not much more than a glorified biscuit dough mix. Whatever the case, it worked to get me hooked on pizza for life!
:-D

Tom Lehmann/The Dough Doctor

16

[/ Re: Guaging Fermentation](#)

The whole point of an emergency dough is to produce a dough which is suitable for making "pizza" (and I do mean "pizza" very generically), within a very short time after mixing. The ingredient amounts are changed as is the dough temperature with the specific intent to give a dough that can be formed into skins for making pizza in as short a time as possible. My own personal best is 30-minutes after mixing we were opening the dough balls into skins and dressing them for baking. Some might equate this to "S-O-S" but it still looked like a pizza so that's what we're calling it. ;D

Tom Lehmann/The Dough Doctor

17

/ [Re: on fat : oil, margarine, vegetable shortening, butter](#)

It does need to be pretty well developed but not as much as for making bread. Two hours final proofing time for a yeast raised donut is insane! WWAAYY too long! Try increasing the yeast to get the final proofing time down to about 45-minutes. That will help with the size too and most likely reduce fat absorption at the same time.

Tom Lehmann/The Dough Doctor

18

/ [Re: Instant Dough](#)

Sure, not the best but still "pizza" none the less.

Caputo Americana flour: 100%

IDY: 1%

Oil: 1%

Salt: 2.5%

PZ-44 or RS-190 (dead yeast): 2% (variable)

Inactive dry white sour: 2% (variable)

These will be the ingredients you will want to work with, really not much of a challenge to do it.

Tom Lehmann/The Dough Doctor

19

/ [Re: deep dish pizza](#)

Welcome to the club! :)

To get some background on deep-dish pizzas spend a little time looking at past discussions on deep-dish pizza, it'll provide a good primer for you to begin journey to making some great pizzas. A couple of things that you will want to have to begin with are an inexpensive scale for weighing ingredients, a dark colored deep-dish pan 1 to 1.5-inches deep and 10 to 14-inches in diameter and a metal blade cake decorating spatula for use in removing the pizza from the pan. If you have any questions about your ingredients just let us know, there are plenty of us here to help you.

Tom Lehmann/The Dough Doctor

20

/ Re: on fat : oil, margarine, vegetable shortening, butter

How long are you final proofing the donuts? Can you provide a picture of the proofed donuts just before going into the fryer?

Tom Lehmann/The Dough Doctor

381

/ Re: Best height for dough trays?

Your question is impossible to answer without knowing more about your dough balls. As a rule, we use up to 10-ounces in the 3" depth, 11 to 14-ounces in the 4" depth and anything over 14-ounces in the 6" depth. Keep in mind though that dough balls will rise differently in the box depending upon dough temperature, how well you're managing your dough, yeast level and dough absorption.

Tom Lehmann/The Dough Doctor

382

/ Re: How do you get a crust like this?

Agreed, a N.Y. style dough formula:

Flour: 100% (12.2 to 12.8% protein content/strong bread type flour)

Salt:2%

Sugar: 1%

Oil: 2%

IDY: 0.375%

Water: 65%/variable (65F)

Mix/scale & ball/cross-stack to 50F/down-stack/CF for 48-hours/remove from cooler and allow to warm to 55F internal ball temperature/open into skins by hand/dress/bake at 700F.

This should provide you with a starting point for achieving your goal.

Tom Lehmann/The Dough Doctor

383

/ Re: Cold Fermenting Overproofed Dough?

Remember, there's a learning experience in every mistake.

Tom Lehmann/The Dough Doctor

384

/ Re: Measuring internal temp without Degassing?

It's nothing to worry about.

Tom Lehmann/The Dough Doctor

385

/ Re: Oil or Sugar for more Crust Browning on Top?

Not knowing what your dough formula is I cannot say if adding sugar will impart a sweet taste to the crust, but keep this in mind; you will not get a detectable sweet taste in the finished crust until the sugar (sucrose) level is 4% or more. With that said, the addition of sugar will result in the entire crust developing more color and at a faster rate on both the top and the bottom. The problem you're experiencing is most likely due to the high crown in your grill which does not provide sufficient top heat directly to the pizza as it's baking. An application of oil to the top of the dough not covered by the toppings might help a bit. You might also try brushing it with whole milk too.

Tom Lehmann/The Dough Doctor

386

[/ Re: Bowl of flour used to open dough balls](#)

Mine is a very high priced cake pan with a plastic lid that I got at a very exclusive store called Walmart. I have about 2-cups of my dusting flour in the pan and I so do all of the dough ball dusting in/over the pan (makes less of a mess), when I'm finished I just snap the lid back on the pan and put it away until the next time I need it.

Tom Lehmann/The Dough Doctor

387

[/ Re: Semolina and whole wheat flour in formula](#)

What you propose should work OK, just remember that whole-wheat flour has a higher absorption than your regular white flour (about 70% in most cases) and like semolina flour it is slower to hydrate than white flour. This means that in this case an autolyze/soaker might be of benefit as it will allow time for the whole-wheat and semolina flour to properly hydrate. Just in case you're wondering, the whole-wheat flour is slow to hydrate due to the presence of bran particles in the flour and the semolina flour is slow to hydrate due to its large particle size. Additionally, semolina flour can be made from hard wheat varieties or it can be made from durum wheat varieties, it's important to know what it was made from as if it was made from a durum variety you might want to limit its use to something under 25% of the total flour blend. It will contribute to crispiness but it will also contribute to toughness aka chewiness in the finished crust as it cools.

Tom Lehmann/The Dough Doctor

388

[/ Re: Bowl of flour used to open dough balls](#)

Sure, not a problem saving it. If you were to ask 20 people what they use for a dusting flour you would probably get a minimum of 25 answers :-D there are that many different opinions. Wheat flour, rice flour, corn flour, fine corn meal, semolina flour and wheat bran are all used both alone and in various combinations. My own personal favorites are fine corn meal as well as a blend of equal parts fine corn meal + semolina flour + regular white flour.

Tom Lehmann/The Dough Doctor

389

/ [Re: Advantage of Bulk or not to bulk](#)

If you do a quick search you should find some of the previous discussions we've had here on the topic, there is actually quite a bit to bulk fermenting prior to balling.
Tom Lehmann/The Dough Doctor

390

/ [Re: Had 'no knead' dough in fridge, turned it into focaccia](#)

Looks GREAT!!!! :chef:
I also like to add some shredded Parmesan cheese to it too, but that's just me.
Tom Lehmann/the Dough Doctor

391

/ [Re: Reversing cold fermentation](#)

Depending upon the flour strength, amount of yeast used, proficiency at temperature control I would, with trepidation, say yes for home pizza making only. Try to keep the time the dough is frozen as short as possible. Keep in mind that you may need to be re-balling the dough at some point.
Tom Lehmann/The Dough Doctor

392

/ [Re: Dough balls too flat](#)

A little bit but not all that bad for the flour you're using. I would recommend reducing the total dough absorption to 62%. Remember that dough absorption is ALWAYS variable, especially with "00" flours.
Tom Lehmann/The Dough Doctor

393

/ [Re: VWG percentage and hydration](#)

It's easy to convert from bakers percent to weight measures.
First thing to do is to decide either how much flour you want to use or how much dough you want to make.
If you know how much flour you want to use :
Using your calculator, enter the flour weight then press "X" and enter the ingredient percent that you want to find the weight for, now press "%" and read the answer in the display window. Remember, your ingredient weights will be expressed in the SAME weight measures that the flour weight was expressed in (pounds, ounces, grams, kilograms, etc.).

If you know how much dough you want to make:
First find the sum of all of the bakers percents in your dough formula (it will usually be something between 165 and 175%), now divide this number by 100

(move decimal place two places to the left.

Using your calculator, enter the total dough weight that you want to make then press the division sign and enter the sum divided by 100 and press "=" and read the flour weight needed to make your new dough weight in the display window. Once you have the flour weight follow the above (first) procedure for finding the individual ingredient weights.

Tom Lehmann/The Dough Doctor

394

/ Re: Confusing terminology in using the term "malt"

The amount of diastatic malt FLOUR added to wheat flour is variable depending upon the amylose activity of the flour being malted. Flour in the U.S. is typically malted to a Falling Number of 200 to 250. As a general rule you can get close to this by adding 0.25% of a 20-L diastatic malt powder to an unmalted flour.

Tom Lehmann/The Dough Doctor

395

/ Re: VWG percentage and hydration

Pan Pizza Dough formulation:

Flour: 96%

VWG: 4%

Salt: 2%

Sugar: 2%

Shortening: 4%

IDY: 0.4% or ADY: 0.5% or CY: 1%

Water: 65%/variable (65F)

Mix dough just until it takes on a smooth appearance.

Target finished temperature: 75 to 80F.

Take to bench and scale (8.75-ounces/variable) and ball.

Lightly oil dough balls and CF for 24-hours.

Remove from cooler and allow to temper AT (NOT TO) room temperature for 2-hours.

Use a rolling pin or pastry pin to GENTLY open the dough to fit the pan.

Place the opened dough into a greased or oiled dark colored deep-dish pan.

Allow to proof for approximately 45-minutes (exact time will need to be determined by experimentation)

Dress as desired and bake at 450F.

Thin Crust Pizza Dough:

Flour: 95%

VWG: 5%

IDY: 0.4% or ADY: 0.5% or CY: 1%

Salt: 2%

Sugar: 2% (optional)

Oil: 2%

Water: 65%/variable (65F)

Mix until dough JUST comes smooth.

Target finished dough temp: 75 to 80F.

Take directly to the bench and scale at 2-ounces (for a 9" skin) and form into balls. Lightly oil the dough balls and CF for 48-hours.

After CF remove from cooler and allow to temper AT (NOT TO) room temperature until the internal dough ball temperature reaches 50F.

Open into skins by your preferred method.

Dress and bake.

NOTE: A good way to CF the dough balls is to place each one into an individual plastic bag, twist the open end to form a pony tail and tuck the tail under the dough ball as you place it in the cooler.

Garlic breadsticks can be made using either dough by opening the ball to about 12-mm in thickness, forming into a rectangle shape and cutting into strips about 20-mm wide. Transfer cut strips to a greased baking pan and allow to proof for 30-minutes, then bake at 450F. As soon as breadsticks come out of the oven brush generously with a commercial garlic butter or make your own by combining butter with commercial garlic powder. then sprinkle with grated parmesan cheese and serve.

I'm not exactly what you mean by "stuffed garlic bread" please describe.

Subway Bread/Hoagie Buns:

Flour: 95%

VWG: 5%

Salt: 2%

IDY: 1% or ADY: 1.5% or CY: 3%

Shortening: 6%

Sugar: 4%

Water: 58%/variable (65F)

Mix the dough to a smooth consistency plus an additional 5-minutes (this will be variable depending upon the characteristics of your local flour).

Target finished temp: 80 to 85F.

Take dough directly to the bench, scale into 7-ounce pieces, form into balls, cover with a sheet of plastic and allow to rest for 20-minutes.

Using your hands, roll each dough ball into a hot dog shape (lightly dampen your hands with water if necessary) about 7-inches long.

Place formed dough piece onto a baking paper lined or lightly greased sheet pan with dough pieces spaced 2 to 3-inches apart.

Cover to prevent drying and allow to final proof for 45 to 60-minutes. You will need to experiment to determine the time best suited to your specific conditions.

Using a VERY SHARP SERRATED knife or razor blade cut 3 to 4-diagonal cuts (about 2-mm deep) across the top of each dough piece.

Spray with water and bake at 425F.

Note: If the finished buns are too flat reduce the water, if you want more spread increase the water (absorption).

This type of buns is typically not fermented, Subway uses frozen dough which is not fermented either.

Tom Lehmann/The Dough Doctor

396

[/ Re: Practice Dough](#)

The total formula sum of bakers percent is 168.15 divided by 100 = 1.6815
You want to make two dough balls each weighing 29.5-ounces = 59-ounces +
2-ounces for bowl loss = 61-ounces of dough will be needed.
Divide 61 by 1.6815 = 35.68-ounces of flour needed X 28.4 = 1013.38-grams of
flour.
Ain't math great?! :D
Tom Lehmann/The Dough Doctor

397

[/ Re: Practice Dough](#)

Why not just make a typical N.Y. dough formula such as:
Flour: 100% (Pillsbury Bread/Bread Machine Flour which is widely available at
supermarkets at a very reasonable cost)
Salt: 1.75%
IDY: 0.4%
Sugar: 2% (optional)
Oil: 2%
Water: 62% (65F)
Target finished dough temp: 75 to 80F

Make it as you do your regular dough and cold ferment for a minimum of 24-hours
(48-is better).

Scale into 19.5-ounce dough balls, oil each dough ball, drop into individual plastic
bags (like bread bags), twist the open end into a pony tail and tuck it under the
dough ball as you place it into the fridge to CF.

To use, just roll bag down around the dough ball and invert over a flour dusted
surface or a bowl of flour.

Flour dough ball and open into a skin by your preferred method.

If you don't want to make pizza you can always make a calzone, or brush the skin
with melted butter and then sprinkle generously with a cinnamon-sugar mixture
and bake. After cooling drizzle with a sugar-water icing or cut into strips and dip in
the powdered sugar-water icing (you might recognize these as "Dipin' Sticks"), or
just dock it well and bake at 400F as a flat bread.

Tom Lehmann/The Dough Doctor

398

[/ Re: Confusing terminology in using the term "malt"](#)

amolapizza;

You are not alone in your confusion. All too often we find that to many in the in all
but the wholesale baking industry malt is just malt, some don't even realize that
there is a difference (diastatic v/s nondiastatic) and well as a difference in Lintner
Value. We see this happening here from time to time too. When you toss in dry v/s
liquid confusion reigns supreme. This is why it's always important to identify the

exact type of malt product we're using or referencing in a dough formulation. Remember my story about the New Hampshire bagel producer that mistakenly got the wrong (diastatic) malt product that literally shut down their production lines. Malt is an ingredient that has different applications in different industries which is why there are so many variants and making it important to identify specifically which product is being used or referenced. To the home baker it may not be a "big deal" if the wrong product is used since we are dealing with small amounts of dough but to a large scale producer, beginning with a pizzeria and going up from there it becomes a "very big deal" if the wrong malt product is used.

Tom Lehmann/The Dough Doctor

399

[/ Re: Dough tearing/blistering](#)

The old stand-by is to put the water in first, then the flour and dry ingredients and mix just until you don't see any dry flour in the bowl, add the oil and continue mixing (at a higher speed if possible) just until the dough takes on a smooth appearance. At that point the dough is sufficiently mixed, the dough might feel a little tacky but not sticky. Finished dough temperature should be in the 75 to 80F range when mixing is completed.

Tom Lehmann/The Dough Doctor

400

[/ Re: Trying to get a good crisp... Thoughts?](#)

I think your fermentation of the dough prior to scaling and balling is contributing to the problem. Try this, reduce the IDY by 50%, adjust the water temperature to give you a finished dough temperature of 75 to 80F, then immediately after mixing the dough scale and ball it, place in UN-OILED dough box, lightly oil the top and sides of each dough ball (use canola oil), allow box to remain UNCOVERED for 2.5-hours, then cover/lid the box and allow to CF for 24-hours. Remove dough box from cooler (keep it covered) and allow the dough balls to temper AT (not to) room temperature until the internal dough ball temperature reaches 55F. Then remove dough ball from box and begin opening the balls into skins by your preferred method. The dough balls may deflate a little but not completely and they should open into skins pretty easily, there should be an improvement in oven spring which will promote crispiness in the finished crust.

Tom Lehmann/The Dough Doctor

401

[/ Re: Dough is a little chewy and tough](#)

Oil is a tenderizer so adding 2% might help.

Tom Lehmann/The Dough Doctor

402

[/ Re: Dough tearing/blistering](#)

Please tell us something about your fridge, maybe a picture?

Tom Lehmann/The Dough Doctor

403

[/ Re: Failed Neapolitan dough](#)

For me personally, I'd have gone with 0.05% IDY for what you were doing. It sounds like you are mixing the dough by hand so all you really need to do is to mix it sufficiently to have a cohesive dough and let biochemical gluten development take care of the rest of it for you. One other thing: When mixing the dough by hand it is highly recommended that the IDY be hydrated in a small portion of the dough water (tempered to 95 to 100F), just put the IDY into a small container of water and stir to hydrate the yeast making a uniform yeast suspension, you can then add the IDY suspension directly into the remainder of the dough water in the mixing bowl.

Tom Lehmann/The Dough Doctor

404

[/ Re: Failed Neapolitan dough](#)

Try removing the dough from the plate and re-ball it, then place it in the fridge to relax for several hours, it should be relaxed sufficiently for use by dinner time. Let us know how this works out for you.

Tell us about your oven too.

Tom Lehmann/The Dough Doctor

405

[/ Re: Confusing terminology in using the term "malt"](#)

This is what happens when one tries to cross reference terms from two different disciplines (brewing and baking) as many times the same word or expression has significantly different meanings. For example, the words "Do you have worms?" has an entirely different connotation to a fisherman than it might have to a doctor. :-D In the baking industry the word "malt" has a much more limited meaning and to some extent application, than it has in the brewing industry. In the baking industry barley is the primary source of malt and this is required, by law, to be stated on a bag of "malted wheat flour". In the baking industry malt is used either as nondiastatic (powder or liquid) as a source of sugar (maltose) for flavor and/or crust color development or as diastatic for the amylolytic conversion of a portion of the starch (primarily damaged starch) to sugar (maltose) as a yeast nutrient. Additionally, some research has shown that that a reduction of starch can contribute to a softer crumb structure in the finished product resulting in a potential improvement in perceived freshness of some bakery products.

Tom Lehmann/The Dough Doctor

406

[/ Re: The effect of yeast percentages on taste](#)

Wow! That's a lot of ADY considering that most people probably use not more than 0.5 to 0.75% at the very most. 1 to 1.5% ADY would be more in line with a no-time/emergency dough that would be ready to go in about 2-hours after mixing. But in the end, if it gives you the flavor profile that YOU want, I cannot argue with you.

Tom Lehmann/The Dough Doctor

407

/ Re: Either my dough is bland or my tastebuds are dead. Can I get some criticism?

It's hard to beat fermentation and all of its nifty by-products for flavor. Malt, either to hydrolize a portion of the starch to support long fermentation times or to provide a level of flavor by itself is a big part of the total flavor picture too. Note: This is based on the assumption that one likes the "fermentation" flavor, I know that not everyone does.

Tom Lehmann/The Dough Doctor

408

/ Re: First Attempt Making Pizza with a Natural Sourdough Starter: No Elasticity!

Unless you have a way to actually measure the pH and TTA (titratable acidity) of the sourdough starter you have no idea of what it actually is, that's one of the issues with sourdough starters, you never know for sure exactly what you have so it is not uncommon to have to experiment to determine the amount needed to achieve the desired results.

Tom Lehmann/The Dough Doctor

409

/ Re: Dough Ball Weight

I've literally hand cut thousands of dough balls and I still continue to weigh each one. In our pizza class we used to show our students how to speed up the hand cutting process by forming the dough into a rope and cutting the dough to length, use a scale to establish the length needed for the weight that you want, then begin cutting to length (length = weight). The best that I was EVER ABLE TO MANAGE was 7-consecutive pieces all within 1/4-ounce (that's 7-grams) of each other. Use a scale, it's a lot more accurate and consistent!

Tom Lehmann/The Dough Doctor

410

/ Re: First Attempt Making Pizza with a Natural Sourdough Starter: No Elasticity!

In all probability it was the problem. I'm guessing that it was either too strong for your flour or you used too much. I'd suggest making it again but use only half as much of the SD starter, if the dough performs better you'll know you're on the right track to solving the problem.

Being able to see your dough formula and procedure would also be very helpful too.

Tom Lehmann/The Dough Doctor

411

/ Re: Either my dough is bland or my tastebuds are dead. Can I get some criticism?

That, my friend, would be a very safe assumption :-D. My ability to weld stainless steel, and access to the necessary equipment, along with my understanding of fermentation and access to malt (it was a certified bakery ingredient) made me a very popular person during my time over there. Almost got caught on two different occasions, would not have been a pleasant outcome. I used to say that the best kept secret was what we were making in those brew tanks (we used to call them liquid ferments).

Tom Lehmann/The Dough Doctor

412

/ Re: Either my dough is bland or my tastebuds are dead. Can I get some criticism?

I was working in the Aramco Bakery training the entire bakery staff from production to maintenance and sanitation. I was living at Steinekie Hall (spelling?) Except for the meals that I had at the bakery I used to eat at the Dining Hall (my good friend Hind Leithead) was in charge of Dining Services for Aramco, her husband was Head of Airport Operations. I was the second to the last contractor to leave the country when they nationalized in 1980. Later, I served again as a consultant when the Saudi's built the frozen dough/pizza plant in Riyadh. I was at the Latif Bakery a number of times but I never paid much attention to their breads for the reasons mentioned above. I've still got pictures of me riding motorcycles on the desert and skiing on the sand dunes and a whole bunch of stories!!!

Tom Lehmann/The Dough Doctor

413

/ Re: Long Handled Wooden Launching Peel

They're like rocks at a stone quarry, not terribly difficult to find.
Lots of previous discussion on peels too.

Tom Lehmann/The Dough Doctor

414

/ Re: Long Handled Wooden Launching Peel

Mr. Peel or American Metal Craft are some options.

Tom Lehmann/The Dough Doctor

415

/ Re: How to get cheese to blend into sauce?

My preference is to tear the cheese as opposed to slicing it, this gives a thin edge to the cheese allowing for more of the transition that you mention.

Tom Lehmann/The Dough Doctor

416

[/ Re: Either my dough is bland or my tastebuds are dead. Can I get some criticism?](#)

Hey! I was in Dhahran for 3-years, went to Khobar many times, just a hop, skip and a jump away.

Small world!

Tom Lehmann/The Dough Doctor

417

[/ Re: Either my dough is bland or my tastebuds are dead. Can I get some criticism?](#)

If you are trying to get that "pizzeria" flavor (not sure what that really is) you might try some of the following;

- 1) Reduce the honey to 2% of the total flour weight (325-grams).
- 2) Adjust IDY to 0.374%
- 3) Scale and ball the dough immediately after mixing.
- 4) Targeted finished dough temperature is 75 to 80F.
- 5) Lightly oil the dough balls and place into individual plastic bread type bags (NOT ZipLock Bags), twist the open end to form a pony tail and tuck under the dough ball as you place it into the fridge.
- 6) Cold ferment for 48-hours (this is how many pizzerias manage their dough).
- 7) Remove dough from fridge and allow to warm AT (NOT TO) room temperature until the internal dough ball temperature reaches 50 to 55F, then roll the bag down around the dough ball and invert over a flour dusted part of your work surface.
- 8) Flour both sides of the dough ball and open into a skin for immediate use.

Let us know if this moves you closer.

Also keep in mind that loss of smell is a possible indication of C-19 (smell is a BIG part of the flavor equation) :-D. Unless you have a control/target crust to evaluate against it is indeed possible to lose all ability to distinguish changes in taste or aroma/flavor.

Tom Lehmann/The Dough Doctor

418

[/ Re: First cook in my Ooni Koda 16](#)

65% absorption seems a bit on the low side for a dough made with 25% whole-wheat flour. What did the crumb structure look like? Was the dough slightly sticky or tacky when it was opened into a skin? If it wasn't the absorption was too low.

Tom Lehmann/The Dough Doctor

419

[/ Re: Does thin crust mean crispier crust ?](#)

Finished dough temperature?

Type of dry yeast?

Dough ball weight?

Pizza size?

Tom Lehmann/The Dough Doctor

420

/ [Re: Bromated flour](#)

Because the potassium iodate was found to interfere with some medical tests. The AMA asked the baking industry if it was possible to eliminate the use of iodate for this reason and the baking industry did as requested. Wanna know what replaced potassium iodate?

Answer: ADA/Azodicarbonamide. I was the one who did all of that work.

Tom Lehmann/The Dough Doctor

421

/ [Re: Does thin crust mean crispier crust ?](#)

No, a thinner dough skin or crust does not always relate to a crispier finished crust.

Rather than going through a whole litany of things that can be done to provide for a crispier finished crust it would help if you could share with us your dough formula, dough management procedure and also tell us about your oven and how you are baking your pizzas.

Tom Lehmann/The Dough Doctor

422

/ [Re: Crust dry spots](#)

They are due to either excessive drying of the dough ball (depending upon how the dough balls are stored it can be limited to a small area or a large area of the dough ball) or it might be dusting flour adhering to the dough ball (pretty common).

Tom Lehmann/The Dough Doctor

423

/ [Re: Bromated flour](#)

Actually, California doesn't ban it they just require that any product which contains it be labeled with with the warning that this product contains potassium bromate, a known carcinogen and may cause cancer in some individuals (or something to that effect), yum, yum, I think I'll have another helping! Because of this and the fact that none of the chain stores or food manufacturers want the publicity associated with the use of bromate no one uses it in California and distributors don't carry it for that reason. Now, in Canada it's a different story as its use is officially/legally banned there.

Tom Lehmann/The Dough Doctor

424

/ [Re: Bromated flour](#)

HansB;

I'm putting my money on a meteor over bromate! :-D

Tom Lehmann/The Dough Doctor

Elchimi;

Since there is a readily available effective substitute for it it's really not all that commonly used anymore. It is used in some flours (at a very low level) due to demand for it in some markets. So, why don't the flour millers add the new bromate replacers to the flour? The answer is because none of them that I'm aware of are designed for stand alone addition to flour so for that specific application there is still not a suitable direct replacement.

Tom Lehmann/The Dough Doctor

425

/ [**Re: Bromated flour**](#)

It does serve a functional purpose in flour where long fermentation times are the order of the day. Do I think bromated flour is necessary? No, not in view of the fact that we have some excellent performing enzymatic oxidants that serve as a replacement for it. Do I go out of my way to avoid it? No. Is it really necessary in pizza production? When bromate came under scrutiny many years ago we looked at just how important bromate was in pizza production. We found that as long as one had access to high protein flours capable of forming strong gluten with good fermentation tolerance it was not needed at all so in my humble opinion the use and necessity of bromate in pizza dough is a moot issue, in white pan bread and many variety breads of commercial manufacture it is a totally different story but again we now have some excellent performing bromate substitutes (as previously mentioned) so even in bread production it's a moot issue. it's certainly not like back in the 50's and 60's where bromate was being used at the outrageous levels of up to 75-ppm. One of my technicians once described the flavor of bread when made with bromate levels this high as "tasting like a swimming pool" and he was correct in his assessment. If you are old enough to have ever had continuous mixed bread aka batter whipped bread back as late as the 60's you have been exposed to these high levels of bromate.

Tom Lehmann/The Dough Doctor

426

/ [**Re: Bromated flour**](#)

Actually bromate is converted to bromide (a non-carcinogen) during the baking process and it wasn't until the 1970's that the Japanese developed a method for detecting bromate in PPB (parts per billion), it was then discovered, that in some cases bromate was a residual in some breads but it was only measured in PPB where as previously it could only be measured in PPM (parts per million) so it was then considered unsafe. When you look at the big picture of things that are carcinogens it is safer to eat bread made with bromated flour (not to exceed 15-PPM potassium bromate) than it is to breathe the air in most major cities. And then you have the issue of nitrates, and trans fats and don't forget acrylamides, the list just goes on and on. My personal advice is "Don't be stupid and drink from the bromate bottle, use moderation and enjoy life!"

/ [Re: Diastatic malt vs. non-diastatic](#)

Non-diastatic malt is a non-active (no enzyme activity) form of malt. It is used for both its unique flavor and as a source of sugar for crust color development. Unlike diastatic malt, you can go quite high with non-diastatic levels without creating significant dough handling problems (stickiness). Most bagel manufacturers use non-diastatic malt as they can use it for both flavor and color without developing the stickiness associated with diastatic malt. A number of years ago I had to make an emergency trip to up-state New Hampshire to visit a wholesale bagel manufacturing facility that was having a problem with the dough sticking to their bagel forming belts and nearly shutting down production. First thing I asked was "Are you using diastatic malt?" The answer was, "No, we use non-diastatic malt syrup". They confirmed that the malt syrup was indeed non-diastatic. When I got to the plant late that day I went directly to the ingredient scaling room and sure enough, the label on the 55-gallon drum said "DIASTATIC MALT SYRUP"! So why did they answer "no" to my question? It seems that they checked their formula sheet, not what they were actually using....Oops! Yes, the wrong product was shipped to them by their supplier. I called the supplier and got the non-diastatic malt delivery started while we cleaned up the mess out on the production floor, a short time later we had the NON-DIASTATIC malt syrup and production resumed with no further issues. Lessons learned that day:

- 1) Always check ingredient name and product code number against your order manifest at the time of delivery.
- 2) When someone asks a question about an ingredient being used don't just look at the formula sheet, look to see what is actually being used.
- 3) Bagels are made from a pretty simple and basic formulation, the malt syrup was the only ingredient where a simple mix-up could result in disaster, they should have been aware of that and gone directly to the #1 suspect to begin their own investigation. A little education goes a long ways.
- 4) The lesson that I learned, NEVER ASSUME ANYTHING, that's been well known for a very long time but sometimes we need a reminder.

Tom Lehmann/The Dough Doctor

428

/ [Re: Diastatic malt vs. non-diastatic](#)

Maybe your flour is already malted either through the addition of diastatic malt or enzymes (alpha amylase)? The bag will tell the story if the flour is malted/treated with enzymes or not. Additionally, flours that are high in starch damage do not fare well at all in the presence of any amount of diastatic malt or alpha amylase.

Tom Lehmann/The Dough Doctor

429

/ [Re: Diastatic malt vs. non-diastatic](#)

Let me hear an "AMEN" to that! ^^

Tom Lehmann/The Dough Doctor

430

/ [Re: Scale](#)

Many of us here have the KD-8000 and I've not heard any complaints about it yet, at least none that I can recall. One of the best things about the scale is that it operates on regular flashlight batteries, I've had mine for years now and use it all the time and it's still operating on the original batteries supplied with the scale!

Tom Lehmann/The Dough Doctor

431

/ [Re: Diastatic malt vs. non-diastatic](#)

Like many things, a little diastatic malt can be a good thing if your flour is not already malted but too much of a good thing can really mess things up. A recommended use level for 20L diastatic malt is 0.25% based on the total flour weight....use more only if you dare. If the diastatic malt that you are using has a higher L (Lintner) value like maybe 60L you would use only 1/3 as much. No, flour manufacturers don't post anything about the flour absorption properties. The actual dough absorption used in making pizza doughs will vary with the following:

- 1) Type of pizza being made.
- 2) Dough making process.
- 3) Finished dough temperature.
- 4) Type of dough management employed and fermentation time/temperature.
- 5) Individual's proficiency/skill at opening the dough into a skin.
- 6) The type of oven to be used.

It is impossible for the flour manufacturer to know all of these parameters so any recommendation for dough absorption would be a total guess. If you want a S.W.A.G. here's mine for a starting point only:

Thin crispy & cracker type doughs: 50%

American style pizza doughs: 60%

Wood fired oven doughs: 65%

Neapolitan style doughs: 70+%

Like I said, this is just a S.W.A.G. as the final absorption will depend upon any number of factors including the absorption properties of the flour being used.
Tom Lehmann/The Dough Doctor

432

/ Re: Seeking suggestions on how to approach troubleshooting disappointing results

Since your experimental program calls for assessing the impact of the various processing steps I would suggest that you begin with a a dough formula that you have confidence in for producing a decent pizza, it sounds like you might already have that.

Then begin by making your pizza a number of times to assess its "standard deviation" if you will. You will need to do this several times to reduce the "human" factor in the variables. In essence, you are now producing a CONSISTENT pizza, regardless of quality, it MUST be consistent. If you don't do this you will never know if a change in quality characteristic was due to your normal variability or if it was due to the experimental variable.

With this done you are now ready to actually begin your experimenting. Select the variable that you want to test, let's say baking temperature. Prepare the dough by your standardized formula and procedure with the only experimental variable being the baking temperature (note: you will also need to adjust the baking time with the temperature as the two go hand-in-hand, so you will need to adjust the time to give a bake as close as possible to the control (your standard product).

Make experimental adjustments to baking time and temperature to cover the ENTIRE spectrum for baking the pizza. Compare your experimental results to the control pizza that should be made on every test day. If you cannot make a control pizza on each test day document your control pizza with pictures showing diameter, height, top and bottom color, and crumb structure. Also be sure to document the mastication properties. You would be amazed at how much your perception of the quality characteristics will change over time if this is not done, at least documenting it for the control will provide some kind of a fixed reference point for comparison purposes.

Once you have done your testing on each of the variable it will be time for Stage II, this is where you begin looking at "cross variables" such as higher dough absorption with baking time and temperature as the experimental variables. This is going to be a long but rewarding study for you.

I've spent over 50-years doing it and I'm still learning new things all the time.

Tom Lehmann/The Dough Doctor

433

/ Re: Trying to get a good crisp... Thoughts?

I caught another tid-bit in what you said about the dough being pretty wet when you went to open it into a skin. I'm guessing that you are covering the dough boxes right away as opposed to allowing them to remain open until the internal dough ball temperature drops to 50 to 55F, then you can cover the boxes and kiss them good night. Does this sound familiar?

All of that condensation collecting on the dough ball tells me that the dough did not cool very efficiently which added to the amount of fermentation that the dough actually received, that combined with the water can be enough to result in the dough collapsing.

I don't recommend using a metal scraper of any kind on a plastic dough box, use only a plastic scraper.

Please P.M. me.

Tom Lehmann/The Dough Doctor

434

[**/ Re: Adding cinnamon to dough**](#)

We make our dessert pizza bases by opening a regular skin then brushing it with melted butter and sprinkling well with a cinnamon-sugar mixture, add a streusel topping and bake just as you would any other pizza, allow pizzas to cool about 5-minutes and add a drizzle of powdered sugar-water icing. We add fruit slices and chopped nuts when we want to add the "WOW" factor.

In any case, regardless of how you make it, it makes for a tasty combination.

Tom Lehmann/The Dough Doctor

435

[**/ Re: Which yeast? Making 20 pizzas 20 hours from now**](#)

When you're up to needing 20 pizzas in as many hours this is not really the most opportune time to be experimenting with something that you have not ever used. Save the time for experimenting for those single or 2 or 3 pizza days.

You made the right decision! ^^^

Tom Lehmann/The Dough Doctor

436

[**/ Re: Minimum Temp**](#)

A friend of mine has the TC oven as described in Craig's attachment and I was thoroughly impressed with it! ^^^

Tom Lehmann/The Dough Doctor

437

[**/ Re: Trying to get a good crisp... Thoughts?**](#)

OK, so the dough collapsed when you "pulled" the dough out of the box. You are not lifting it out using a plastic scraper, right?

Then, after you got the dough out of the box, what did you do? Details, details :chef:

Tom Lehmann/The Dough Doctor

438

[/ Re: How long in advance to putting it in the oven can you fully stage a pizza](#)

Staging a sauced pizza too far in advance of baking can/will promote the development of the good old "dreaded gum line". The time will vary with your sauce and if you have oiled the skin or not. If you put a spoon of sauce on a saucer and leave it undisturbed for a period of time you will see syneresis taking place (loss of moisture from the sauce) if you note the time it takes for this to appear this will tell you how long you can hold the sauced skins prior to baking. You can also help to prevent damage to the dough by VERY LIGHTLY oiling the skin before the sauce is applied. This will create a barrier to moisture migration into the dough as the moisture leaves the sauce.

Pre-saucing is generally not a good idea as it does nothing good to the finished pizza so my advice is to keep the time as short as possible.

Tom Lehmann/The Dough Doctor

439

[/ Re: Balling dough](#)

If you are going to degas the dough by mixing it you will need to mix the dough a bit longer to allow it to be balled without tearing.

Tom Lehmann/The Dough Doctor

440

[/ Re: Trying to get a good crisp... Thoughts?](#)

Let's start by reviewing your dough formula and EXACT dough management procedure (be sure to include all times and temperatures), in all probability I'm guessing that's where we'll find the problem at.

Tom Lehmann/The Dough Doctor

441

[/ Re: Differences in store bought dough for digestibility](#)

All bets are "off the table" anytime a commercially made frozen dough has been subjected to thaw and re-freezing as the dough at that point is no longer considered to be commercially frozen (commercially frozen = freezing at -30 to -38F in a mechanical blast freezer with 600 to 800 linear feet of airflow per minute over the product or cryogenically frozen using liquid carbon dioxide or liquid nitrogen at -45 to -55F in the product zone. This establishes a small ice crystal formation in the dough which is less deleterious to the yeast cells and gluten network but when thawed and re-frozen at a higher temperature a much larger and more angular ice crystal is formed which is very deleterious to yeast survival as well as continuity of the gluten network in the dough. In short, commercially frozen dough that has been abused will not perform as well as the same dough that has not been subjected to the abuse.

Tom Lehmann/The Dough Doctor

442

/ [Re: hi gluten flour for nystyle pizza](#)

When I speak of "HIGH" protein content flour I'm referring to a flour with a protein content in the 13 to 14+% range which would be pretty typical for use in making a New York style pizza. For most other styles a protein content of 12 to 12.8% works well (Pillsbury Bread/Bread Machine Flour) which is available at many supermarkets is a good choice. For deep-dish and thick crust pizzas I normally lean towards a flour in the 11.0 to 11.8% protein range.

Tom Lehmann/The Dough Doctor

443

/ [Re: Is This accurate?](#)

The neat thing about working in bakers percent as opposed to true percent is that you can change any ingredient without changing the percent of any of the others. As long as you know your dough formulation it's also very easy to formulate in bakers percent to give you and size dough you want to make. Just divide the sum of the bakers percent of your formula by 100 and then divide your desired dough weight by this number, this will give you the flour weight needed to make the new dough size, now you can calculate the amount of each ingredient for the new dough size. For example: The sum of bakers percent is 162% divided by 100 = 1.62. We want to make a dough weighing 500-grams. Divide 500 by 1.62 = 308.64-grams (flour needed to make a 500-gram dough from your dough formula). Now just calculate the ingredient amounts based on 308.64-grams total flour weight.

Tom Lehmann/The Dough Doctor

444

/ [Re: Differences in store bought dough for digestibility](#)

I think what you are seeing has nothing to do with digestibility but instead everything to do with density. Frozen dough performance can be all over the board, especially when comparing doughs from different manufacturers. For example, how the dough has been stored (temperature and temperature fluctuation) and where the dough is at with regard to its projected shelf life will play a significant role in how the dough ultimately performs for the end user. This does not even take into account differences in dough formulation and processing which will also have a significant impact. It sounds like one of the doughs that you got was either at the end or close to the end of its shelf life or it might have been abused in some manner during distribution or storage either by a distributor or at the point of sale (more common than what you might think). By design, frozen dough has little to no fermentation so in essence products made from it would be construed as being less digestible than products which are made from a fermented dough (fermentation is a form of digesting, just ask any ruminant) so in a sense you might say that eating a product made from a fermented dough is actually eating a product which has been partially digested already (actually better tasting than it sounds).

Tom Lehmann/The Dough Doctor

445

/ Re: Cheese Not Melting Well

Some stores use a VCM (vertical cutter mixer) to cut their cheese. Be sure to use the sharp metal cutting blade as opposed to the dull one used for mixing dough. You might post this question over at the PMQ Think Tank <www.pmq.com>.
Tom Lehmann/The Dough Doctor

446

/ Re: Minimum Temp

If you want to do a "Neo style" 600F but if you want to go traditional Neo you'll be looking for an oven that should be able to reach north of 800F.
Tom Lehmann/The Dough Doctor

447

/ Re: Cheese Not Melting Well

Assuming you are using refrigerated cheese as opposed to frozen?
Assuming you have pulled the fingers from the top of the oven for cleaning?
Tom Lehmann/The Dough Doctor

448

/ Re: Too stretchy dough?

Depending upon the type of "00" that you are using that might be wwaayy too much fermentation. Plus if you are not proficient at opening the dough the "00" flours are not the most forgiving to work with.
If you want to continue with the "00" flour try using the dough after overnight fermentation, then after 24-hours and lastly after 48-hours, see if you see an improvement at one of these times.
You don't mention anything about your oven so I assume you are able to achieve a sufficiently high baking temperature (750+F.) to achieve a decent crust color.
It is also suggested that you hydrate the IDY by suspending it in a small portion of 95 to 100F water before adding it to the dough water (be sure to include the water that the IDY is suspended in with the total dough water amount/%)
Tom Lehmann/The Dough Doctor

449

/ Re: Dilemma: Four pies-one stone

I think if it were me, I'd just make the necessary number of pizzas (completely cooked), and hold them in some type of insulated container (anything to help keep them as warm as possible, then using a screen, place them back into the oven for warming and crisping (this should only take a few minutes for each pizza). If the pizzas are thin enough you may not even need a screen, just place directly on the

stone to reheat (even faster). This is what many of the slice places do with very good results.

Tom Lehmann/The Dough Doctor

450

/ [Re: Thin crust dough recipe from Dino's Gourmet Pizza \(St. Paul, MN\)](#)

The KA bread flour is perfect. ^^^

Tom Lehmann/The Dough Doctor

451

/ [Re: Oven questions](#)

Here's my approach;

Make your dough specifically for hot press forming (Summerset or Do-Pro).

Ferment dough balls 18 to 24-hours prior to press forming.

After press forming, stack 5-high with a piece of parchment paper between each skin.

Place in cooler for 2-hours, then form into groups of 3-stacks each and plastic bag. Store in cooler until ready to transfer to truck for use.

Store under refrigeration in truck.

To fill an order, remove a skin from the stack, place on a seasoned screen, dress to the order and place on the infeed side of the oven conveyor.

Remove baked pizza from the outfeed side of the conveyor, transfer pizza to a cutting station and place screen into dough box for cooling (they cool very fast) and reuse.

This is a very similar method to that used by some of the fast casual pizza places.

Additional things for consideration:

You will need to have a state operating license and in addition to that you will most likely need to have a local license if you operate in a different county, city or town.

If you cross state lines you will need to be licensed for that state also. If you haven't already noticed, everyone is going to have their hand out.

Contact your local codes department to make sure what you intend to do is going to be approved, and GET IT IN WRITING!

Tom Lehmann/The Dough Doctor

Tom Lehmann/The Dough Doctor

452

/ [Re: Thin crust dough recipe from Dino's Gourmet Pizza \(St. Paul, MN\)](#)

Might it also say one (1) cup lemon? I'd start at 1/4-cup and see what happens, then work up in 1/4-cup increments from there to 1-cup.

As strange as the recipe is it wouldn't surprise me if they used ADY but I'd rise above that and use IDY instead and add it on top of the flour.

Keep us posted on your progress.

One other thing, regarding their flour blend, you can essentially duplicate it using the Pillsbury Bread Machine aka Bread Flour available from most supermarkets.

Tom Lehmann/The Dough Doctor

/ Re: Dough balls, par baked

For the dough you have two options, refrigerated dough balls that you might be able to have made by a local bakery to your specification (we can help you with that). You will need to have the bakery refrigerate the dough balls and get them to you ASAP and then you will hold them under refrigeration (cold fermentation / CF) for 1 to 3-days. The process for managing CF dough is discussed in many posts here. The other option is to buy a commercially made frozen pizza dough (most distributors will carry it), the frozen dough is available as dough balls, dough pucks, and also as pre-sheeted skins. The dough balls and pucks can be thawed (slacked out) in the fridge overnight for use on the following day, or they can be slacked out overnight, placed at room temperature until the INTERNAL dough temperature reaches 50 to 55F and then placed back into the cooler for 24-hours. The dough MUST then be used in its entirety on the day after that 24-hour period. Any dough not used for pizza can be converted to other products such as garlic knots or bread sticks as opposed to being tossed out.

As you are trying to keep things simple without added labor I would suggest looking into one of the smaller electric air impingement ovens made by companies such as Edge, XLT, Lincoln or Middleby-Marshall. Remember that you will also need to add a small prep-station for assembling the pizzas as well as a cutting station unless you plan on using your existing kitchen for these tasks. Keep in mind that whatever oven you choose, electric or not, your local code will most likely call for it to be installed under a hood so be sure to check before ordering.

Tom Lehmann/The Dough Doctor

/ Re: Thin crust dough recipe from Dino's Gourmet Pizza (St. Paul, MN)

I have to admit, that is one of the more bizarre "recipes" I have ever seen for pizza dough!

Written up in such a haphazard manner that we can't decipher it how do the employees manage to follow it accurately? The "pinch" of salt makes absolutely no sense at all (why even put it in?). The 1/2-cup of garlic powder is another one, garlic powder, like onion powder is a very effective reducing agent and anything over 0.15% in the dough will soften the dough. I'm betting that 1/2-cup exceeds this amount by a good margin. The only reason for using it at this level would be to enable using the dough very soon after mixing and the pictures of the skins seem to confirm this (very little to no real fermentation). The 1-Tsp. cinnamon isn't enough to contribute a flavor so why include it? The lemon juice is just a source of citric acid which helps to acidify the dough, this might possibly be done in light of the fact that the dough is a very short time dough or possibly a no-time dough. Commercially we acidify doughs too but we use vinegar since acetic acid is a by-product of yeast fermentation. If I read the flour correctly there is 23.5-pounds of flour in the recipe with 3-quarts (6#) of water, 1-quart of milk (about 28.16-ounces of water), 8-eggs (12-ounces water) and 2-quarts of oil, for simplicity let's call it 10.75-pounds of liquid so $10.75 \text{ divided by } 23.5 \times 100 = 45.74\%$ absorption equivalency. I'd say this relates well to the pictures of the dough and the finished pizzas. The question is what kind of yeast is used and how much lemon juice is being added.

By the way, 1-pound of cinnamon would contain sufficient cinnamic aldehyde to stop the yeast dead in its tracks.

Tom Lehmann/The Dough Doctor

455

[/ Re: oven temp puzzles me](#)

Hopefully she has sufficient sugar in the dough formula to give some crust color development at that low of a baking temperature. Also keep in mind that she is making a focaccia type of pizza which in many cases really doesn't have a lot of crust color development as it is what many might describe as a bread type of pizza.

Tom Lehmann/The Dough Doctor

456

[/ Re: sweet pizza dough](#)

pepe123;

Papa Murphy's has a sweet tasting crust. We used 5% sugar in the dough formula to replicate their level of sweetness. Remember though that you will need to bake your pizzas at a lower temperature (400 to 450F) to control crust color development during baking. Of course, if you want it sweeter you can always add more sugar but keep in mind that with 5% sugar you will need to increase the yeast level (0.5 to 0.65% IDY with 5%) and even more as you increase the sugar level.

Tom Lehmann/The Dough Doctor

457

[/ Re: Oven questions](#)

The pressing question is, where are you planning to make the dough? How about storing the dough? There are bread trucks and there are bread trucks, what size box does yours have? There won't be a lot of room after you add an approved sink, storage, prep, mixing, work space and oven, then add the sales area. For the oven, gas (propane) or electric. Remember gas storage or a generator. Would really like a little more information.

Tom Lehmann/The Dough Doctor

458

[/ Re: Is this as expected?](#)

Looks about par for the course, I just tear those bubbles open and go on with life.

Tom Lehmann/The Dough Doctor

459

[/ Re: marble, quartz or a granite top as a bench for shaping/stretching pizzas?](#)

If the health department will allow it, butcher block without a doubt, my second

choice would be man made quarts....about as close to indestructible as you can get.
Tom Lehmann/The Dough Doctor

460

/ [Re: dough storage while cooking?](#)

To answer your second question, as a rule once the dough is ready to begin opening and the dough is being held at room temperature, you window of time to open the dough is about 2-hours before you begin to see strange things happening. It's hard to answer your last question as it depends upon room/fermentation temperature, yeast level, dough absorption and flour strength. I'll make a S.W.A.G. and say that you should be able to begin using a 24-hour dough after about 18-hours.

Tom Lehmann/The Dough Doctor

461

/ [Re: oven temp puzzles me](#)

Chet;

Are you talking C or F. in temperature? "C" (Celsius) would make prefect sense but "F" (Fahrenheit) would be way to cold of an oven for baking pizzas. This is not to say that it cannot be done but I would seriously question it. Many of those old wood fired or coal fired stoves (I was raised with one) had a major problem, that was getting too hot. I can remember things being baked and at some point the oven door was cracked open to reduce the heat. I'm guessing that those pizzas might have been baked at a much higher temperature than what you might be thinking. Is there anything else that you can provide us on those pizzas? Size, thickness, what were they baked on? In general terms what type of pizza were they closest to?

Any additional information will help.

Tom Lehmann/The Dough Doctor

462

/ [Re: Is this ready?](#)

In one word.....no. several hours, not a problem, overnight.....probably not unless you reballed the dough.

Tom Lehmann/The Dough Doctor

463

/ [Re: Neapolitan dough and warm up time](#)

There is nothing fixed about the length of time the dough needs to rest at room temperature after CF before it is opened into a skin. Pizzerias will typically look for an internal dough ball temperature of 50F before beginning to open them while many home pizza makers look for something closer to 60F. A lot of it will depend upon your abilities at opening the dough. Remember that the colder the dough is (within the 50 to 60F range) the easier it is to open if you are not proficient. If you

typically make 3 pizzas at a time you might want to target the 50 to 55F temperature range for your opening temperature, then as you become more proficient (faster) you can increase the opening temperature to make the dough balls easier for you to open.

Tom Lehmann/The Dough Doctor

464

/ Re: Warped Dough Trays

I've used the trays/dough boxes from WRH Industries <www.wrh.net> Paul Bartley V.P. Sales & Marketing <pbartley@wrh.net> for years without a single problem. I can highly recommend then.

Tom Lehmann/The Dough Doctor

465

/ Re: Growing Your Own Tomatoes

Cooking down the tomatoes doesn't change the pH, think of it like this, if you have a cup of white vinegar and measure the pH it should be about 2.5 to 2.7, if you add a cup of water to it will the pH change? Answer: no, only the TTA titratable acidity (concentration of acidity will change). Citric acid is used by manufacturers to ensure food safety of their canned tomatoes mostly because it is effective and it is also the main acid present in the tomato so it will have little to no impact upon the flavor of the canned product. Tomatoes are all over the board when it comes to pH. The pH of the tomatoes is dependent upon the variety and also upon the ripeness. Commercially, only the first picking is used for canned tomato products but even with that there is some amount of variability of ripeness within that grouping so it is necessary to adjust the pH of the tomatoes at the time of processing. When growing tomatoes at home you can hand pick your tomatoes at peak ripeness, which is impossible to do on a commercial basis. With all of the new tomato varieties being developed for the home gardener it is always wise to know the pH of your tomatoes at the time of processing, remember most new varieties are of a low acid type (not conducive to home canning as is), failure to do so may prove to be fatal.

Tom Lehmann/The Dough Doctor

466

/ Re: Is this ready?

I'm not you, but if I were, I'd remove the dough from the container (very carefully) and place it onto an oiled plate, flattening the dough as I did so (to about 1-inch in thickness, then lightly oil the dough and cover it with a piece of plastic. Remove it from the fridge about 30-minutes before opening.

Tom Lehmann/The Dough Doctor

467

/ Re: Very airy dough

It really doesn't increase gluten formation, it just strengthens the gluten which makes the dough more elastic. By putting the salt into the dough water the dough forms more quickly, giving us the smooth appearance faster with less mixing time so there is less heat build up due to bowl friction as well as less wear and tear on the mixer. Remember, the target for mixing a pizza dough is to achieve the smooth appearance as quickly as possible (long mixing times make it more difficult to consistently hit our target finished dough temperature), not to fully develop the gluten. Additionally, from the time a dough begins mixing until it begins to change in density is roughly 30-minutes, depending upon dough temperature and yeast level, so if a dough can be mixed in 10 to 12-minutes we will have 18 to 20-minutes to get the dough processed and in the cooler but if we mix the dough for 20-minutes, that time is reduced to just 10-minutes (the yeast activates during the mixing cycle) and you can only guess as to what that long of a mixing time will do to the finished dough temperature.

Why do we mix a pizza dough?

- 1) Disperse ingredients uniformly throughout the dough mass.
- 2) Hydrate ingredients.
- 3) Develop just enough gluten to retain dough ball shape and reduce/eliminate stickiness.
- 4) Achieve desired/targeted finished dough temperature.

Tom Lehmann/The Dough Doctor

468

/ [Re: NY style dough prep in summer; what's different](#)

I agree, adding the ADY suspension at 6-minutes before the end of the dough mixing procedure is a bit different (although this is very close to one of the manufacturer's recommended procedures for adding IDY) Note: ADY suspension and IDY are two very different animals). I don't think it would cause any real issues however, I really don't like to add liquids late in the dough mixing process (especially if those last minutes will be hand kneading) due to concerns of not getting the liquid (ADY suspension) in this case, thoroughly incorporated into the dough.

I've said it many times, flour is the #1 biggest variable when it comes to dough ingredients. It's the nature of the beast.

As a note of interest: This is the time of the year when flour mills are getting into using the new year crop so don't be surprised if you find that you need to make adjustments to the dough absorption. New crop year flour is like that "box of chocolates".

Tom Lehmann/The Dough Doctor

469

/ [Re: Is this ready?](#)

Agreed! You're ready to begin making pizza! ^^^

Tom Lehmann/The Dough Doctor

470

/ [Re: Dang, forgot to take dough out of fridge - Suggestions?](#)

Consider every mistake to be a learning opportunity and you'll never stop getting smarter! :-D

Tom Lehmann/The Dough Doctor

471

/ [Re: Very airy dough](#)

Adding the salt later in the dough mixing process is commonly used in bread production as a means to develop the gluten more rapidly during the mixing process. On many cases it is added about 5-minutes before the end of the mixing process, but again, that's for bread production only. In pizza dough production we are not looking for nearly as much gluten development (we typically mix only enough to achieve a smooth appearing dough) so it is more common to add the salt right up front (usually with the water) but many also opt to add it on top of the flour too. Remember, we are not looking for the gluten development of a bread dough. Both salt and sugar can/will inhibit or slow yeast activity but this only happens if you leave the yeast in contact with the salt or sugar for any appreciable length of time. When putting the salt into the water it is common to then put the flour in the bowl and the yeast on top of the flour (machine mixing only). When mixing the dough by hand the yeast is commonly mixed into the water containing the salt (cy can be mixed directly into the water but ADY needs to be activated and IDY needs to be hydrated separately before adding it to the water), the flour is then immediately added and the mixing process started. It should also be noted that for hand mixing the oil is generally added to the water too as this ensures better dispersion but when machine mixing it is better to mix the dough about 2-minutes (until you don't see any dry flour in the bowl) and then add the oil, this delayed oil addition procedure prevents the oil from interfering with the gluten development. Tom Lehmann/The Dough Doctor

472

/ [Re: Is this ready?](#)

You also need to see what the top looks like to make an accurate determination. Tom Lehmann/The Dough Doctor

473

/ [Re: What is the worst pizza you have eaten?](#)

I've always said that I never had a pizza that I couldn't learn to like but I had to make an exception when I tried Wheat State Pizza here in Manhattan, Kansas a number of years ago :(

They didn't last very long either.....gee, can't imagine why?????

Tom Lehmann/The Dough Doctor

474

/ [Re: dissolving salt in a % of recipe water?](#)

If you are mixing the dough by hand there may be some advantage to dissolving

the salt in a portion of the dough water but if you are using a dough mixer there is no need to do it unless you are using a coarse salt. When I mix my doughs using a mixer I always put the water in the bowl first, then add the salt and sugar (if used) followed by the flour. No need to stir/whisk or mix the salt into the water. I then add the IDY on top of the flour and mix using the delayed oil addition mixing method.

Tom Lehmann/The Dough Doctor

475

[**/ Re: Why does more gluten mean a longer ferment?**](#)

Gluten is the material formed by the wheat flour proteins glutenin and gliadin, these proteins are generally present in greater quantity when there is more total protein in the flour. It is the formed gluten that is responsible for binding the dough together and giving it the unique elastic properties that we look for in a dough. During fermentation the yeast produces byproducts (acids, alcohol and carbon dioxide) which work to weaken the protein (think of marinating a tough piece of meat), plus the yeast also carries with it enzymes which work to convert some of the starch into sugar for the yeast to feed upon (these are amylase enzymes) another enzyme present is protease/proteolytic enzymes which hydrolyze proteins and weaken them to provide the desired extensibility properties needed so the dough can be easily opened into a skin without excessive dough memory characteristics aka "snap-back", so no, it is not the yeast itself doing the work on the proteins but instead it is their byproducts that do the work and the longer you allow the dough to ferment the more impact those byproducts will have upon the characteristics of the finished dough.

Tom Lehmann/The Dough Doctor

476

[**/ Re: Dang, forgot to take dough out of fridge - Suggestions?**](#)

In a pizzeria we can force the dough balls by flattening them to about 1/2-inch in thickness and placing them onto a warm (100 to 120F) surface and lightly oiling to prevent drying, by this method the dough is usually ready to open in less than 10-minutes. We actually developed a shelf liner which could be installed over a heated holding shelf just for this purpose.

Tom Lehmann/The Dough Doctor

477

[**/ Re: NY style in electric deck oven**](#)

To a great extent yes, but you may find that you will need to place a screen under the deep-dish pizza if the bottom gets too much bake.

Tom Lehmann/The Dough Doctor

478

[**/ Re: NY style dough prep in summer; what's different**](#)

My concern is the word "around", an estimate would be "around" but a thermometer only gives a specific temperature. In any case I'm sure CDennis will set us straight.

Tom Lehmann/The Dough Doctor

479

[/ Re: New member Hydrator](#)

For the olive oil, go with 2% and you'll be fine.

Tom Lehmann/The Dough Doctor

480

[/ Re: Pizza in Alaska](#)

Welcome! You came to the right place.

Let us know what kind of equipment you have (scale, mixer, something about your oven) and what kind of pizza you're interested in making.

What part of Alaska?

Tom Lehmann/The Dough Doctor

481

[/ Re: Protein flour as additive?](#)

Nice try, but chick pea and lentils don't contain any gluten forming proteins. All you are adding is a protein supplement, you would get a similar result by adding a protein drink base to the flour. In short, it will not increase the strength of your flour, it will make it more nutritious (from a protein stand point), but not any stronger.

Tom Lehmann/The Dough Doctor

482

[/ Re: NY style dough prep in summer; what's different](#)

A yellow flag jumped out when you said "reducing the water temperature to room temperature". To me, this says that the water temperature might be too warm resulting in a hot dough condition which most certainly will contribute to the stickiness you've been experiencing. My question to you now is: What is the finished dough temperature? A common water temperature is 60 to 65F and a typical finished dough temperature is in the range of 75 to 80F. Let's see how your numbers compare to these for starters.

Tom Lehmann/The Dough Doctor

483

[/ Re: Hello to anyone who actually reads these things](#)

It sounds like you were making a high absorption dough and trying to bake it on a screen as opposed to a stone or baking steel. Yep, that'll get you into trouble more

times than not. :-D

Tell us what kind of pizza you're trying to make...a N.Y. style? How do you mix your dough, by hand or machine? This is one site where T.M.I. is seldom ever an issue, unless it gets too personal.

Share with us what you are trying to achieve and somebody here will be glad to chime right in and help you get to where you want to be with your pizza making endeavors.

Tom Lehmann/The Dough Doctor

484

[/ Re: Scaling dough recipe](#)

With a smaller size dough sometimes the dough can get kicked around in the bowl by the "J" hook and receive some gluten development in the process but when the dough is of any size it just clings to the bottom and sides of the bowl getting very little actual agitation in the process. Or at some point the dough will develop gluten after which it then clings for dear life onto the hook and won't come off so it gets almost no further development when this happens. The only options are to continually stop the mixer and pull or cut the dough off of the hook (not very effective) or to increase the mixer speed thus allowing centrifugal force to hopefully pull the dough off of the hook.

In any case though, you only need to mix the dough JUST until it begins to take on a smooth appearance, more mixing than that is not needed not is it usually desirable as it contributes to a more bread like crumb structure in the finished crust as opposed to the desirable open, porous crumb structure which contributes to the crispiness of the finished crust. The "window pane" test for assessing gluten development is used almost exclusively for bread and buns but seldom for pizza.

Tom Lehmann/The Dough Doctor

485

[/ Re: yeast amount for final mix using poolish](#)

You don't say how much yeast is being provided by the poolish but you are correct, if the poolish is still active and healthy you normally don't need to add any more yeast.

Tom Lehmann/The Dough Doctor

486

[/ Re: Thickness of Pizza](#)

Generally speaking, the thickness of the pizza will be determined by the type of pizza you are making, not by the amount of toppings applied to it. An example of this would be the difference between an American thin crust (think Domino's) and a Pizza Hut pan style pizza where for all practical purposes the amount of toppings is the same for both pizzas but the amount of dough and the finished crust are significantly different.

Tom Lehmann/The Dough Doctor

487

/ Re: Transporting dough over long distances

I'm not sure I'd go that route with the double yeast. Instead, just go with 0.5% IDY and then proceed as you have outlined, I think you will have a much better end result.

Tom Lehmann/The Dough Doctor

488

/ Re: I'd like to know what is going on

Yael brings up a good point with the mountains, while we know that altitude will affect how a pizza (dough in general) bakes, we know that we may need to make adjustments in our dough formulation to account for this, it can also affect how the dough looks and feels, so it would be good to know the altitude that the "rural town" was located at.

Tom Lehmann/The Dough Doctor

489

/ Re: When to mix in butter?

Yep, just add it right up front, no need to delay its addition at the 6% level. I add the solid fats tight on top of the flour. HOWEVER, if you melt the butter (or any solid fat) it now acts like an oil, at least until it re-solidifies, so if it's melted it should be treated as an oil. If it's only softened you don't need to delay its addition either, which brings up a good point, if the butter is cold it may be too hard and not get thoroughly incorporated into the dough within most dough mixing time parameters, so it's best to use the butter at room temperature.

Tom Lehmann/The Dough Doctor

490

/ Re: Scaling dough recipe

In addition to Yael's questions, do you have a reverse spiral dough agitator or a "J" hook on your mixer?

Planetary mixers without a reverse spiral dough arm are notoriously sensitive to the amount of dough in the bowl.

Tom Lehmann/The Dough Doctor

491

/ Re: I'd like to know what is going on

A lot of what you mention as differences could possibly be due to differences in the VWG. There are different types of VWG and when you get it from different manufacturers there is a possibility it could perform differently. In any way you can make the same dough in the city but using the same brand of VWG as was used in the rural town?

Differences in the water, especially the hardness/mineral content might be a contributor but in this case I don't think it's the culprit.

Since you are using IDY, how do you add the IDY to the mixer?
How about the age of the IDY that you used in the city? How long have you had it?
How has it been stored?
Tom Lehmann/The Dough Doctor

492

/ [Re: Haircuts in an Age of Lockdowns and Self-isolation](#)

After some trepidation I did cut my own hair, in fact, I've cut it several times now and I have to say that I'm more than pleased with it. I'm using a #4 attachment for the sides and a #6 for the top. Then go to the #2 for the back of the neck and trimming close around the ears. It's so easy that I can't see ever going back into a barber shop again.

Tom Lehmann/The Dough Doctor

493

/ [Re: Diastatic Malt - How to adjust for different Lintner strengths?](#)

To achieve a stronger (darker) crust color just increase the amount of malt or sugar.

As for storage of the diastatic malt, like I said, condensation is the big issue. If the package is unopened there is no problem at all BUT you MUST be sure to allow the malt to THOROUGHLY warm to room temperature before opening or you will get condensation on the malt which over time, will lead to severe lumping. Because the stuff is so hygroscopic the condensation will quickly be absorbed into the malt powder, this will be repeated each time the package is opened for use. I have personally seen a near full bag turned into a single block of malt in just a few months, and this was with refrigerated storage (opened for use two to three times a week). The condensation issue is pretty well negated with room temperature storage but remember that each time the package is opened you are allowing more humid air to replace the desiccated air inside the package and the above process continues however at a much slower rate.

The key to effective storage of diastatic malt powder is to minimize the head space in the package, leave it in the original packaging and fold the package down tight to the contents after opening and after each use, secure well using a rubber band and hope for the best. It should go without saying that those living in a drier climate will experience fewer issues than those living in an area with high humidity. The same can be said for summer and winter, with fewer issues in the winter due to the drier air and more in the summer when the relative humidity is significantly higher.

Tom Lehmann/The Dough Doctor

494

/ [Re: kindly help please](#)

Jimmy;
My email address is <thedoughdoctor@hotmail.com>
Tom Lehmann/The Dough Doctor

495

[/ Re: Doyon Pizza Oven?](#)

I've not personally used one of these ovens but I've seen them at Pizza Expo and I don't know anyone who has one.

Tom Lehmann/The Dough Doctor

496

[/ Re: Doyon Pizza Oven?](#)

It sounds like you are looking at the Doyon Jet Air Pizza Oven (PIZ3). You should be able to Google this to get more information on the oven.

Tom Lehmann/The Dough Doctor

497

[/ Re: What style of pizzas yield good results without a stone/steel?](#)

I bake my American style pizza right on the screen. Just make sure your screens are seasoned, if they are not seasoned the pizzas will stick to the screens and you will have a difficult time separating the two. As you continue to use your seasoned screen(s) they will continue to darken (a good thing) which will further improve the baking properties of the screen. Do NOT wash a seasoned screen, just wipe it down with a clean towel or paper towel after each use. Once you begin to get some color on your seasoned screens they do not need to be oiled for each use (I do suggest lightly oiling the screens before each use even after seasoning) for the first few bakes though.

Tom Lehmann/The Dough Doctor

498

[/ Re: Storing Brioche Hamburger Rolls](#)

Rolls;

Sweet dreams..... :-D

Rom Lehmann/The Dough Doctor

499

[/ Re: San Diego newbie, seeking the perfect pizza dough recipe](#)

Do you have a scale capable of weighing in grams?

Please tell us something about your oven.

What kind of pizza are you wanting to make?

Tom Lehmann/The Dough Doctor

500

[/ Re: Storing Brioche Hamburger Rolls](#)

Absolutely! No different from most of the premium breads, rolls and pastries sold at the local supermarket. The only reason why some pastries have to be refrigerated is because they have some kind of perishable filling inside them (like my favorite....the chocolate éclair) or a cheese Danish which may not need refrigeration if the cheese mixture is applied pre as opposed to post bake. Even the butter that you're putting onto the crust immediately after baking will not warrant refrigeration.

Just store at room temperature, and even if it's a little warmer it won't hurt at all.
Tom Lehmann/The Dough Doctor

501

/ [Re: Final Dough Temp and freezing dough balls](#)

Sure! ^^^

Tom Lehmann/The Dough Doctor

502

/ [Re: Final Dough Temp and freezing dough balls](#)

You're in a conundrum in that you want to use the same dough for freezing (0.5%, or more IDY recommended) and for cold fermentation (0.2 to 0.4% IDY recommended). So you have to compromise, low end for frozen dough and high end for CF which is, in my opinion, 0.5% IDY.

Tom Lehmann/The Dough Doctor

503

/ [Re: Storing Brioche Hamburger Rolls](#)

Rolls;

To retain maximum freshness in the buns, if you are going to use the walk-in cooler, first turn it off and allow it to warm up to room temperature or better yet, 85 to 90F. Refrigerated temperatures are the temperature at which bakery foods stale at their fastest rate. The slowest staling is experienced at 85 to 90F., but not for more than 3 to 4-days as after that mold is going to be the issue not staling.

My advice:

Brush with melted butter or Ghee.

Allow to cool to 95 to 100F.

Place into plastic bags and close using a twist tie.

Store in a warm area until used on the following day.

Tom Lehmann/The Dough Doctor

504

/ [Re: Final Dough Temp and freezing dough balls](#)

First off, your salt level is rather low at only 0.76%, for flavor, dough strength and controlling the rate of fermentation I'd suggest increasing it to 1.75% or as high as 2.5%.

As for the finished dough temperature, in most cases I would say that 70 to 75F

might be a bit too cold for a cold fermented dough going into a walk-in cooler, but for a reach-in commercial cooler it is the recommended temperature range, and since a home fridge is nowhere as efficient as a commercial reach-in cooler I think you will be fine using the same dough for your CF process.

Tom Lehmann/The Dough Doctor

505

/ [Re: kindly help please](#)

Here is a process that might work for you, I can't say for sure as I don't know anything about your shop conditions or much else for that matter.

This is an adaptation of an emergency pan dough method, please keep in mind that the dough as presented is good for a single day but you can always try it on the second day to see if it will perform to your expectations, if not, any remaining unused dough at the end of the day can be made into bread sticks or garlic knots and par-baked for later use or it can also be incorporated into new dough at up to 15% of the new dough weight.

Flour (12 to 12.8% protein content) 100%

Salt: 2%

Sugar: 2%

Fat: 4%

IDY: 0.5%

Water: (65F) 62% This may need to be adjusted as all flours are a bit different.

Put water in mixing bowl, add salt and sugar, add flour and IDY.

Mix about 2-minutes at low speed or just until you don't see any dry flour, then add the oil/fat.

Mix one more minute at low speed, then mix about 8-minutes at medium speed or JUST until the dough has a smooth appearance.

The dough is now done mixing. Check the finished temperature, you want it to be in the 75 to 80F range.

Take the dough directly to the bench for processing. It must be completely processed within 20-minutes.

Scale and ball the dough. Place into dough boxes and lightly oil the top of each dough ball.

Place in cooler in a cross-stacked manner until the INTERNAL dough ball temperature reaches 55F. Then down-stack.

Allow the dough to cold ferment for 18 to 24-hours.

On the following day, remove dough from cooler and immediately place into dark colored, greased deep-dish pans. Flatten the dough into the pan as well as possible OR you can pass flatten the dough balls on the bench and place into the pan.

Cover the pans with a large sheet of plastic or some other manner and allow to proof for 60-minutes in a warm location.

Press the dough out again (in the pan) and allow to continue proofing for 20 to 30-minutes, if the dough hasn't pulled away from the pan don't touch it, if it has pulled away gently press the dough again to fit the pan.

Here is where you will need to experiment:

Place two pans of dough in the cooler, then in 30-minutes place two more pans in the cooler, then in 15-minutes 2 more pans and again after another 15-minutes (in total there will be a difference of 2.5-hours between the first two pans and the last two pans going into the cooler. After the last two pans are in the cooler remove the

first two pans, dress and bake (about 7.5-minutes at 475F) in an air impingement oven. At the same intervals that they went into the cooler remove the pans of dough (in the same order) and dress and bake. Assess each pizza after baking to determine which proofing time provides you with the best finished pizza. The process may need to be tweaked a bit for your specific shop conditions but this should get you on the right track and close to where you want to be.

This process will allow you to work your deep-dish pizza straight out of your cooler inventory so as long as you have an inventory in the cooler you will have deep-dish pizzas to bake. Unless you have a LOT of deep-dish pans you will need to repeat this process at some point during the day to rebuild your inventory in the cooler.

Tom Lehmann/The Dough Doctor

506

/ [**Re: Final Dough Temp and freezing dough balls**](#)

Peter;

I most cases cold water won't cut it due to the longer mixing time needed, but if you can live with 10 to 15-days shelf life you can put the greater gluten development on the back shelf and maybe get away using straight ice water, or something close to it. In many cases we have to use ice as part of the water, if you do this be sure to weigh the ice and subtract an equal WEIGHT of water from the formula.

Chilling the flour can help if you are not mixing to a greater level of gluten development, otherwise it is counter productive as it takes longer to develop the gluten in cold or frozen flour which lengthens the mixing time which creates more heat due to bowl friction.

In commercial operations we use mixers with direct expansion jacketed mixing bowls the get so cold that they will freeze the dough to the bowl if the mixer stops with the bowl cooling turned on. They also super cool the flour by injecting carbon dioxide into it, however they also add glutathione or L-cysteine to the dough to reduce the dough mixing time. It needs to be noted that all of this produces a dough that is VERY TOUGH and hard, it is so tough that highly specialized horizontal mixers with dual drive are a standard feature. I might also add that both L-cysteine and glutathione are counter productive to achieving a long (16 to 20-weeks) shelf life so commercial frozen dough will also contain some type of a coated (think time release) oxidant such as ascorbic acid, azodicarbonamide, or possibly one of the newer enzymatic oxidants, which kicks in after mixing to counter the effects of the reducing agent used (L-cysteine or glutathione).

Tom Lehmann/The Dough Doctor

507

/ [**Re: What are the Surprising benefits of consuming pizza to promote Good Health?**](#)

Tscarborough;

Your question leads me to believe that you may have never been on a "pizza" date!

:o :-D :-D :-D :-D

Tom Lehmann/The Dough Doctor

/ Re: Final Dough Temp and freezing dough balls

Absolutely! It's the final dough temperature that is causing the dough to ferment even though its in the freezer. In a home freezer it can easily take a day or more for a 500-gram dough ball to thoroughly freeze (it ain't frozen until the core is frozen). In one test we did many years ago the core of a 500-gram dough ball still wasn't frozen after 3-days in a home freezer! The good news is that the dough, even though it has been fermented will perform pretty well out to something in the 10 to 15-day range, after that it's a crap shoot as to how well the dough will perform, if at all. For home use, who cares if the dough doesn't perform up to snuff? You can always make a few adjustments and skate by, but in a commercial application that bucket doesn't hold water as the dough has to ALWAYS perform up to the customer's expectations, even in view of abuse bestowed upon the dough at the hands of the distributor, merchandiser, and the end user! You can hedge your bets and get optimum performance from your dough by doing the following:

Target finished dough temperature at 65 to 70F.

Mix the dough to near full gluten development.

Scale and ball IMMEDIATELY after mixing.

Flatten the dough balls to 1 to 1.5-inches thick.

Lightly oil the dough "pucks".

Place on aluminum sheet pan (better heat transfer) for freezing.

Dough should go into the freezer ASAP after mixing and forming.

Plastic bag the dough pucks only AFTER the core temperature reaches the +15 to +10F range.

To use the frozen dough:

Remove from freezer and allow to temper AT (NOT TO) room temperature until the core temperature reaches 55 to 60F.

Place into the fridge to begin the cold fermentation process.

Note: Frozen dough formulas will typically contain 1.5 to 2 times the normal yeast level for the product being produced, this is to adjust for the yeast cells destroyed and/or damaged during the freezing process. In a home use setting failure to do this will usually result in a slower than normal fermentation rate that may not even be noticed as we automatically adjust for it by just allowing the dough to ferment or proof longer, commercially though this is not a viable solution, hence the higher yeast levels.

Tom Lehmann/The Dough Doctor

Tom Lehmann/The Dough Doctor

/ Re: Help fine tune a cold fermented NY/American dough recipe

Please let us know how it turns out and if you can, send some pics.

I don't know what you plan to store the dough balls in but to get started you might use the individual plastic bag method. We have discussed this method here previously so I won't go into the details: oil dough ball, place in plastic bread type bag, twist to close, tuck twisted end under dough ball as you place in in the fridge, bring out and allow to set AT room temperature for about 2-hours before opening into skins for immediate use. NOTE: These is no cross-stacking or leaving anything

open with this method....very convenient. :)
Tom Lehmann/The Dough Doctor

510

/ Re: Help fine tune a cold fermented NY/American dough recipe

I will address some of your questions to help you get started with food for thought.
Flour: I would recommend using the KABF as it has a higher protein content and is better suited to longer fermentation times.

Absorption: I suggest beginning with 62% for long fermentation times and then work up from there.

Fat: You can use olive oil if you wish, I suggest using a pomace grade olive oil as it will provide a better flavor when used IN the dough.

Yeast: Use IDY at 0.25%. Add it directly to the flour. IDY is very stable and is easy to use.

Salt: If you like things salty go for 3%, but I recommend 2 to 2.5%.

Sugar: 2 to 3% should work fine for you.

Process: An autolyse really isn't needed with dough absorption in this range. If you "have" to use it this is a good time to catch up on some reading. No yeast in an autolyse if you do put it in it is a biga and totally different.

Adding Ingredients: Add the water, then add salt and sugar (no need to stir or whisk), add flour with IDY last on top of the flour. Mix at low speed just until you don't see any dry flour, then add the oil and mix one more minute at low speed, go to medium speed and mix JUST until the dough takes on a smooth appearance (typically about 8-minutes). Targeted finished dough temperature is 75F.

Take dough DIRECTLY from the mixer to the bench, scale and ball, lightly oil each dough ball, place in fridge UNCOVERED until the INTERNAL dough ball temperature reaches 50F then cover for the duration of CF. Cold ferment for 72-hours (experiment).

To use the dough, remove from fridge, allow dough balls to warm AT (NOT TO) room temperature until the internal dough ball temperature reaches 60F.

Depending upon your skills, if you find it difficult to open the dough at this temperature open the dough at 50F, so I'd suggest trying one at 50F and deciding if you want to allow it to warm more or not...your call.

Bake on a dark colored/seasoned screen or pan or if you have one, a stone or steel. Bake at 500F if possible.

Tom Lehmann/The Dough Doctor

511

/ Re: Diastatic Malt - How to adjust for different Lintner strengths?

Store it like you would brown sugar, remember it's extremely hygroscopic. Never refrigerate it, it won't hurt it but it will only promote condensation...not a good thing.

Tom Lehmann/The Dough Doctor

512

/ Re: Dough management for summer festival

Following the old KISS principal;

Mix

Finished dough temp @ 70 to 75F.

Take immediately to bench for scaling and balling.

Oil the dough balls and bag individually (we have discussed this method a number of times previously).

Refrigerate overnight.

Box in cardboard cases and transport to event.

Store under refrigeration

Use the dough directly from the refrigerated cases.

Open into skins, dock well, dress to the order and bake.

Tom Lehmann/The Dough Doctor

513

[/ Re: How badly did I Screw up?](#)

Did the dough formula that you "followed" say it was suitable for freezing?

My emergency dough formula is intended for immediate use only! It has not been formulated for freezing. Doughs that are formulated for freezing will have high sugar, salt and yeast levels, they will be mixed to near full gluten development and they will not be fermented prior to the freezing process, additionally the dough balls are almost always flattened to about 1.5-inches thick to facilitate rapid freezing of the dough. Dough that is not blast frozen (-35 to -55F) will have an effective shelf life of 10 to 15-days.

As for the dough that you have, you might try reballing it and allowing it to cold ferment over night, then remove from the fridge and allow to set at room temperature until the internal dough ball temperature reaches 60F, then open into skins and try making a pizza.

Without seeing what you actually did I can't comment on much.

Tom Lehmann/The Dough Doctor

514

[/ Re: Help with poolish dough recipe](#)

Why are you using such warm water for both the poolish and the dough? You should be targeting not more than 82F for the poolish (actually I like to target 75F) and 75 to not more than 80F for the finished dough temperature. I don't look for a "mature poolish, instead I go by the flavor I'm looking for which I typically get in about 8-hours. If your poolish is much warmer than 80F I would think it would be a candidate for full collapse by 14-hours. You still want to see some activity in the poolish. Hopefully your salt is 13.7-grams and not 113.7-grams (typo?). After the bulk fermentation I would just scale and ball and CF overnight, you will need to experiment to see how long you will need to allow the dough balls to set at room temperature before opening, with your absorption I'm guessing maybe 90-minutes?

Tom Lehmann/The Dough Doctor

515

[/ Re: Very airy dough](#)

Your dough formulation needs either diastatic malt or sugar if you are going to use "00" flour in a home oven. Your pizza is super limp and is severely lacking in any crust color. Both diastatic malt and sugar will provide crust color and might also help with yeast performance too. If it were me, I'd be using just a quality bread type flour that is already malted at the flour mill, I think you'll find it to be much more compatible with your home oven. "00" type flours typically perform best when you can bake on the north side of 750F/399C.

Tom Lehmann/the Dough Doctor

516

[/ Re: Crust on Dough?](#)

So you're using a "dough box" as opposed to a "pizza box"....got it! When one opens a dough ball into a skin the dough ball is transformed either manually or mechanically or by a combination of both methods into a flattened shape known as a dough skin aka pizza skin upon which the sauce, cheese and other toppings are placed immediately before being placed into the oven for baking.

Since you were using a dough box, in the future should you have a change in plans all you will need to do is to lightly oil the dough balls (you can do that without disturbing them in the box unless they have already begun to proof (rise), in that case you might want to re-round the dough (flatten and reform back into dough balls), then lightly oil and place back into the dough box, leave the lid off for the first 2-hours when you put them into the fridge to ensure consistent cooling, then cover the box for the duration of time in the fridge. If you don't have room in the fridge for the dough box refer to my previous instructions for bagging the dough balls. If you don't leave the dough box open for those 2-hours the dough will not cool properly and can result in an over fermented dough condition by the time you're ready to use it (it would depend upon how much fermentation the dough balls had already received at the pizzeria), you will also experience a wet, sticky dough when you go to use the dough due to condensation forming inside the dough box as a result of not leaving it open. Some of that condensed water will be absorbed into the dough and can manifest itself later on in the form of bubbles forming on the dough during the baking process.

Tom Lehmann/The Dough Doctor

517

[/ Re: Best hydration / protein percentage](#)

Actually, the Farinograph report will not give you the information that you are looking for. The Farinograph absorption is that amount of water needed to be added to the flour to give a dough with a specific viscosity a full development. It serves only as a reference point by all who use it. To make application of the Farinograph absorption data one needs to develop what is called a Farinograph factor which is specific to the product being made. For example most U.S. commercial bakeries producing white pan bread will use a Farinograph factor of about 1.04 to possibly as high as 1.07. This means that for their specific product, made by their specific bread making process and equipment they will multiply the Farinograph absorption by 1.04 to 1.07 to get the STARTING dough absorption for that specific lot of flour, they will then make adjustments as necessary to the actual

dough absorption for optimum processing and finished product quality characteristics. Because MAXIMUM dough absorption is specific to the product as well as the dough management process being employed the only real way to determine it is to make a series of dough with increasing dough absorption values until you find the HIGHEST absorption that the dough will carry while still allowing for decent handling properties and providing the desired finished product characteristics. Once you have done this you can divide that number by the Farinograph absorption value of THAT SAME FLOUR to find YOUR Farinograph factor, now with your Farinograph factor you can take any other flour for which you know the Farinograph absorption value and calculate the STARTING MAXIMUM dough absorption for that flour in YOUR shop.

You cannot calculate MAXIMUM dough absorption on just the protein level of the flour, there are just too many variables with the protein which include strength characteristics of the protein and especially the fermentation tolerance characteristics of the flour, and to some extent how the flour was milled can also impact the absorption properties too, for example, if there is more starch damage in the flour it will exhibit a greater dough absorption than a like flour with a lower level of starch damage BUT with fermentation the damaged starch will be quickly hydrolyzed into sugar, thus releasing its water and the dough will turn to soup.

Tom Lehmann/The Dough Doctor

518

[/ Re: Crust on Dough?](#)

It is called desiccation, to put it another way; your dough balls dried out. So, how do you prevent it from happening again? Simple, just very lightly oil the dough balls and place them into individual plastic bags (like bread bags). DO NOT use the ZipLock bags. In a pinch you can even use those thin bags that you can get in the produce department at your local supermarket. Drop the lightly oiled dough ball into the bag, twist the open end into a pony tail and tuck it under the dough ball as you place it into the fridge. To use the dough on the following day, remove the dough from the fridge about 90-minutes before you want to open it into skins, then turn the bag down around the dough ball and invert the bag over a floured work surface the dough will fall from the bag inverting it as it falls free. Flour both sides of the dough and begin opening it into a skin by your normal method. Something you said though sounds strange, you said the dough was in a regular pizza box (2-inches high at most). Mighty small dough balls?? Am I missing something? I'm assuming the dough was not already opened as you mentioned "dough balls", with several in the same box.

Tom Lehmann/The Dough Doctor

519

[/ Re: Very airy dough](#)

Amen to that!! ^^

It's not just the yeast, but the combined effects of acids (produced during fermentation), and enzymes on the starch and proteins which work to degrade the starch and proteins making them more digestible plus the degraded proteins are further degraded during baking which helps to further contribute to the flavor of the baked crust.

If you want to see what a short or no fermentation dough tastes like just buy some commercial (Rich's) frozen dough and make a pizza skin out of it, dress it and bake it. Commercially made frozen dough is produced with essentially no fermentation but it does have the added additional yeast needed to allow it to perform much like an emergency dough.

Tom Lehmann/The Dough doctor

520

/ [Re: Black & Decker 5 minute pizza oven + steel? Indoor pizza oven?](#)

I'm betting a cheap Walmart or Costco run of the mill toaster oven would work just fine for your limited application. I've made pizza a number of time in my son's aforementioned toaster oven with decent success with thin crust pizzas. I haven't tried making anything close to a deep-dish or even a thick crust pizza in it so I can't comment.

Tom Lehmann/The Dough Doctor

521

/ [Re: Very airy dough](#)

Any yeast calculator that doesn't take temperature into consideration is NOT a calculator. Temperature is the #1 driver of fermentation/yeast activity. There is no way one can calculate the amount of yeast to use without first knowing the temperature that the dough will be fermented at.

Tom Lehmann/The Dough Doctor

522

/ [Re: Diastatic Malt - How to adjust for different Lintner strengths?](#)

Spot on! ^^^

Normally malted flour has approximately 0.25% 20 degree L dry malt powder. So if you have a 60 degree L malt powder you would use 1/3 as much 0.25 divided by 3 = 0.08333333% to achieve that level of malting. There is nothing chiseled in stone regarding how much malt to use but if you use too much the first thing you will notice is a sticky dough condition, then excessive crust color development during baking and if you really go for broke you might even experience a weakening of the dough accompanied by the stickiness.

Tom Lehmann

523

/ [Re: NY style in electric deck oven](#)

Not a bad looking pizza at all. See, that wasn't so hard after all, was it? :chef:
:drool:

You're well on your way to making even more great pizzas!

Tom Lehmann/The Dough Doctor

524

/ Re: Freezing dough question

Always before. This results in less damage to the yeast during the freezing process.
Tom Lehmann/The Dough Doctor

525

/ Re: Dough resting at room temperature before tossing

It doesn't do any good to put them back into the cooler as it is all but impossible to effectively cool them once they have fermented and become less dense, but all is not lost, I NEVER find it necessary to toss out any unused dough balls.

1) They can be incorporated into new dough at up to 15% of the new dough weight.
2) The dough balls can be partially opened, placed on screens and stored in the cooler in a wire tree rack (cover with a food contact approved bag after 20 to 30-minutes).

3) Make into bread sticks or garlic knots.

4) Make into dessert pizzas by opening into skins, brushing with melted butter and sprinkling with a cinnamon-sugar mixture, then make a cheese base (1# cream cheese, 1# sour cream, 1# ricotta cheese, 8-ounces powdered sugar, 2 whole eggs (about 100-grams/4-ounces) and mix until smooth, add cream to thin if necessary, you want the consistency of mayonnaise. Spread about 3/16-inch over the skin leaving a 1/4-inch edge exposed. Top with sliced fruit, berries, sliced grapes, etc. If you wish you can also use drained fruit cocktail. Bake just like your regular pizzas and finish with a powdered sugar and water icing drizzled over the top after cooling for about 15-minutes. Store under refrigeration. Serve lightly reheated or cold. We have discussed this dessert pizza before so a search through the archives should bring it up with more detail.

If you are so inclined you can also just stop after applying the cinnamon and sugar, sprinkle with a ready made streusel mix and bake the same as your regular pizzas. Cut into strips or squares and serve with a side cup of powdered sugar-water icing as a dessert option.

Use your imagination to come up with ways to drive your business with what you have been tossing out.

Tom Lehmann/The Dough Doctor

526

/ Re: NY style in electric deck oven

Alex, that's a hard question to answer without knowing a lot more about your oven, but for starters I personally start at the highest temperature your oven will bake at (both top and bottom the same) and let the chips fall where they may regarding the total baking time. Use the bake characteristics to guide you in making further temperature adjustments if necessary.

Tom Lehmann/The Dough Doctor

527

/ Re: how long will flour stay good for?

White flour:

Room Temperature storage in metal or plastic containers (5-gallon pails) = 1-year.
Refrigerated storage in plastic bags or plastic pails = 2+ years.

Frozen in plastic bags placed in plastic 5-gallon pails and sealed = 10-years +.

Whole-wheat flour: Room temperature = 2 to 3-weeks (rancidity is the issue).

Whole wheat flour: Refrigerated: 4 to 6-months.

However you store the flour it is suggested that you break it down into quantities that you can use in 2 or 3-weeks so you will be putting multiple bags into a plastic pail, then you can remove just what you need for a few week use without disturbing the rest.

Things to look for: 1) The flour clumps. Flour doesn't clump, this is caused by an Indian Meal Moth infestation and it is their webs that result in the clumping. 2) Flour beetles or cigarette beetles can infest flour and are seen as what looks like coarse black pepper in the flour (usually at the top of the bag).

Whole wheat flour: Frozen 8 to 12-months.

NOTE: If you freeze the flour always break it down into smaller bags for use over a week or so. Don't use flour directly out of the freezer, instead allow it to temper AT room temperature for 24-hours before opening the bag. This will prevent condensation from forming in the flour left in the bag which can lead to mold development in the flour.

Pick your poison.

Tom Lehmann/The Dough Doctor

528

[/ Re: two man pizza shop ?](#)

I'll give it 5-years....on the outside, my gut instinct says 3-years.

Burn out is the biggest obstacle.

Tom Lehmann/The Dough Doctor

529

[/ Re: Looking to make great Pizza at home !](#)

Welcome! You came to the right place to up your pizza game!

I'd suggest that you begin by researching some of the past discussions on cracker type thin crust pizza. We have had some very good discussions along with instructions for making it that might help you get started, then let us know where you need help. Just for a reference, you say you eat mostly chain pizza, which one has the crust closest to what you would like to make, someone here might have already reverse engineered/replicated it already for you.

Tom Lehmann/The Dough Doctor

530

[/ Re: How to use a spiral mixer](#)

Oxygenate the flour? You're pulling my leg, right? :-D :-D :-D

Tom Lehmann/The Dough Doctor

531

[/ Re: Trouble with sourdough cold ferment](#)

I don't think it's the cold fermentation that is the problem but instead I think it's all the extra time you are giving the dough before opening it. By nature, sourdoughs are more acid than other types of doughs and acids degrade proteins (it is the two gluten forming proteins that create what we fondly refer to as "dough") all that additional time in the fridge is just allowing that much more time for the acids to further degrade the flour proteins which results in the weak dough that you're experiencing.

Tom Lehmann/The Dough Doctor

532

[/ Re: How to use a spiral mixer](#)

You use a spiral mixer just like any other dough mixer, add tempered water first, followed by the flour, salt, yeast, sugar (if used) and any other dry ingredients, mix at low speed just until all of the flour is whetted, then add the oil while mixing at low speed for 1-minute and finish mixing at second or high speed just until the dough takes on a smooth appearance.....you're done mixing.

Tom Lehmann/The Dough Doctor

533

[/ Re: two man pizza shop ?](#)

The one question that just begs to be asked is: What is your business concept?

Tom Lehmann/The Dough Doctor

534

[/ Re: Par baking pizza temperature](#)

leto;

Your assumption is indeed correct.

Tom Lehmann/The Dough Doctor

535

[/ Re: Scale to get started](#)

I use a KD-8000. It has a sufficiently large platform and plenty of capacity (remember capacity = weight of container + contents), and it runs on regular flashlight batteries, for a very long time I might add. Cost is about \$50.00.

Tom Lehmann/The Dough Doctor

536

[/ Re: Raw chicken?](#)

Since all chicken, like eggs are considered to be E-coli positive I am more concerned over cross contamination than being able to cook it to 160F (the

industry accepted target temperature).
Tom Lehmann/the Dough Doctor

537

/ [**Re: W380 soup**](#)

What is being described sounds a lot like a high starch damage flour.
Carries high absorption beautifully due to the damaged starch but exhibits only about 90-minutes of fermentation tolerance after which time the dough "lets-down" flattens out.

How do the dough balls look at 1 and 2-hours?

Tom Lehmann/The Dough Doctor

538

/ [**Re: Welcome Back Tom \(Dough Doctor\)!!!**](#)

Thanks guys, I really appreciate it!

Tom Lehmann/The Dough Doctor

539

/ [**Re: Preferred Yeast**](#)

While CY may be more "sexy" to use the IDY, when used properly, will give you much more consistent results and it has a significantly longer shelf life too.

Tom Lehmann/The Dough Doctor

540

/ [**Re: Welcome Back Tom \(Dough Doctor\)!!!**](#)

Thank you,

Tom Lehmann/The Dough Doctor

541

/ [**Re: Confused with different ways of making dough**](#)

ZULU202;

If you will contact me directly at <thedoughdoctor@hotmail.com> I'll send you a copy of my dough management procedure which should put you on "terra firma" and from there you can experiment as you wish.

Tom Lehmann/The Dough Doctor

542

/ [**Re: W380 soup**](#)

Does the flour carry the water initially?

How are you mixing the dough? What does the dough look like after mixing? After

12-hours? After 24-hours?
More information is needed.
Tom Lehmann/The Dough Doctor

543

/ [Re: Cheap dough tray in UK](#)

Aluminum sheet pans work well too, place the dough balls on a lightly oiled sheet pan (18 X 26") and cover with a food contact approved plastic bag. I just wrote an article on this for PMQ Magazine, it will be in the second part of a two part article. The first part is discussion on how to use dough boxes.
Tom Lehmann/The Dough Doctor

544

/ [Re: Pizza crust on drier side](#)

::) ::) ::) ::) ::)
Tom Lehmann/The Dough Doctor

545

/ [Re: Creating something new and standardised.](#)

You did ask for a finished crust akin to a P.J.s, that's pretty close! To reduce the crust browning just reduce the sugar until you get the color you're looking for. For a more open crumb structure reduce the dough mixing time by 2-minutes and increase the total yeast by 1%, let's see where that gets us.
Tom Lehmann/The Dough Doctor

546

/ [Re: Dough too soft/limp \(before cooking\) after 4 day rise?](#)

::) ::) ::) ::) ::) ::)
Tom Lehmann/The Dough Doctor

547

/ [Re: Pizza crust on drier side](#)

Potato starch is nothing more than finely ground dehydrated mashed potato, so if you have potato starch go ahead and use it.
Tom Lehmann/The Dough Doctor

548

/ [Re: 24hr Bulk Cold Ferment done....now what? Something normally goes wrong here](#)

Yael, "core", like the core of the earth. :-D
Tom Lehmann/The Dough Doctor

549

/ Re: What are black spots in dough?

They're not harmful and they will go away during baking, nothing to worry about. Pretty common.

Tom Lehmann/The Dough Doctor

550

/ Re: Where can diastatic malt be found?

To match the equivalent of flour that is malted at the mill you will need to use 0.25% of a 20L diastatic malt powder with an un-malted flour.

Tom Lehmann/The Dough Doctor

551

/ Re: 24hr Bulk Cold Ferment done....now what? Something normally goes wrong here

Your ADY amount is 0.6%, not 0.006% ($3 \text{ divided by } 500 \times 100 = 0.6$)

That's a lot of yeast for the way you are fermenting the dough. Plus I don't advise allowing the dough to come up to room temperature after the cold fermentation period, instead, allow it to temper AT (NO TO) room temperature until the internal ball temperature reaches 60F.

Tom Lehmann/The Dough Doctor

552

/ Re: Dough too soft/limp (before cooking) after 4 day rise?

By my calculation you are trying to make a 4-day dough using 1.69% IDY ($0.2 \text{ divided by } 11.8 \times 100 = 1.69491\%$) This is WWAAYY too much IDY. For a 4-day dough I only use 0.375% (11.8×0.375 (press the "%" key) and read: 0.04425-ounce(1.2567-grams).

Tom Lehmann/The Dough Doctor

553

/ Re: I need some help altering my dough recipe to cook at a higher temperature.

Deck ovens have their limitations. The more pizzas you put into the oven the longer and more often the door is open/opened thus reducing top heat. With Marsal deck ovens they have tremendous heat recovery in the deck which is why the bottoms are getting too dark or burned. I also know their advertising that you don't need to rotate pizzas in their ovens, great advertising claim, and it works with just one or two pizzas in the oven, with more pizzas than that, don't believe it. Without knowing your dough formula and dough management procedure, I feel you may be out of oven capacity. Your baking time is not too out of line with what we have found when baking with a full deck of pizzas.

Can you make your pizzas bake any faster? Maybe but we need to know where you

are presently at with dough formulation, scaling weight and dough management as you may need to make changes to all of these.

Tom Lehmann/The Dough Doctor

554

/ Re: Pizza crust on drier side

If it is a softer crumb structure that you are seeking you can increase the fat content up to about 8% without any difficulties. The only thing that increasing the dough absorption will change is the handling properties of the dough as any additional water will just need to be baked out (is is very difficult to increase the moisture content of the crumb by a significant amount without adding something to retain that additional water. So, if you want to have a more moist crumb you best bet will be to include some mashed potato flakes in the dough formula. I would suggest starting at 2% and going up in 2% increments from there. For every 1% mashed potato flake that you add you will need to increase the dough absorption by an additional 2%.

If you want to know what is in the "additive cocktail" that you are using all you need to do is to look up the E.U. numbers shown in their ingredient listing and that will identify the functional ingredients. Depending upon what is actually included you might be able to eliminate it but we would need to know the constituent ingredients before making a decision. In many cases I've found that when cocktails such as this are used the cost will exceed the benefit by a significant margin. I'm betting that included in the ingredients are salt, sugar, DATEM, ascorbic acid and some type of a fat to eliminate dusting and separation.

Tom Lehmann/The Dough Doctor

555

/ Re: What does a Pizza Stone supposed to smell like? Is mine bad?

Regarding the soda, if there is any oil/fat of any kind in/on the stone the soda will saponify the fat rendering a soapy taste which could make matters even worse.

Tom Lehmann/The Dough Doctor

556

/ Re: How do I modify my pizza making if I have active dry yeast for bread machines?

Yes.

Tom Lehmann/The Dough Doctor

557

/ Re: What does a Pizza Stone supposed to smell like? Is mine bad?

If you can smell it, it's volatile, if they're volatile you should be able to place your stone in the oven and cook-off the volatiles. Try placing your stone in the oven at pizza baking temperature and let it bake for an hour or more, if you have a broiler maybe put it in or near the broiler heat. This should drive off any volatiles. You mentioned soap, did you ever wash it with soap? I never wash mine, ever! If it

really needs cleaning (seldom) I just scrape it and if deemed necessary I might hit it with a little sandpaper. Just to confirm though, this is NOT a glazed ceramic tile we're talking about..right?

Tom Lehmann/The Dough Doctor

558

/ Re: Where can diastatic malt be found?

Non-diastatic malt is often considered as a sweetener or type of sugar but with a flavor component added to it. Due to the flavor component it is not a good sweetener if you are trying to achieve a sweeter tasting baked product but if you are looking for a "nutty" flavor aspect or a malted milk type flavor (depends upon the amount you use) or a darker crust color, look no further.

Tom Lehmann/The Dough Doctor

559

/ Re: NY Style with spiral mixer

Previously answered in response to your email.

Tom Lehmann/The Dough Doctor

560

/ Re: help finding a homemade "philly cheesesteak" bun/roll recipe

I think 5% additional dough absorption would be a good place to start. For all practical purposes, there is NO difference in performance between CY and IDY or even ADY for that matter when each is used at the correct substitution level. IDY will provide overall more consistent performance than CY and it also has a much longer shelf life. A good many of us here have transitioned to IDY. I for one, can't even tell you when I last used CY.

Tom Lehmann/The Dough Doctor

561

/ Re: Please help my white pizza bottom!! Should I consider a baking steel/stone?

There's your problem. If the flour is NOT malted in some way at the mill you need to bake your pizzas at temperatures over 750F/399C if you expect to get any crust color on your pizzas.

All is not lost though, you can either add a small amount of diastatic (enzyme active) malt (about 0.25% of a 20L diastatic malt powder, if you cannot get that let us know what you have access to and one of us here can tell you how much to use. You can also just add some sugar to the dough formula. At your oven temperature I'd suggest 3% sugar for starters to see if that gives you a decent crust color.

Tom Lehmann/The Dough Doctor

562

[/ Re: help finding a homemade "philly cheesesteak" bun/roll recipe](#)

One other thing, it looks like the final proof was too dry and or the dough absorption was too low for your specific flour.

Tom Lehmann/The Dough Doctor

563

[/ Re: help finding a homemade "philly cheesesteak" bun/roll recipe](#)

Not too bad for the first horse out of the gate. :)

The next time you make them form them with blunt ends and allow to final proof for a longer time.

Here is the correct way to form them:

Form the dough piece into a rectangle about 10-inches wide and 1/4-inch thick, fold the two ends so they just touch in the middle, and roll up like a jelly roll, set aside (seam side down) to rest for a few minutes, then roll them under your palms to 8-inches in length, place onto pans for final proofing with the seam side down.

Note: If the dough doesn't roll well LIGHTLY dampen the work surface with water and lightly moisten your hands. Like everything else, practice will make perfect.

Tom Lehmann/The Dough Doctor

564

[/ Re: Cornicione](#)

The main factors are:

Maximize dough absorption.

Optimize dough fermentation.

Open the dough into a skin by hand and do it properly.

Correct baking temperature for the type of crust being made.

Tom Lehmann/The Dough Doctor

565

[/ Re: Please help my white pizza bottom!! Should I consider a baking steel/stone?](#)

The top crust doesn't look like it has much color either. Are you using a "00" flour?

Tom Lehmann/The Dough Doctor

566

[/ Re: help finding a homemade "philly cheesesteak" bun/roll recipe](#)

Re-read.. "immediately before you place it in the oven".

Tom Lehmann/The Dough Doctor

567

[/ Re: Hand mixing vs Commercial mixer](#)

"Purdy, purdy, purdy"! :drool:

Try mixing at low speed to incorporate the ingredients for about 2-minutes, then go to the next higher speed for the actual development of the dough. Be sure to mix the dough to a point where its "JUST" beginning to take on a smooth appearance.
Tom Lehmann/The Dough Doctor

568

/ [Re: My dough burnt, why?](#)

Warm water? Hand warm water ???

In all of the testing that we did with our students we found that "hand warm" water was actually too warm/hot. Your skin temperature is just under 98.6F so "warm" would be even hotter. Typical dough water temperature is around 75F. There is a possibility that your dough temperature is too hot which results in a sticky dough condition at the very least. Time to break out the old thermometer. :-D

Tom Lehmann/The Dough Doctor

569

/ [Re: help finding a homemade "philly cheesesteak" bun/roll recipe](#)

Let us know how it turns out with the higher yeast level. Be sure to make a few diagonal "French" cuts across the top of each bun immediately before you place it in the oven as this will allow for more uniform expansion of the dough, especially with the high yeast level.

Tom Lehmann/The Dough Doctor

570

/ [Re: How to get consistent](#)

IDY does need to be per-hydrated when the dough is to be mixed by HAND, but it is not necessary when the dough is to be mixed by MACHINE. Also, IDY does not need to be activated as ADY does. Notice that I said to suspend it in a small portion of 95F water, as soon as the yeast is suspended it can be added to the dough water (you don't need to wait 10-minutes to activate the IDY as you do for ADY)

Details, details, details! :-D

Tom Lehmann/The Dough Doctor

571

/ [Re: Trying to Tweak An "Ultimate Pizza Dough Recipe"](#)

Ditch the "eyeballing" suspend the yeast in a known quantity of water and subdivide. For example, if you want 0.5-gram of yeast just put 1-gram into 99-grams of water (95 to 100F) stir well to suspend the yeast, then measure 50-grams of the suspension and you will have something very close to 0.5-gram of yeast. Be sure to include the water in the suspension as part of the total dough water.

Tom Lehmann/The Dough Doctor

572

/ Re: help finding a homemade "philly cheesesteak" bun/roll recipe

NO! Use IDY at only 40% of the CY amount (weight). To use the IDY just add it dry right on top of the flour.

Tom Lehmann/The Dough Doctor

573

/ Re: Hand mixing vs Commercial mixer

What kind of mixer are we talking about? A picture of the mixer and mixing attachment would be helpful.

Also, how are you mixing the dough? Speed and time? What is the finished (mixed) dough temperature?

Tom Lehmann/The Dough Doctor

574

/ Re: Crust Full of Air

From what is being described, I have only seen something like this once before and it was the result of a very hot and weak dough.

We really need to see your dough formula and dough management procedure and be sure to include the dough temperature after mixing and at points along the way. If your dough is getting to a temperature of 90F/32.2C or more at any time this would validate the above as a potential cause.

Tom Lehmann/The Dough Doctor

575

/ Re: How to get consistent

First of all, it doesn't appear that you are suspending the IDY in a small portion of 95F water prior to addition to the dough. Second, you don't say if you are covering the container when you place it in the fridge (you should oil the top of the dough and leave it UNCOVERED until the internal dough ball temperature reaches 50 to 55F (I normally target 50F, just be consistent with the temperature), after the dough ball reaches the targeted temperature cover it and kiss it good night. When removing the dough from the fridge you should leave it in the fermentation container (still covered) and allow the dough balls to warm to 55 to 60F (internal dough ball temperature) before opening them into skins.

Try these changes to your process and let us know if you see any improvement.

Tom Lehmann/The Dough Doctor

576

/ Re: Air bubbles to big

While some will use a "bubble popper" to deflate the bubbles as they begin to form (my bubble popper is nothing more than a piece of 6.5-mm diameter aluminum rod with a 90 degree bend on one end leaving a 50-mm leg which I ground a point on, the other end is bent into a "U" shape to form a handle). Most pizzerias will have

one of these hanging near their oven for use just in case a bubble might get out of hand. Some will also address the bubble issue from a dough formula/dough management procedure aspect. In your specific case, while you didn't provide any information on actual dough temps, I tend to agree that the issue might be due to an over fermented dough condition. To test this theory make another dough using a 25% reduction in total fermentation time. To do this just reduce the fermentation time by 25% at each of the fermentation stages. If you see an improvement you can fine tune the fermentation further, if not we will have to look at things from a different perspective but we'll need to know what the dough looks like after each fermentation stage as well as internal dough temps from mixing until you're ready to open the dough into skins for dressing.

Tom Lehmann/The Dough Doctor

577

/ Re: Crust Full of Air

There are those here that might be willing to do a DIY home root canal for those characteristics! :-D

But since you asked;

Mix the dough for an additional 3-minutes.

Reduce the dough absorption by 5%

Reduce the yeast by 25%

With these changes you should see more of a bread like crumb structure in your finished crusts.

With all of that said, it would help to know what your present dough formula and dough management procedure is, but lacking that information give the above a try and let us know if you see any improvement.

Tom Lehmann/The Dough Doctor

578

/ Re: help finding a homemade "philly cheesesteak" bun/roll recipe

I've also got a good Hoagie bun formula and procedure posted in the Recipe Bank at the PMQ web site <www.pmq.com>.

Tom Lehmann/The Dough Doctor

579

/ Re: Trying to Tweak An "Ultimate Pizza Dough Recipe"

In preparation for your experiments to improve your pizza I would highly suggest that you first purchase a good electronic scale that can be used to weigh your ingredients allowing you to convert your "recipe" into a dough formula based on actual weight measures as opposed to volumetric portions. Also pick up a simple dial/stem type thermometer as it will come in handy for setting your water temperature and measuring dough temperature. With these two handy tools you'll be ready to have fun getting the finished pizza characteristics that you're looking for.

Tom Lehmann/The Dough Doctor

[/ Re: My dough burnt, why?](#)

The stickiness was most likely the result of the hand kneading process which resulted in an under mixed dough condition. You might try using an autolyze made with all of the water and 75% of the flour. Allow it to hydrate the flour for 1-hour and then add the remainder of the dough ingredients and begin your hand mixing and kneading process.

Without knowing more about your dough formula and process that's about the best advice I can offer for now.

Tom Lehmann/The Dough Doctor

21

[/ Re: Guaging Fermentation](#)

Additionally, while the yeast may be semi-dormant in the fridge the flour is still being subjected to the by-products of fermentation (think of like marinating a tough cut of meat) which will have a profound effect upon the dough and crust characteristics after the cold fermentation period. For most of us, we are cold fermenting our dough to achieve certain desired characteristics but we are not typically fermenting the dough to a point where failure is immanent with a little additional fermentation or if the finished dough temperature is a little off the mark so while an additional day in the fridge won't usually result in a catastrophic failure of the dough it certainly will affect some of the dough and finished product characteristics, just not to the point where an unacceptable pizza was the end result.

Tom Lehmann/The Dough Doctor

22

[/ Re: Noob question...orange oil on cheese?](#)

What kind of flour are you using?

What is your dough formulation?

Tom Lehmann/The Dough Doctor

23

[/ Re: on fat : oil, margarine, vegetable shortening, butter](#)

It's not the fat that retains the gas in yeast leavened dough systems be it for bread or donuts, all the fat does is lubricate the dough for ease of expansion and coat the individual cells for better gas retention. In making butter cream icing as well as many types of cakes the fat does play an important role be entrapping air to provide a nuclei for the crumb structure development, but not in yeast leavened products, not even in sweet dough which can contain as much as 24% fat. Just for the record, low ratio cakes will typically contain fat (as a plastic fat) at an amount at least equal to that of the flour or 100%.

Tom Lehmann/The Dough Doctor

24

/ Re: Using A Lievito Madre Plus Yeast

Since there is no real way of knowing the strength of it I'd suggest using it at maybe 10% and start out with 0.1% IDY addition and make the necessary corrections from there.

Tom Lehmann/The Dough Doctor

25

/ Re: Is high gluten flour necessary for a pizzeria pizza dough recipe?

OK, if you say so. We will always make the best product using that which we have the greatest confidence in. :chef:

Tom Lehmann/The Dough Doctor

26

/ Re: Dusting the ball with flour vs. water

Yael;

I used to do that myself when handling extremely high absorption doughs but changed over to using a little oil on my hands years ago.

Tom Lehmann/The Dough Doctor

27

/ Re: Is high gluten flour necessary for a pizzeria pizza dough recipe?

PizzaCalcio;

In what way is spring wheat flour a lower quality flour? Just curious as to what your thoughts are.

Tom Lehmann/The Dough Doctor

28

/ Re: Using A Lievito Madre Plus Yeast

How old is the starter? Under what conditions are you storing it?

Tom Lehmann/The Dough Doctor

29

/ Re: Is high gluten flour necessary for a pizzeria pizza dough recipe?

No, high protein (13 to 14.5%) flour isn't necessarily needed in a commercial pizzeria environment. Your decision on flour protein content will depend upon the following:

Type of pizza you're making.

Type of store (DELCO or dine-in or both)

How long you want to hold the dough for and under what conditions.

The dough management procedure you use.
The manner in which the dough will be opened into a skin.

One type of flour that I never recommend for use in a pizzeria is all-purpose flour (AP flour), the reason for this is because there is no one accepted identity for all-purpose flour. Because of this it can be made from a blend of strong wheat varieties giving it the performance properties of a pretty decent bread type flour while at the same time other manufacturers see it differently and make it from varieties of soft wheat or even a blend of hard and soft wheat varieties. The fact is that if you buy an AP flour from one manufacturer it may or may not perform the same or similarly to that from another manufacturer. Flours that are sold as "bread" flour have an intended purpose (to make bread) and all of the milling companies mill their bread type flours to be very similar to that of their competition so if you had to change suppliers (like that has NEVER happened) you wouldn't see much, if any, change in flour performance. Once you enter into the realm of "bread" type flours there are flours of different strength and these are differentiated by their protein content with the lower protein content flours being the weaker (10.5 to 11.8%) and the higher protein content flours (13.4 to 14.5%) being the strongest. Right in the middle you have the flours with 12 to 12.8% protein content which many (myself included) look at as being a good, all around pizza flour. You can go with a higher protein flour but you will pay more for it and you should have a specific reason for using it (like a New York style pizza which is chewy) or if you will be a DELCO operation chewy is a bad word so by opting to use a lower protein flour in the 10.5 to 11.8% protein range you can reduce some of the chewiness.

Tom Lehmann/The Dough Doctor

30

/ [Re: Guaging Fermentation](#)

The main byproducts of fermentation that we're concerned with are carbon dioxide, alcohol and acids (acetic, lactic and propionic) plus the necessary time for amylase and protease enzymes to do a little of their magic too. All of these combined, give us a finished dough with specific handling properties and a finished (baked) crust with certain targeted flavor and physical characteristics that we are trying to achieve. While many dough recipes and formulas do say to allow the dough to "double in size" this can be hard to ascertain in view of the wide range of dough absorption that can be employed in making the dough, for example, a 70 or 75% absorption dough will not visually look the same after "doubling in size/volume" as a 55% absorption dough would. What you are proposing I think would be assuming that a colder dough, if allowed to ferment long enough to double in volume would be the same as a warmer dough that has doubled in size (maybe I'm wrong on that?) but the truth is that the colder dough would be different from the warmer fermented dough even though they are both at the same volume, the reason being that the colder temperature has slowed or stopped the enzymatic activity and the ratio of those three main acids of fermentation will have changed which results in a different finished product flavor profile. I think it would be safe to say that there are just too many different things happening during the fermentation process to go by the volume of the dough alone.

Tom Lehmann/The Dough Doctor

/ Re: Dusting the ball with flour vs. water

If slimy is less sticky...OK? In my world a little dusting flour makes my dough feel a lot less sticky than water and what are you going to do with a wet, slimy dough ball, aside from making a giant dumpling out of it?

The change in the % dough absorption is easy to calculate with either dusting flour or "water". Just weigh the dough ball before putting it into the dusting flour or water, then weigh it again after putting it into the dusting flour or water, this will give you the weight gain in of the dough ball due to the flour or water. Now, divide the dough ball weight by the sum of the total bakers percent after dividing it by 100 (easy to do by just moving the decimal place two places to the left). This will give you the flour weight in the dough ball. Lastly, divide the dough ball weight gain by the flour weight in the dough ball and this will give you the percent increase in absorption for the water or add it to the flour weight and divide the dough absorption percent by the new flour weight to find the impact on dough absorption that the added flour weight had.

Aren't you glad to didn't sleep through math class? :-D

Tom Lehmann/The Dough Doctor

/ Re: Coach my (non-existent) kneading skills.

If you will search back in the archives for discussions on biochemical gluten development it will help you understand gluten development. I used to teach home pizza making to residents here in Riley County, KS on weekends during the summer months. The only tools that were needed to make the dough were a suitably sized bowl and a wooden spoon. We mixed the dough using just a wooden spoon (has to be wooden) this way everybody knew when to stop mixing (when one was in fear of breaking the spoon it was time to stop mixing). The dough was then scraped out of the bowl onto a lightly oiled counter top, it was pulled and stretched just a couple of times to allow it to be formed into something resembling a ball, this was then placed back into the bowl which had been lightly oiled, a piece of plastic (Walmart bags were pretty commonly used) was placed over the container to prevent drying, the dough was allowed to ferment for 90-minutes, it was then turned out of the container onto a lightly dusted surface and kneaded/stretched just a few times (less than a minute) and placed back into the container to continue fermenting for another 90-minutes, the dough was then turned out of the container again and cut into four pieces, each piece was gently formed into a ball (care was taken so as NOT to stress the dough. The dough balls were covered with the same piece of plastic that was used to cover the fermenting dough and allowed to rest for 30-minutes, each dough ball was then opened into a skin by demonstrated methods (rolling pin/pastry pin/hand stretching), they were then dressed and baked in the home oven that was available in the host's kitchen. Everyone was amazed at how easy it was to make the dough (NO STRENUOUS KNEADING) and no watching the clock as all of the fermentation periods are VERY flexible so it's something that can be done on the side while you're busy with other things in your daily life.

For toppings I asked each participant to bring with them anything from hot dogs to hamburger to left overs in the fridge. This gave them the ability to use pizza as one might think of hash (a place to use left overs). At the end of the session there

wasn't a bad pizza, nor a hungry person in the group.

Too many time we over think the process of making pizza and become intimidated by our own thoughts, as you can see from the above process it really isn't that difficult to make a basic pizza. Once you have mastered the basic pizza you can then branch out and explore making other types of pizza by different and more involved dough making processes. Remember the evolutionary progression of learning to sit, butt scoot, crawl, table surf, walk, trot, run but only after that can you branch out into long jumping and pole vaulting. Making pizza follows a similar progression, hopefully on a faster track. :-D

Tom Lehmann/The Dough Doctor

33

/ [Re: Small batches](#)

And then there's the 5-second rule.

For those who don't know what that is:

If no one is looking and you can pick it up off of the floor in less than 5-seconds it never happened. >:D >:D >:D

Tom Lehmann/The Dough Doctor

34

/ [Re: Which herbs/vegetables are worth growing?](#)

For us its sweet basil, tomatoes, bell peppers, sweet banana peppers, chives, and our staples are potatoes, snow peas, radishes, Blue Lake beans, beets, turnips, and Swiss Chard (all grown for the greens) and our winter favorite butternut squash.

With the exception of the snow peas and squash everything is grown in large plastic tubs that once held calf starter feed. Our driveway is a little over 90-feet in length and I have one entire side of it lined with the growing tubs and in addition we have a fenced off garden area in the back yard. If you add in our gooseberry and blackberry bushes, apple, peach, pear and apricot trees along with a couple of deer that I take every year we are pretty self sufficient food wise.

Because we do essentially all container growing the garden is really easy to care for and to harvest from, but then there's all the preserves to make and fruit to dry and that alone will take almost 6-weeks out of our lives every year. In the winter though it's nice to sit back and enjoy that summer and fall harvest while watching the snow fall, knowing that as soon as it stops I'll be out plowing our cul-de-sac and neighbor's driveways.

When you get to be 78-years old you've got to look for things do to keep out of trouble! ;D

Tom Lehmann/The Dough Doctor

35

/ [Re: How many times do you reuse your frying oil?](#)

Scottr;

Yup, there's your answer. ^^^

Tom Lehmann/The Dough Doctor

36

/ Re: Small batches

When we were doing research on dough we were always hesitant to use doughs made with less than 500-grams of flour weight because they were difficult to scale accurately, did not interact in the mixers in the same manner as a larger sized dough did and only provided a single test sample (you need at least 3 samples per batch to have any confidence in the results you're getting), and that is why I'm not a fan of making very small size doughs.

Tom Lehmann/The Dough Doctor

37

/ Re: Coach my (non-existent) kneading skills.

First off, why such a small dough size? Go with a dough sized 5 to 10 times that size. It looked more like you were trying to ball the dough than to knead the dough. The larger size dough will be a lot easier to knead than such a small dough. Consider this, you mentioned "mixing" the dough so it sounds like you have a dough mixer. Normally the dough is not kneaded after mixing but if you want to it only needs to be kneaded for a couple of minutes, not 10 minutes as I heard mentioned. With the larger dough size you can let the weight of the dough ball work for you or you can practice bench kneading the dough, this is where the dough is placed onto the bench and pulled/stretched then laid back upon itself numerous times, there are some good videos I'm sure, which will demonstrate this method of kneading.

You really need to make a bigger dough to practice kneading ;D

Tom Lehmann/The Dough Doctor

38

/ Re: How many times do you reuse your frying oil?

Keeping the fat clean does help but I'm betting that the length of time the fryer is used has more to do with it. If you fire up the fryer and leave it at 365F all day long the fat will tend to go rancid faster than it would if you just fire it up to use it for an hour or so each time. The actual type of fat also plays a HUGE part in determining how fast the fat will go rancid.

Tom Lehmann/The Dough Doctor

39

/ Re: The reasons for different types of dough

Dough absorption is ALWAYS based on just the water, never the water + oil. The oil should always be shown in the dough formulation as an ingredient percent based on the weight of the total dough flour aka bakers percent. With that said, since oil is a liquid it will possess the ability to alter the viscosity of the dough at high levels, for this reason we will take into account the amount of oil being used in the dough as an added ingredient when determining the dough absorption to be used.

Regarding your last sentence, I think that was in reference to making pizza using

commercially frozen dough.
Tom Lehmann/The Dough Doctor

40

[/ Re: adding salt too early??](#)

The dough should feel "lively", as opposed to like putty but it should not have large gas bubbles in it either because these will manifest themselves in the finished donut too.

Tom Lehmann/The Dough Doctor

581

[/ Re: Replacing AP with All Trumps?](#)

No, just mix the dough until it begins to take on a smooth appearance, the amount of mixing you put into the dough will have no impact upon the toughness/chewiness of the finished crust BUT it can/will impact how the dough handles. By the way, I've never had to proof a pan dough for more than about 75-minutes on the outside, most are in the 45 to 60-minute range. If I'm in a pizzeria where we're making a lot of pizzas we proof for only about 20-minutes and then take to the cooler where they continue to proof to the required height and then go into hibernation until needed, this way we can use them directly from the cooler. That's how P.H. used to make all of their pan pizzas at one time so it's not a new process. If your yeast level is too low it's possible that you can end up with a dreaded gum line just under the sauce which is why we don't like to manage fermentation by reducing the yeast level.

Tom Lehmann/The Dough Doctor

582

[/ Re: Replacing AP with All Trumps?](#)

Proofing comes after the dough is placed into the pan, I think you are referring to fermentation?

The very first item on my list of suggested changes was indeed "longer fermentation " time.

Due to the higher protein content the dough will require a higher dough absorption and you will still need to allow the dough to ferment for a longer time to help "mellow" condition/break down, some of that protein, failure to do so will result in a dough that is tougher, more elastic and harder to work with. It will also exhibit more dough memory characteristics when you are trying to shape the dough to the pan. With proper adjustments to the dough formula and dough management procedure you can get your All Trumps flour to perform similarly to the 11% protein all purpose flour.

Tom Lehmann/The Dough Doctor

583

[/ Re: Fermentation timing factors](#)

Absolutely! The temperature rise is due to the heat of metabolism resulting in a temperature gain of approximately 1F per hour.

Tom Lehmann/The Dough Doctor

584

/ [Re: Doubling NY style dough recipe?](#)

Dough "recipes" based on volumetric portions such as teaspoons, tablespoons, cups, coffee cans, etc., typically have to be modified in some way when increasing or decreasing the size of the dough/recipe but dough "formulas" which are expressed in bakers percent and based on weight measurements such as pounds, ounces, kilograms, grams, etc., can be easily manipulated in size without any dough formulation changes. This is but one reason why the majority of pizza makers here work with dough formulas as opposed to dough recipes.

If you want to learn more about bakers percent I'm sure a search of archived posts will provide additional information, I've also written articles of the use of bakers percent too.

Tom Lehmann/The Dough Doctor

585

/ [Re: on fat : oil, margarine, vegetable shortening, butter](#)

Stainless steel like the one in the lower right hand corner. DO NOT take the donuts off of the screen, instead place the donuts and screen all into the frying fat (about 100-mm deep, the donuts will float off of the screen on their own, then use your frying sticks to turn the donuts. If you put handles onto the screen you can just lift the screen out with the handles and the donuts come along for the ride, allow to dip for a minute (literally) and apply glaze to the donuts (they should still be so hot as to be unpleasant to hold in your hand).

Tom Lehmann/The Dough Doctor

586

/ [Re: Fermentation timing factors](#)

Not that I'm aware of.

Tom Lehmann/The Dough Doctor

587

/ [Re: Replacing AP with All Trumps?](#)

The A.T. flour is one of the highest protein flours we typically work with as it is 14+% protein content. Not knowing the protein content of your AP flour (the nutritional panel on the bag will give you a good indication of what it is) I can't be too specific on the changes but I would expect the following:

Longer fermentation time.

Increased fat level.

Increase in dough absorption.

More rest times or a longer rest time needed when fitting the dough into the pan.

Tom Lehmann/The Dough Doctor

588

/ [Re: Fermentation timing factors](#)

A small amount of sugar will provide a very slight increase in the fermentation rate, but after that it will slow it down but sustain the yeast for a longer fermentation time.

Tom Lehmann/The Dough Doctor

589

/ [Re: Creating something new and standardised.](#)

IDY, ADY and CY all perform essentially the same when used at the correct substitution levels so there is no real difference between them. Many people prefer to use IDY due to its ease of use, long shelf life, and uniformity. Mixing times normally run around 8 to 10-minutes but this is HIGHLY variable and dependent upon the type of mixer being used as well as the type of agitator the mixer is equipped with.

Just mix the dough until it begins to take on a smooth appearance, that's all the mixing you need for a pizza dough.

Tom Lehmann/The Dough Doctor

590

/ [Re: How do I modify my pizza making if I have active dry yeast for bread machines?](#)

If you have ADY pre-hydrate and activate it prior to addition to the dough. Put the ADY in about 5 times its weight of 100F water (use a thermometer), stir to suspend the yeast in the water and allow to activate for 10-minutes, then stir well and add to the dough water, rinse out the container in the dough water too and you're ready to go.

Tom Lehmann/The Dough Doctor

591

/ [Re: Active dry yeast vs fresh yeast ratio?](#)

To replace ADY with CY use twice as much CY.

By the way, the ADY really should be pre-hydrated and activated in 100F water prior to addition to the dough to get the best performance from it. IDY can be added just like CY, just add it right on top of the flour as long as you are machine mixing, if you're hand mixing the IDY needs to be pre-hydrated in 95F water (no need to activate) prior to addition to the dough.

Tom Lehmann/The Dough Doctor

592

/ [Re: Over Worked Dough?](#)

I agree with Foreplease, that the dough balls needed more rest time. Whenever you encounter something like that just step back and give the dough more time, it will eventually relax and open very easily.

Tom Lehmann/The Dough Doctor

593

/ Re: Fermentation timing factors

I think I'll rack this one up to another "Don't believe everything you read on the internet". You use a fridge, at accepted refrigeration temperatures (34 to 40F) because you want to significantly slow the rate of fermentation to allow holding the dough in a viable condition for a period of time (hours to days). Due to the insulating properties of the dough placing it in the fridge will not just immediately stop the fermentation process like turning off a light switch, but it will significantly slow it allowing for gradual fermentation as well as time for the acids and enzymes associated with the fermentation process to work on the dough to develop flavor. The higher the storage temperature the faster the fermentation rate. A wine fridge at 50F WILL NOT slow fermentation as well as a refrigerator at 38F. This doesn't mean that a wine fridge cannot be used to store dough in, it certainly can, just like you can store the dough at room temperature if you want to BUT the dough has to be specifically formulated to allow for this, just like you have to specifically formulate the dough if you want to hold it at room temperature. One also has to be cognizant of the fact that when the dough is fermented at different temperatures you will get a different flavor imparted to the finished product. Remember that temperature is the "driver" of fermentation, all things equal, the higher the temperature the faster the rate of fermentation, that's a fact of life, and it also explains why the dough showed more signs of advanced fermentation when stored in the wine cooler (50F) than it did previously when stored in the fridge after the same fermentation time.

Tom Lehmann/The Dough Doctor

594

/ Re: Does my dough look "off" after Kitchen Aid and folding?

Can you mix your dough at a higher speed? At a higher speed centrifugal force will pull the dough off of the hook providing better mixing action.

Tom Lehmann/The Dough Doctor

595

/ Re: Does my dough look "off" after Kitchen Aid and folding?

Dough is typically a bit more sticky and may tend to tear a bit more but otherwise manageable.

Tom Lehmann/The Dough Doctor

596

/ Re: Fleischmann's 1/2s pizza crust yeast?

The yeast is for leavening and the L-cysteine is for making a dough that is easy to mix and exhibits little or no dough memory/snap-back when opening the dough into a skin without any real fermentation time on the dough. If it were me, I'd have formulated that product using glutathione aka dead yeast instead of L-cysteine, that way it would not have shown up on the label, or at the very least it would have had to be labeled as containing both live and dead yeast cultures, either way it would sound a lot more consumer friendly.

Probably wouldn't hurt to have a few packets of this stuff on hand just in case you want to experiment with making a short time dough, like a equal amounts of the Pizza Yeast and regular yeast in conjunction with a total fermentation time of 4 to 8-hours as opposed to 24 or more hours.

Tom Lehmann/The Dough Doctor

597

[**/ Re: Does my dough look "off" after Kitchen Aid and folding?**](#)

31 and you got feed back. :-D

Tom Lehmann/The Dough Doctor

598

[**/ Re: Does my dough look "off" after Kitchen Aid and folding?**](#)

Regardless of how long the dough was mixed, it is still under mixed. Do you have a plain "J" aka "C" hook or do you have a reverse spiral dough arm for your mixer? Unless you have a reverse spiral dough arm you may never be able to mix a small size dough and achieve any significant level of gluten development. Remember, you should not go by a time recommendation, instead always mix just until the dough begins to take on a smooth appearance.

Tom Lehmann/The Dough Doctor

599

[**/ Re: I need some help altering my dough recipe to cook at a higher temperature.**](#)

I'd like to help you but I really need to know what you are presently doing so I can make some effective recommendations. Please provide your complete dough formula and dough management procedure (be sure to include all times, temperatures, dough weights and pizza sizes). In any deck oven the best you are going to get is about a 7 to 8-minute bake, and this might be stretching it a bit.

Tom Lehmann/The Dough Doctor

600

[**/ Re: on fat : oil, margarine, vegetable shortening, butter**](#)

You should not be proofing the donuts on paper, this is why we always proof our donuts on a tight mesh 6mm X 6mm wire screen as this allows for air circulation to the bottom side of the dount. I also think you would be better served having more oil in the frying wok. The donuts DO look a lot better now! :chef:

Tom Lehmann/The Dough Doctor

601

[/ Re: Dough management question - sough dough starter](#)

When you say the dough was hard to open, in what way was it hard to open? From your pictures it looks as if it should have been pretty easy to open at 24-hours. You also mention that you mixed the dough until it came together as a ball but it appears that you did not mix it until the dough just began to take on a smooth appearance, this would explain a sticky dough off of the mixer and the roughness as well as tearing seen in the first dough ball picture. If you are experiencing an excessively soft and weak dough condition it is entirely possible that your starter is stronger than you might think it is so you would need to use less to compensate for this.

Also, regarding your dough formula, when showing the ingredient percentages you should be showing the total dough absorption percent in bakers percent. You are showing it in "true %" but not in bakers %. Bakers % for absorption = total weight of all water added to the dough divided by the total flour weight in the dough (do not include the flour in the starter) X 100.

Tom Lehmann/The Dough Doctor

602

[/ Re: question about Doughmate artisan box size](#)

A lump or ball of dough will not cool down very well at all, especially if it is HOT. I suggest flattening the dough out as much as possible making it thinner and with a greater surface area, it will cool faster and more thoroughly thus preventing more damage to the dough due to over fermentation.

Tom Lehmann/The Dough Doctor

603

[/ Re: yeast](#)

Go to Italy and/or Egypt and start a sourdough starter using spelt (the most commonly used grain in the region in "ancient" times), and hopefully whatever you get growing will be similar to what might have been fed to those who were building the pyramids, or painting pictures on walls, but keep in mind that environmentally, things have changed over the last 2,000-years or so it's still going to be a bit of a crap shoot if you end up with something original or not.

Tom Lehmann/The Dough Doctor

604

[/ Re: Making bagel dough with 00 flour](#)

We made them all the time, just use a HIGH COLOR CHEDDAR CHEESE POWDER and add it right on top of the flour just like any other dry ingredient, then mix the dough in the normal manner. I'm betting that you didn't add the necessary additional water to compensate for the dry cheese powder..right? I don't remember what the water correction was for the cheese powder but you can determine it for

yourself very easily by placing a known weight in a small bowl and SLOWLY adding water while stirring JUST until a thick paste is formed, then divide the weight of water added by the weight of the cheese powder and multiply by 100. This will give you the percent additional water to add based on the weight of cheese powder you're adding. For the product that we were using 5 to 8% worked pretty well for us.

By the way, this is the same cheese powder that is used on Cheetos. When you look at it you will say "No Way!" the stuff is almost fluorescent, but trust me, nothing else will give you the color you're looking for. Flavor, like you said, it ani't nothin' to write home to Mama about.

Tom Lehmann/The Dough Doctor

605

/ [Re: Creating something new and standardised.](#)

In that case I think this may be your best approach;

Prepare a sponge (50% of the flour and 50% of the total dough absorption/water weight plus 1/3 of the total yeast). Use 70F/21C water, mix for 4-minutes (target temperature is 75 to 78F/23.8 to 25.5C) and set aside to ferment at room temperature for 4-hours.

Add fermented sponge to the mixing bowl along with the other ingredients (except for the oil), mix at low speed for 2-minutes and add the oil gradually, continue mixing at low speed for another minute then mix at medium speed for 5 to 8-minutes or just until the dough takes on a smooth appearance.

From this point process the dough as you normally do.

Note:

I do not recommend using semolina flour or any of the "additives" mentioned at this time.

If you want the dough to proof/rise faster in the pan increase the dough temperature, do not increase the yeast any more than what it already is. 5% CY is a LOT of yeast.

Your dough as you have presented is is severely lacking in fermentation which is why I'm suggesting the use of a fermented sponge to provide additional flavor and dough conditioning.

If you need more crust color you will need to increase the sugar level (see my previous recommendation).

You are baking your pizzas at 500F,if you are trying to make a pizza similar to P.J.s have you tried using 450F like P.J. s does?

Tom Lehmann/The Dough Doctor

606

/ [Re: question about Doughmate artisan box size](#)

Thar's the reason why I like to ball immediately after mixing, place into box, wipe the top of the dough balls with oil and place them directly into the cooler/fridge. Once the dough has proofed like that it is hard to cool it down at a consistent rate so you end up with fermentation varied all over the board.

Tom Lehmann/The Dough Doctor

607

/ Re: New Oven Blues

Three things come to mind here;

- 1) Diameter of baking container (skillet/Dutch oven, not sure which you're using) as compared to the inside dimensions of the oven chamber.
- 2) Bottom heat only. Bread typically does not like to be baked with a lot of bottom heat (you just found that out) :)
- 3) Bad door seals allowing too much heat to escape from the oven.

Assuming you didn't use a shoe horn to get the pan in the oven we can set that one aside for now unless you have something to add?

Your IR thermometer should tell you if the door seals are sealing as they should, let's assume they are.

That leaves the bottom heat only explanation (#2). Here is a test for that theory, move one of the racks to a high position (hopefully you have more than one rack in your oven?) place some bricks/stones/ anything that will absorb a lot of heat and release and release it back into the oven. Preheat the oven (you will need to make sure the bricks, etc. are fully up to temperature) then place the bread in the oven and turn the temperature down to 400F. Allow the bread to bake (I'm guessing 20-minutes?) undisturbed before checking it. If you see any kind of improvement (no charred bottom and at least some top crust color) this would be an indication that you're on the right track. If not we'll need to rethink. When I used to make camp bread using my Dutch oven I used to put some hot coals on top of the lid to get the necessary top heat for crust color development.

Tom Lehmann/The Dough Doctor

608

/ Re: Creating something new and standardised.

Moneeb;

I see a number of issues here with what you are doing. The dough formula is out of balance as is the dough management procedure for a P.J. style of deep-dish pizza. Here is your dough formula in bakers percent along with suggested changes:

Flour: 100%

C.Y.: 5% (reduce to 1%/18-grams)

Water: 55.5% (adjust temperature to 60F/15.5C)

Oil: 5.5%

Salt: 1.38% (increase to 2%/36-grams)

Sugar: 0.5% (increase to 3%/54-grams)

Suggested changes to your dough management procedure:

Immediately after mixing cut into desired weight pieces, form into balls, lightly oil each dough ball and place into individual plastic bread type bags, pull the bag slightly snug to the dough ball and twist the open end into a pony tail, tuck the pony tail under the dough ball as you place it in the cooler to cold ferment for at least 24-hours. Remove from cooler and allow the temper AT (AT) room temperature until the internal dough ball temperature reaches 50F/10C, roll the bag down around the dough ball and invert the bag allowing the dough ball to fall onto a floured surface, flour both sides of the dough ball and shape to fit the pan, place into a dark colored, deep-dish pan that has been well oiled, cover the pans and allow to final proof/tide until the dough has risen about 1/2-inch/12.5-mm, then place in the fridge for storage until needed. Note: The panned dough will not keep

from one day to the next. You can incorporate any left over risen dough into fresh dough if the amount does not exceed 15% of the fresh dough weight, or you can make it into another product like bread sticks or garlic knots.

Question: What is a "convertible" conveyor belt oven? Do you mean an air impingement oven?

Tom Lehmann/The Dough Doctor

609

/ [Re: Haircuts in an Age of Lockdowns and Self-isolation](#)

Peter;

Now's the time to give it a "whirl". Even if it ends up looking like the dog chewed your hair off nobody will even notice, that seems to be the new fashionable look today, and if anybody should comment, just tell them it's the new "social distancing" look. :-D

Tom Lehmann/The Dough Doctor

610

/ [Re: Making bagel dough with 00 flour](#)

12% protein should work OK for you. Cover = apples: Uncovered = bagels

When you make them be sure to cover a few to see for yourself.

I was once on the precipice of being charged with manslaughter during one of our bagel classes after I asked one of our students to take a full rack of just formed bagel dough to the retarder/cooler, little did I know that when he did so he also covered all of the racks of dough with rack bags, by the following morning the hole has all but disappeared and when they baked they actually rolled over! Being the instructor I had to retain my composure so we made it into a "learning lesson", not wanting to lose several hundred bagels I said, "Let's try something different to see what happens", I fired up one of our air impingement ovens (375F) and we baked a few of the "bagel bombs" just to see what would happen. You have heard me say many times that we can learn from our mistakes as well as our successes, well those bagels turned out ABSOLUTELY BEAUTIFUL, great shape (small hole more like a steamed bagel) but otherwise great! If there was a complaint or fault with the bagels it was with the color/appearance of the bagels after baking, they had a bright shine (more like that on a pretzel) and they looked almost like a plastic bagel. We found out later that this was the first successful baking of bagels in an air impingement oven. Why? Because prior to this everyone was following the correct dough management for making bagels. It's ironic that both bagels and pretzels are theorized to have been made accidentally when the baker's formed dough piece/pieces fell off of the oven peel and landed in the bucket of water used to swab out the oven. So another accident took the bagel to yet another level.

Tom Lehmann/The Dough Doctor

611

/ [Re: Haircuts in an Age of Lockdowns and Self-isolation](#)

I've sported a full beard (for over 20-years now) and a flat top (something you don't see too often these days) since the 60's. Many barbers today don't even know how

to cut a flat top so I'm getting ready to change over to a crew cut when my flat top gets too shaggy. When I do, that'll probably be the end of my visits to a barber shop.

Tom Lehmann/The Dough Doctor

612

[/ Re: Making bagel dough with 00 flour](#)

To use powder in place of syrup use 80% as much powder as syrup. Like the name implies it's a "basic formula", sure, you can add some non-diastatic malt powder to replace the sugar in the dough formula if you want to, not a problem.

Tom Lehmann/The Dough Doctor

613

[/ Re: Making bagel dough with 00 flour](#)

N.Y. style kettled bagels are typically made using a high protein content flour (13 to 14+%) which provides both the shape as well as the chewy eating characteristics. I've personally never made bagels using a "00" flour but there are many different types of "00" flour as well as the GM "00" type that you have. What is the protein content of your flour? That should tell a big part of the story.

Here is a basic bagel dough formula.

Flour: 100%

Salt: 2%

Sugar: 0.6%

Water: 53%

Yeast (CY) 0.75%

Mix: Mix in low speed for 2-minutes then in 2nd. speed if possible for about 10-minutes, if this is not possible mix for about 16-minutes in low speed. The dough is going to be VERY TOUGH.

Target finished dough temperature is 76 to 78F.

Take the dough to the bench, remove from bowl and allow to rest for 5-minutes. Then scale into 3-ounce pieces. After all of the dough is scaled begin shaping each piece into a rope about 6 to 7-inches long, wrap around your first three fingers to form a ring, then seal the two ends together (you can do this by rolling the formed bagel on the bench with the seam facing down. Place onto pans heavily dusted with corn meal, and place in the fridge for 24-hours (DO NOT, DO NOT COVER IN ANY WAY).

Remove the formed bagels from the fridge and allow to set AT room temperature for 20 to 30-minutes (DO NOT OVER PROOF).

Carefully place proofed bagels into boiling water to which 2.5% non-diastatic malt syrup has been added (2.5% based on the weight of the boiling water). The bagels will sink to the bottom of the water pot but should float in about 30-seconds. Allow bagels to boil for 30-seconds on each side then remove from the water using a screen or slotted spoon and place into a cold water bath for a few seconds, remove from the cold water and place onto an oiled parchment paper lined pan (a perforated pan is preferred, but lacking that you can bake on a solid oven deck or on a large pizza screen covered with the oiled parchment paper. Toppings can be applied at the time the bagels are about to be placed into the oven for baking. The bagels should be baked at 400F for about 20 to 25-minutes.

Tom Lehmann/The Dough Doctor

614

[/ Re: Flour and water](#)

The only real way to determine maximum dough absorption is by conducting a series of test bakes with each bake identical with the exception of a progressively higher dough absorption for each dough. I recommend increasing the dough absorption in increments of 2% until you reach a level where you either cannot handle the dough anymore or the dough fails to perform at giving you the finished product characteristics you're looking for.

The "W" factor has little to do with it.

Tom Lehmann/The Dough Doctor

615

[/ Re: Completely cover dough when proofing?](#)

It really doesn't require much at all, what you are probably observing is the effect of pressure on the dough which inhibits its height in the container. A larger size container will not demonstrate this as well as a smaller size container (assuming the same amount of dough in both containers and all things equal).

Tom Lehmann/The Dough Doctor

616

[/ Re: Completely cover dough when proofing?](#)

What it boils down to is that in our own homes we can pretty well do whatever we please, and if we get sick, well that's our problem but if you're a commercial food establishment let's see? How many people could you potentially sicken, or perhaps worse? That's where the issue is at.

When I was a kid growing up on the farm we used to make potato salad all the time, we never refrigerated it, just laid a towel over the bowl on the table for the next meal, think about that..POTATO SALAD! Most every summer I would get what we called the "summer flu", it wasn't pleasant but I always managed to live through it. It wasn't until I took my first class in food pathogens and food safety that I found out that it wasn't a summer flu (whatever that is) that I had, it was a plain and simple case of food poisoning, most likely due to staphylococcus aureus (staphylococcal food poisoning). It wasn't a big deal and it never made the headlines but today, if that were to happen in any food establishment we would be reading about it in headlines, that's the type of publicity that a food establishment really doesn't want which is why they usually do their best to take the necessary precautions to prevent this from happening.

Tom Lehmann/The Dough Doctor

Tom Lehmann/The Dough Doctor

617

[/ Re: on fat : oil, margarine, vegetable shortening, butter](#)

Yes, that's why yeast raised donut doughs are only bulk fermented for 1-hour.
Tom Lehmann/The Dough Doctor

618

[/ Re: Too watery fresh mozz](#)

Have you tried putting it on later in the bake?

Tom Lehmann/The Dough Doctor

619

[/ Re: Anyone ever tackle pull apart or rip apart pizza?](#)

We used to call them "pizza rolls". We make a variation of this at AJ's using just a piece of cheese and call them "cheese bricks". We got the idea from the Totino's Pizza Rolls back in the 60's.

Tom Lehmann/The Dough Doctor

620

[/ Re: Salt for a tougher dough?](#)

The enzymes and acids in the sourdough starter denature the proteins and while it is true that salt will strengthen the gluten forming proteins if they have been denatured there is nothing left to strengthen. True, all of the protein has not been denatured so you will get some strengthening, but probably not as much as you might be hoping for.

You might try adding 2 or 3% vital wheat gluten to see if that helps any.

Tom Lehmann/The Dough Doctor

621

[/ Re: Did I just ruin my baking Steel?](#)

This is one of those cases where dark is good and darker is even better!

Don't worry, you're good to go! :chef:

Tom Lehmann/The Dough Doctor

622

[/ Re: The effect of acids on dough strength?](#)

Ascorbic acid is very quickly converted to dehydro-ascorbic acid which is an oxidant, much like ADA (azodicarbonamide, or potassium bromate) but much faster acting. How fast? It has fully reacted before the dough leaves the mixing bowl, so look at AA as an acid in this application, instead focus on Lactic Acid, Acetic Acid, Citric Acid, Fumaric Acid, and the like.

After mixing the dough, how much fermentation (at what temperature) do you give the dough balls before opening into skins?

Your friend is correct about both mixing (mix just until the dough begins to smooth out, and don't try to make cannon balls out of the dough when rounding)

Tom Lehmann/The Dough Doctor

623

[**/ Re: Two Random Questions For The Dough Doctor**](#)

Rolls;

If you watch the dough being mixed in a food processor the blades do cut through the dough but at the same time the dough is being rolled around/moved, otherwise the dough would eventually be pureed. Additionally, those gluten strands that we talk about are really quite small and bond back together again very rapidly. This is the reason why doughs that are made by high speed mixing processes tend to be a little tacky or some might say sticky immediately after mixing but literally within seconds take on a more normal feel.

Tom Lehmann/The Dough Doctor

624

[**/ Re: A pizza question that's got everyone at work bamboozled**](#)

A man after my own heart! Use math!

3.9524 6-inch pizzas, you will have to decide who gets the one with less dough in the crust. :-D

Tom Lehmann/The Dough Doctor

625

[**/ Re: The effect of acids on dough strength?**](#)

What it sounds like you're experiencing is what we call a "bucky" dough condition. While acids do indeed break down proteins, there is a point in the degradation of the protein where just before fully relaxing they tighten up (think of it like a muscle cramp) making the dough all but impossible to do anything with. At this point the only salvation for the dough is to put it back into the mixer and remix the dough which seems to help quite a bit.

Now, if by "tenacious" you mean the dough was pliable but exhibited a lot of memory (snap back) but didn't exhibit any major tearing when trying to open it, a condition like that would be more indicative of an under fermented dough. This could be due to a number of things but my first suspicion would be a poor performing sourdough starter. A good way to test for this would be to make another dough using the same starter but increase the amount of starter added to the dough by at least 25%. My experience has been that plastic starters (like sponges) do not acidify as well or as quickly as a liquid starter does. This is because the flour is more concentrated and it is the flour that tends to buffer the system from pH change as measured by TTA (titratable acidity). You'll have the same acids present just in less quantity and quantity is what it's all about.

As for hard water v/s soft water, we have discussed this topic many times. The calcium content in hard water acts to strengthen the gluten forming proteins in wheat flour, it also acts as a buffer to pH change. These changes are not dramatic but they are there. In commercial operations where we have stores or bakeries in different areas or municipalities with variances in hard and soft water we adjust for this by including 0.25% calcium sulfate in all of the dough formulas by doing this

regardless of the hardness of the water being used, the dough reacts in the same manner as if all of the water was hard water.

Tom Lehmann/The Dough Doctor

626

/ [Re: LDMP](#)

From a functional standpoint the addition of diastatic malt to to a dough made with a malted flour is a moot issue, however if the flour you're using is not malted the addition of diastatic malt to the dough will help to improve the fermentation of the dough by converting some of the starch into sugar as a nutrient for the yeast to feed upon, it will also provide a significant contribution to the crust color of the baked product. The amount to add will vary with the strength (degree L/lintner value) of the diastatic malt product. Addition of excessive diastatic malt can result in a gummy crumb texture.

Non-diastatic (non-enzyme active) malt is really just another type of sugar that can be added to the dough. It is unique from other sugars in that it can provide a very unique "malty" (think malted milk balls/candy) at higher levels or a more subdued flavor at lower levels.

Tom Lehmann/The Dough Doctor

627

/ [Re: Completely cover dough when proofing?](#)

Yael;

Actually they have found that wood has certain anti-microbial properties while those scratches in the plastic are difficult to clean and constitute harborage for the bacteria.

Tom Lehmann/The Dough Doctor

628

/ [Re: Two Random Questions For The Dough Doctor](#)

When making large quantities of dough, the same container is almost universally used for both mixing and fermentation, unless you're taking hours to mix your dough the crust that forms on the bowl will not be so hard so as to be impossible to incorporate back into the dough.

The VCM (vertical cutter mixer) doesn't chop the gluten strands into little pieces, it does a fine job of developing the gluten. Horizontal versions of the VCM are used in some commercial bread making applications where thousands of pounds of bread dough are produced every day. The only problem with the smaller (vertical VCMs) is that they have no provision for cooling the dough so as multiple doughs are mixed the bowl needs to be periodically cooler using ice water or the friction created during the mixing process will drive the dough temperatures through the roof. Also, since dough mixing times are very short in the VCM it is VERY EASY to over mix a dough. Considering that a normal mixing time for a bread type dough is about 70-seconds you can see how 10-seconds can make a big difference. Pizza doughs are mixed even less! The same applies to the food processor when it comes to mixing the dough but but the mixing times will be different.

Tom Lehmann/The Dough Doctor

629

/ [Re: Semolina Flour Shelf Life](#)

It keeps as well as any regular flour BUT whole-wheat flour is a totally DIFFERENT matter with a room temperature shelf life of 2 to 3-weeks on the outside.

Refrigerated or frozen not a problem. The issue is with the germ/germ oil that's present, it is not very stable at all wanting to go rancid at the drop of a hat.

Tom Lehmann/The Dough Doctor

630

/ [Re: Yeast question and ratios](#)

We have some good charts here that will serve to guide you in determining how much yeast to use when fermenting under specific temperature conditions.

Tom Lehmann/The Dough Doctor

631

/ [Re: Completely cover dough when proofing?](#)

Like I said, "If it doesn't kill us it just makes us stronger". ^^^

Tom Lehmann/The Dough Doctor

632

/ [Re: Freezing dough?](#)

Oops! I misread your post, thought you were wanting to freeze the starter. :-[
There is no need to vacuum seal the frozen dough. It should be able to be frozen in a home freezer for up to 2-weeks without too much of an issue, after that you're on your own as viability becomes quite inconsistent.

To thaw the frozen dough, remove it from the freezer, unwrap and place into suitably sized container (lightly oiled), cover (but not air tight) and place in the fridge to thaw overnight, on the following day bring it from the fridge and allow to warm just until you can easily handle the dough then treat it just like you would fresh dough.

Tom Lehmann/The Dough Doctor

633

/ [Re: on fat : oil, margarine, vegetable shortening, butter](#)

If it contains water it is part of the total dough absorption equation.

How are you using the simple syrup?

As for adding the sugar later in the mixing process, it sounds like you have a coarse granulation sugar that doesn't dissolve too readily. Can you get a finer/smaller particle size sugar?

You might also try adding half (5%) of the sugar right up front as this will not

significantly interfere with gluten development and then add the second half about half way through the mixing process, then after mixing, allow the dough to rest for 10-minutes (this will give the late addition sugar a chance to further hydrate) and then mix/knead for an additional minute or so.

Tom Lehmann/The Dough Doctor

634

/ [Re: Somewhere South.....](#)

There was a M.A.S.H. (television series) episode where someone had stepped onto what was thought to be a land mine..Oops! Turned out to be the lid of a buried kimchi pot. :-D

Tom Lehmann/The Dough Doctor

635

/ [Re: Completely cover dough when proofing?](#)

We used to have cloth (canvas) sleeves in all of our overhead intermediate bread proofers but alas, no more due to the sanitation issues. Ditto for bagel boards too. The "kicker" is that some of the required stuff is actually worse than the cloth or wood! For example, wood bagel boards and bench tops are actually more sanitary than the "plastic" they dictate that we use today. To the best of my knowledge there was never a problem with cloth or wood (wet/damp cloth is a different story) but there was always a "potential" for a problem, if we went through life thinking about what might potentially happen we would never get out of bed in the morning, but then a car might "potentially" crash into your house hitting your bedroom and you, safe and secure bed, sometimes ya just can't win! :-D

Tom Lehmann/The Dough Doctor

636

/ [Re: Freezing dough?](#)

Active cultures are commercially preserved by freezing but at much lower temperatures than you can do at home (-20 to -45F) but you can still freeze it as a means of preservation but because it is an active culture there is not real way of telling just how long it will remain viable. An interesting test would be to freeze it in an ice cube tray, individually package enough cubes to make a dough and then begin test baking at 30-day? intervals to see how well it holds up in your home freezer. Be sure to make and document (pictures) a control made with the sourdough before freezing.

Tom Lehmann/The Dough Doctor

637

/ [Re: Somewhere South.....](#)

If you want to do a Korean or Asian themed pizza try using sesame oil and put some sesame seeds on the rim of the crust before baking (brush the edge with 1-egg white whipped into 1-pint of water, this will be a binder to hold the sesame

seeds in place on the crust). If you use a pan or disk put the seeds on the pan/disk so they get baked into the dough..delicious!

Tom Lehmann/The Dough Doctor

638

/ [Re: novel yeast](#)

The yeast was released for commercial testing (I cannot disclose much more than that). To see if there were any of what we fondly refer to as "hidden" issues which are brought to light only with long term testing. I had planned to meet with the manufacturer at Pizza Expo this year (the only meeting I had time for) but we all know how that turned out, so I'm, going to have to make a telephone call to see where they're at with the yeast. When I looked at it originally I encountered a couple of little idiosyncrasies that I had not planned on but we were able to overcome those pretty quickly so I think it holds a lot of promise.

Tom Lehmann/The Dough Doctor

639

/ [Re: Somewhere South.....](#)

We used it in combination with dried squid on pizza in preparation for the Asian Games in Seoul a number of years ago. We didn't have much of a selection in cheese so we just used a mozzarella cheese which was available there at the time. When combined with fresh vegetables the dried squid came across a lot like a mild version of anchovy. When the kimchi was added up front it lost too much of its character but when we added it right at the end of the bake it was delicious!

I've not made any Korean themed pizzas for a very long time, you've got me to thinking now that when the garden comes in I might run over to one of our excellent Korean food stores (Fort Riley is very close by and has several excellent Korean grocery stores (just like the one shown in the last episode) so kimchi is always easy for me to get.

Damn! If we didn't have this "stay home" order in place and if the restaurants were open we could go out for some Korean dinner, oh well, maybe another day. :(

Tom Lehmann/The Dough Doctor

640

/ [Re: Completely cover dough when proofing?](#)

Yael;

We did a study a number of years ago on kitchen sanitation using the homes of a randomly selected group of our own employees. We did swab tests in the kitchen as well as the main bathroom, what we found was very interesting to say the least! The most dangerous room in the average house (from a microbial stand point) was the KITCHEN! The #1 offender was the kitchen towel and the #2 offender was the counter top. Based on this we looked at the "chef's" towel, the one that our television chefs love to wear at their waist. We found that it was a literal petri-dish of bacteria (moist and warm). Based on this we stopped using them at AIB and we included it in our instruction materials as well as restaurant audits. I keep thinking of the old adage "That which doesn't kill us will just make us stronger". There must

be something to it.
Tom Lehmann/The Dough Doctor

641

/ [Re: Somewhere South.....](#)

She does seem to come across as pretty arrogant but so do a lot of other "chefs" so I just dismiss that. I did like the first show on dumplings, I'm planning to make some cherry soup this summer with dumplings so it was of more than a passing interest to me. The second show on pickles and sauerkraut was also interesting as I was raised on a German farm, need I say more? ;D

And I might add that I developed a special fondness for Korean Kimchi during my many trips to Korea, I like to refer to it as Korean sauerkraut. I still remember when flying into Kimpo International Airport and making the final approach and looking out the window and seeing all those kimchi pots on the roof tops, GOOD STUFF! :drool:

Tom Lehmann/The Dough Doctor

642

/ [Re: Yeast question and ratios](#)

The type or amount of yeast used has nothing to do with the dough yield. The amount of yeast used can be varied as a means of regulating the amount of fermentation the dough receives during a period of time under specific temperature conditions. For example an emergency dough that will be ready to make pizzas from in a matter of a couple to a few hours will contain significantly more yeast than a dough which will be fermented at room temperature for an extended period of time at room temperature. If the dough that is to be fermented for a long period of time at room temperature were made with the same yeast level as the emergency dough it would be extremely over fermented (excessively weak and have poor oven spring properties to name but a few of the over fermented characteristics). The three main types of yeast that are used are Compressed yeast (CY) aka fresh yeast/block yeast/wet yeast; Active dry yeast (ADY) aka dry yeast; and Instant dry yeast (IDY) aka instant yeast/bread machine yeast/quick rise yeast. Each of these yeast types are handled differently. CY can be crumbled and added directly into the flour or it can be suspended in the dough water with no special handling precautions, that's the good news, the bad news is that it must be kept under refrigeration and it is perishable with a shelf life that can range from a week or so to a few weeks depending upon the age of the yeast and the storage conditions. ADY is essentially the same yeast as CY but it has been dried to a lower moisture content for storage stability, because of this there is more leavening power pound for pound in ADY than there is in CY, thus to achieve fermentation similar to that of CY the ADY must be used at a lower level (lesser amount). The substitution for using ADY to replace CY is to use 50% of the CY as ADY (use 1/2 as much ADY as CY). IDY is again essentially the same as CY but it has been made using a different drying process and it has been dried to a moisture content even lower than that of ADY making it the most concentrated of the three on a pound for pound basis. When replacing CY with IDY the substitution is to use only 38% as much IDY as CY to get equivalent fermentation.

Is there a difference in performance of finished crust flavor between the three

different yeast types? No, they have been engineered to have essentially identical performance characteristics.

Why one over the other? Convenience and shelf life stability. CY can be added to the dough very easily without any special handling or addition methods BUT it is quite perishable and must be kept refrigerated for the duration of its somewhat limited shelf life. ADY has a rather long shelf life (6-months unopened) but may be shorter after opening, on the down side it must be pre-hydrated and activated in 100F water prior to addition to the dough. IDY has a very long shelf life (1 to 2-years unopened and 30-days or more after opening), it is also easy to use as it does not require pre-hydration and activation prior to addition to the dough, instead it is just added (dry) right on top of the flour. The one exception to this is when the dough will be mixed by hand, the IDY then needs to be pre-hydrated in 95 to 100F water BUT it does NOT require activation as the ADY does. The one cautionary note regarding IDY is that it should never be put directly into the cold dough water, to do so will damage the yeast and result in a soft dough condition with diminished or inconsistent fermentation properties.

A quick search through the archives here will turn up quite a bit of excellent discussion on these different types of yeast.

That's it in a nutshell.

Tom Lehmann/The Dough Doctor

643

/ [Re: Somewhere South.....](#)

I've been watching it since it first came on here (first episode here was last week/PBS).

Tom Lehmann/The Dough Doctor

644

/ [Re: on fat : oil, margarine, vegetable shortening, butter](#)

Let's do the math..

Your dough formula calls for 10% total fat in the form of butter or margarine, both of these will consist of 80% fat and 20% water. So, in 10% butter/margarine there is 8% fat. 80% of ten is 8, so if you want to replace 10% butter or margarine with shortening you would only need to use 8% shortening, the other 2% can be added to the dough formula as additional water.

One of the problems with adding an emulsifier to a yeast raised donut dough formula is that it can result in a very gummy eating characteristic if the donut is consumed when still VERY fresh (that's when yeast raised donuts are at their best). It can also result in a higher than desired level of fat absorption.

Tom Lehmann/The Dough Doctor

645

/ [Re: Lloyd Pans - Bottom Burning](#)

I make all of my thick crust and pan style pizzas (including Detroit style) in my home oven as 450F using a middle rack position.

When baking in a deck oven if I encounter problems with the bottom of the pizza

getting too dark I just place a pizza screen under the pan to address the problem, it's amazing what a small air gap will do :)

Tom Lehmann/The Dough Doctor

646

/ Re: Completely cover dough when proofing?

I've seen a towel used quite successfully, a dry towel I might add. The dough did not dry out at all. This was when I was in the Philippines. There is sufficient humidity in the air there (85+% R.H.) that the dough couldn't dry out if it wanted to, the towel was placed over the dough to keep the flies off of it, they are absolutely attracted to the fermentation aroma. There are places in the U.S. where you might get away with it in the summer but not in the winter too, for this reason I've always recommended that if you are going to cover your fermentation container with a towel, make it a damp towel, the moisture from the towel will help to humidify the air between the top of the dough and the towel which will go a long ways in preventing drying of the dough while its fermenting plus it will also keep the flies off of the dough. Back in the 50's it was common at pizzerias to mix a dough and leave it in the mixing bowl to ferment, the bowl was almost always covered with a wet/damp towel to keep drafts off of the dough and to prevent it from drying out. You have to remember that most pizzerias back then didn't have air conditioning so in the summer those kitchens were awfully humid and you could get away with it back then but today with air conditioning in that same shop it ain't gonna work the same way, not to mention the chatter that you're going to get from your food safety inspector.

Tom Lehmann/The Dough Doctor

647

/ Re: Pepperoni

No, you didn't miss it, you're tight though, that subject is pretty far from my area of expertise. Outside of smoking some beef, venison pork and salmon and sugar curing half of a hog from time to time I don't have a clue about how commercially cured meats are made.

Tom Lehmann/The Dough Doctor

648

/ Re: on fat : oil, margarine, vegetable shortening, butter

In bread production there is no difference in functionality between shortening and oil. There is no difference in finished moisture content of the bread either, between shortening and oil.

Fat is a tenderizer and as such it helps to provide the finished bread with a more tender eating crumb structure. Without any added fat, be if oil or shortening, the crumb will have a tough, more chewy characteristic (think of French bread) and as the amount of fat in the dough formula is increased the crumb structure will become progressively more tender eating, this is usually referred to as improved mastication properties when speaking about white pan breads where a tender eating crumb structure is a desirable characteristic. While at one time shortening

used to be the most commonly used fat in white pan bread production, today oil in some form is almost universally used due to its ability to be pumped and metered into the dough mixer(s) without the need to heat the fat or have heated delivery lines to the mixer. Just as in pizza dough production it is also common for the oil to be added to the dough after the dough has been mixed to some extent to reduce the possibility of the oil soaking into a portion of the flour thus rendering that portion of the flour incapable of producing gluten during the mixing process. What role does any fat (oil or shortening) play in white bread production? It helps to seal the cell structure for improved gas retention resulting in improved loaf volume characteristics, it also lubricates the dough which also contributes to improved loaf volume. It provides a method to regulate the mastication properties of the finished bread. The ability of a fat to retain flavors helps to provide depth and dimension to the flavor of the finished bread while at the same time imparting a type of mouthfeel to the bread which is perceived by the consumer as "richness". Since fat also inhibits moisture migration and moisture absorption the bread is not perceived as being as dry when fat is included in the dough formulation (moisture is not drawn from the mouth as readily). This is why breads made without fat are commonly perceived as being "dry". Under certain circumstances the type and amount of fat can impact perceived crumb firmness, for example, oil is always a liquid, so if stored in a cool environment it will have essentially no impact upon the firmness of the finished loaf, on the other hand butter will recrystallize to nearly its pre-baked firmness as the loaf cools so if the loaf is stored at low temperatures (below 60F) it can result in a perceived firmer bread. This can be a critical quality aspect as many breads are frozen for distribution and then thawed at the point of sale, if the bread is not fully up to ambient store temperature when the consumer picks up the loaf they can perceive that the loaf is firmer and reject it for a softer loaf which is perceived as being fresher. The use of fat in the dough formulation can also impact the appearance of the finished loaf in that the baked crust will have a more attractive, lustrous hue to it (the color itself doesn't change but the way the crust reflects light does). Lastly the oil provides a source of enhanced lubrication for the slicer blades during the slicing and packaging operation.

Note: Butter is a standardized product so the properties of the butter can influence some of the above cited effects, for example many U.S. butters have a very narrow slip point so they go from rock hard to sloppy soft within a narrow temperature range while real Danish butter does not exhibit these characteristics, it is still soft and pliable at refrigerated temperatures while not turning soft and sloppy at elevated temperatures (this is where Danish pastry got its name from). Margarine, on the other hand, is a man made product which can be formulated for just about any application with any slip point desired which explains why it has a broad application in the U.S. baking industry. It can be formulated to mimic Danish butter, U.S. butter or it can be so soft as to allow it to be spread on fresh bread right out of the fridge while not melting into an oil at room temperature (you might know this as a "soft spread" margarine). A somewhat unique product to the bread making industry is what is referred to as a "liquid shortening", this is really nothing more than a plastic shortening to which oil has been incorporated and it usually also includes an anti-staling agent such as a blend of mono-diglycerides which work to help reduce the staling rate of the bread. Since these are usually added along with the fat it is a convenience factor to the baker to have these materials included into the liquid bread shortening.

One last thing, butter naturally has 18 to 20% water and table grade margarine, being formulated to replicate butter also has the same water content. In some applications this water has to be taken into account when calculating the total dough absorption, for the most part it isn't but at high fat levels (above 8%) many

bakers will account for the water in the butter/margarine.

I probably missed a few points here but this should give you a pretty good idea of how these different fats function in a white bread system.

Tom Lehmann/the Dough Doctor

649

[/ Re: How can I keep my pizza round and 16"?](#)

If you were using a commercially made frozen dough it most likely contained L-cysteine (almost universally used in commercial frozen dough) which always results in a soft and very extensible dough after thawing which would explain the need for a bowl. Even non-commercially made frozen dough will suffer much of this same fate as the static freezing (freezing at temperatures above -20F) will damage the yeast cells allowing for leakage of glutathione (very similar to L-cysteine) from the cells upon thawing of the dough.

Tom Lehmann/The Dough Doctor

650

[/ Re: How can I keep my pizza round and 16"?](#)

Now I understand what you are doing, I think that by twisting the open end of the bag into a pony tail and tucking it under the dough ball as you place it in the fridge will result in a more round dough ball after the 36-hour cold fermentation process, when we do it in a pizzeria or when I do it at home getting a round shape has never been an issue as the pressure exerted by the bag forces the dough into a pretty round shape. After the CF period we just set the bagged dough balls on the side to temper AT room temperature (3-hours is a long time, with plastic bags about half of that time is more typical). The bag is then rolled down around the dough ball and the bag is inverted allowing the dough ball to fall onto a floured surface, then flour the entire dough ball and begin opening it into a skin by your preferred method.

Tom Lehmann/The Dough Doctor

651

[/ Re: How can I keep my pizza round and 16"?](#)

OK, so now my old age is creeping up on me again and I'm confused. You said you were following the referenced dough formula and procedure so I opened it and that's where I got my information from, that's what you said you were following? Putting that aside, I presume you are bagging the dough BUT you are not pulling the bag slightly snug to the dough ball and twisting the open end into a pony tail and tucking it under the dough ball as you place it in the fridge, this, to a great extent, negates one of the great advantages of bagging the dough, that is the process which I'm reading into your reply leaves a significant dead airspace within the bag, thus insulating a good deal of the dough ball and not allowing for consistent cooling of the dough ball, not to mention that it provides a space for condensation to form (not a good thing). I would suggest incorporating the above procedure into your bagging process to see if it helps, it'll provide better dough ball cooling so at least it won't hurt. You should not be putting the bagged dough

balls into any kind of container, a flat sheet pan is often used by pizzerias to place the bagged dough on in their coolers but dough boxes and lidded containers are counter productive in this case. A very popular reason for bagging the dough balls is the fact that they require no further attention once they are put into the fridge/cooler, there is no cross-stacking or down-stacking associated with bagged dough balls, for me this is a great convenience factor when making dough at home. Remember, experimenting is half of the fun, the other half is divided between learning from your experiments, eating your experiments, coming to the realization that you are rapidly making a whole new group of friends who just happen to love eating pizza as much as you do. :chef:
Tom Lehmann/The Dough Doctor

652

/ [**Re: How grate size affects melting**](#)

If you take a single mozzarella cheese and shred it to different particle sizes, from small cubes to a long shred you will see a progressively darker cheese color and the particle size diminishes (gets smaller), you will also see a significant change in the appearance of the top of the pizza as the cheese becomes more nondescript with the smaller particle size. For me, my preference is for a long, coarse shred as it gives better coverage and in my opinion, a better looking finished pizza.
Tom Lehmann/The Dough Doctor

653

/ [**Re: What exactly is the \$\frac{1}{2}\$ protein \$\frac{1}{2}\$ content in flour?**](#)

There are seven recognized proteins in wheat flour but only two of them are responsible for forming what we call "gluten", these two proteins are glutenin and gliadin.
L-Cysteine hydrochloride aka L-cysteine is indeed a dough reducing agent in that it breaks the gluten bonds making for a softer, more extensible dough. Essentially all L-cysteine made today is synthesized as are many of the vitamins which are used in food production. If you cannot use L-cysteine check into using glutathione aka "dead yeast" it is 100% interchangeable with L-cysteine but is sourced directly from yeast by heating just enough to collapse the cell wall but not enough to denature the amino acid (glutathione). If yeast is acceptable glutathione will also be acceptable.
What application are you wanting to use the reducing agent in? For what purpose?
Tom Lehmann/The Dough Doctor

654

/ [**Re: IDY vs ADY vs bread machine yeast**](#)

A 100-ml graduated cylinder would work I guess and you do know that there is a substitute for the balloon :-D but using one would probably require using a 250-ml graduated cylinder and a larger dough piece.
Or you could also fashion a simple gas trap.
Tom Lehmann/The Dough Doctor

/ Re: How can I keep my pizza round and 16"?

I've looked at the dough formula and procedure that you have referenced and I'd like to make a couple of comments. The dough formula calls for 63% dough absorption, do you know if this is the optimum dough absorption for the flour that you are using? Flour absorption changes and it is not uncommon for the absorption to change. My guess is that the absorption might be a little on the low side so you should consider incrementally increasing the dough absorption to see if that helps. Increasing the absorption makes for a softer, more pliable dough that will typically exhibit a reduced tendency to snap back aka "dough memory".

I also see that you are using metal fermentation containers and that you are NOT cross-stacking (leaving them uncovered until the internal dough ball temperature reaches 50F). This is a CRITICAL aspect to effective dough management as it allows for uniform cooling of the dough and also prevents or minimizes dough sweating which in nearly every case leads to a sticky/tacky dough at the time of opening. So, in my humble opinion these should be the first things to address, then if we need to we can dig deeper to resolve the problem. There are also some deviations in the dough formula which differ from what I normally use or recommend but we can address those later if we need to.

Tom Lehmann/The Dough Doctor

/ Re: IDY vs ADY vs bread machine yeast

Question #1: Yes you do. When substituting ADY for IDY you will need to use about 32% more ADY than IDY.

Question #2: IF, and that's a BIG "if" it is still as viable as it was when fresh/unopened, you would use the same amount.

An easy test to see if the yeast is still viable is to make a small dough in a cereal bowl (1/2 cup flour, pinch of yeast and a pinch of sugar) Put four tablespoons of warm water (100F) in the bowl, add the IDY and stir to suspend the IDY in the water, add the sugar immediately followed by the flour and stir, add more water as needed to make a dough, using your finger, oil the inside of a shot glass, then remove a piece of the dough large enough to fill half of the glass, cover with a damp piece of paper towel and check it for growth in 30-minutes. This will tell you if the yeast is still viable or not.

Another easy test is to make a slurry of 50 ml 100F water, 1-tablespoon flour and a pinch of sugar, stir this all together and pour into a test tube (I bet you have a case of them just waiting to be used for this), and then fit a balloon over the end of the test tube, place the tube into a glass or cup about 1/2 filled with 100F water. Check the back in about an hour to see if the balloon is beginning to inflate.

Tom Lehmann/The Dough Doctor

/ Re: Bench flour

If you go to my web site <www.doughdoctor.com> and look under "Media" you will have access to my videos. In the last of the dough making videos we show the

dough balls being opened both by using a dough sheeter to pre-open the dough and also opening it entirely by hand (similar to the first video you've referenced as wanting to learn from).

Tom Lehmann/The Dough Doctor

658

[/ Re: Polish amount](#)

Perfect! :)

Tom Lehmann/The Dough Doctor

659

[/ Re: Newbie--Caputo's Tipo 00 dough recipe](#)

Rohfan;

Unless it has been upgraded to a reverse spiral dough arm (not sure if it can be) it will most likely have a very basic dough hook which you will eventually come to hate as the dough keeps riding up on the hook and doesn't get properly mixed. This tends to be more problematic with dough sizes anything less than full bowl capacity.

You will want to experiment with your mixer to see if you can mix smaller size doughs using the flat beater for a portion of the dough mixing time and then changing over to the hook and mixing at a higher speed to keep the dough from climbing up the hook. If you plan to make some of the higher absorption doughs this may not pose as great of a problem as the dough is easier to mix at a higher speed allowing centrifugal force to pull the dough off of the hook for improved mixing action. I know a number of members here have a similar problem with their K5-A so maybe they will be able to share with you what they have found to work at resolving this irksome trait of the old "J"/"C" hook design.

Tom Lehmann/The Dough Doctor

660

[/ Re: Polish amount](#)

Most of the time the set temperature for a polish is between 75 and 80F, it is suggested that you that the water temperature used in making the polish be about 2F less than the targeted set temperature. I never recommend "room temperature" as there is no definition as to what it might be. For some it might mean 70F while for other it might mean 60F or as I once found out in Hermosillo, Mexico it meant over 100F/37.7C! :o

Tom Lehmann/The Dough Doctor

661

[/ Re: Dough tears when balling? Can you over ball?](#)

Your best bet will be to allow the dough balls to rest, undisturbed at room temperature until they have softened sufficiently to be opened into skins without tearing. If you want to make pan pizzas using the dough just grease a dark colored,

deep-dish pan with Crisco (Butter Flavored Crisco is my favorite), but margarine or lard works well too. Flatten the dough ball into a puck shape and place into the pan, drape with a piece of plastic and allow to rest for 30-minutes, then using your hands, press and stretch the dough to fit the pan, don't worry if it fights you or pulls back, just cover it back up and allow to ferment for another 30 to 45-minutes, finish shaping the dough to the pan, it should stay put this time. Cover the panned dough with the plastic again and allow to final proof for 30-minutes, you're then ready to dress and bake.

Tom Lehmann/The Dough Doctor

662

/ [Re: Polish amount](#)

While that dough management procedure isn't designed for use with a polish, it can be done. Use 1/3 of the flour, 1/2 of the water and all of the yeast in the polish. Set temperature for the polish should be 75 to 78F/23.9 to 25.5C, allow the polish to ferment for 6-hours before incorporating it into the remainder of the dough ingredients.

Tom Lehmann/The Dough Doctor

663

/ [Re: Dough tears when balling? Can you over ball?](#)

First off, the "window pane" test for gluten development is used for determining the proper mix for a bread dough not a pizza dough. Pizza doughs are correctly mixed when the dough JUST takes on a smooth appearance. You do not want to mix the dough more than this. Allowing the dough to ferment for an hour before balling is just asking for the dough to tear during balling, especially with a strong flour like All Trumps. My suggestion would be to just scale and ball immediately after mixing, and then manage the dough as you wish from there.

Tom Lehmann/The Dough Doctor

664

/ [Re: sticky dough?](#)

I would really need to know more about the dough to answer your question. How long after the flour was removed from the freezer did you mix the dough? What kind of flour are we talking about?

Protein content?

Dough absorption?

How big of a dough are we talking about?

How was it mixed, by hand or machine? If by machine for how long?

How was the dough managed?

I've got an idea but I want to narrow the field before casting my vote.

Tom Lehmann/The Dough Doctor

665

/ [Re: Help please](#)

Yes.

Tom Lehmann/The Dough Doctor

666

[/ Re: Take and bake dough suggestions?](#)

Do not use more than 24-hours CF for a T&B pizza. Adjust the dough formula by increasing the yeast level by 20% and reducing the dough absorption by at least 2% maybe more, depending upon what your present dough absorption is. Generally something in the 58 to not more than 60% range seems to work well, but again it will depend upon the flour you're using. Immediately after opening the skin place it on a silicone baking sheet and then onto a cardboard circle. Refrigerate for at least 1-hour, then dress and back into the fridge for another hour, then stretch wrap and refrigerate until ready to use. Bake directly from the fridge at 425F.

Tom Lehmann/The Dough Doctor

667

[/ Re: Help please](#)

Yep, your problem is that you are not fermenting a sufficient amount of the flour. Kyrol flour tends to require quite a bit of fermentation to properly condition the gluten. After making the dough, scale and ball it and cold ferment the dough balls for 48-hours. After the cold fermentation period remove the dough from the fridge and allow it to temper AT room temperature until the internal dough ball temperature reaches 60F, then begin opening the dough balls into skins. Let us know if this makes things a bit easier.

Tom Lehmann/The Dough Doctor

668

[/ Re: question about Doughmate artisan box size](#)

For the home pizza maker the term "cross-stacked" as indicated in my previous response, means left open/uncovered/unlidded. After the appropriate cross-stack period the dough box is lidded or covered in some manner so as to prevent drying of the dough during the fermentation period.

Tom Lehmann/The Dough Doctor

669

[/ Re: Dealing with poor flour](#)

Let's look at an order of progression, first adjust the dough absorption to a level that works with your mixing method and dough management procedure, then based on that dough absorption begin a series of tests with progressively higher or lower absorptions to achieve the desired finished crust characteristics. All flours are not created equal, some will carry more water than others. You cannot arbitrarily plug in a high absorption, like 75% and expect that all flours will produce a dough with acceptable dough handling properties or the finished crust characteristics one is looking for. You have to find out what is correct for YOUR

specific flour. When dealing with an unknown flour you always want to first get a working dough formula and procedure, then once you have that you can begin adjusting the formula and/or procedure to move it closer to giving you the characteristics you're looking for.

Tom Lehmann/The Dough Doctor

670

/ [Re: Dealing with poor flour](#)

Sure! Just reduce the dough absorption to 60%. This is a pretty good place to bench mark just about any pizza dough formula from. Unless you have a really "off the wall" flour it will almost always give you a usable dough, you can then decide if you want to stay with 60% or adjust the amount up or down for better overall dough performance and/or finished product quality.

Tom Lehmann/The Dough Doctor

671

/ [Re: Help please](#)

You'll have to excuse me but I'm a bit confused.

What ingredients were in the poolish? How much of the total flour was in the poolish? What was the temperature of the poolish?

I don't think enough of the flour is being fermented but answers to the above will tell.

Tom Lehmann/The Dough Doctor

672

/ [Re: question about Doughmate artisan box size](#)

Also remember that the Doughmate boxes will need to be cross-stacked (left open) until the internal dough ball temperature reaches 50F after which it can be covered/lidded. All of the other methods mentioned do NOT require this additional step in your dough management procedure which is something to consider if you will be making your dough after the sun goes down. I use the plastic bread bag method almost exclusively anymore, just bag it, put it in the fridge and forget it! :)

Tom Lehmann/The Dough Doctor

673

/ [Re: An engineer, wanting to start a pizza business.](#)

Welcome!

There are many of us here who can help you with your endeavors. To help get you up to speed on all things pizza, there is also another web site that you will want to explore too <www.pmq.com> . There are also magazines dedicated specifically to pizza which are available through on-line subscriptions: Pizza Marketing Quarterly Magazine/www.pmq.com; and Pizza Today Magazine/www.pizzatoday.com There are also quite a few good books on pizza production that are available from most on-line sources.

In the mean time, what is your concept for a store/pizzeria?
Tom Lehmann/The Dough Doctor

674

[/ Re: Help Scaling Tony G Sicilian Dough](#)

HansB;
You did that just as a very competent well trained baker would do it, well versed in what we refer to as "bakers math". You think like I do. Do you have a background in the baking industry?
Tom Lehmann/The Dough Doctor

675

[/ Re: Substituting Caputo 00 for KABF](#)

There is bread and there is "bread", can you be more specific as to the type of bread that you are making?
Tom Lehmann/The Dough Doctor

676

[/ Re: Bulk Fermenting vs. Individual Balls](#)

It looks like you are definitely getting a more open crumb structure. You might make another increase in the yeast level and you might also consider putting some moisture into the oven, maybe placing a pan of water in the oven before the pizza will increase the moisture content of the air within the oven to give you better oven spring. Electric ovens bake with a very dry heat as there are no products of combustion in the baking chamber as there are with wood fired ovens (water/moisture is one of those products of combustion).
Tom Lehmann/The Dough Doctor

677

[/ Re: yeast and flour supply chain?](#)

People need bread so they're thinking of making their own, what kind of flour do you buy to make bread? Bread flour! If there were a shortage of bagels they'd all be buying "bagel" flour..whatever that is? During times of shortage I've always accepted the challenge to use whatever type of flour I could get my hands on, when traveling internationally back in the 80's we couldn't always find "pizza" flour or even "bread" flour but there was always some type of wheat flour available. Sometimes it was even a composite flour consisting of 70% wheat flour and 30% fine ground domestic grains and legumes. In all cases we were able to make pizza from the flour, maybe not a New York style or a Neapolitan style, but it was a decent pizza and people liked it. The truth to the matter is that bread, pizza, bagels, pretzels, soft rolls and hard rolls can all be made from the same flour without any difficulty at all. The same goes for pizza in that it can be made from just about any kind of flour, yes you will need to make some adjustments in the way you make it but that's what learning about pizza is all about. What do you think the

old pizza makers of 200-years ago in Italy did for flour? They used what they got and they learned, by trial and error, how to use it, and from the looks of the present day pizza industry they did a mighty fine job of overcoming their flour issues and got to the business of making pizzas. The same is true today, snag a bag of the "different" flour and experiment with it to broaden your learning curve, but what about the mistakes? Trust me, there will always be someone waiting just outside of the kitchen all to eager to help you make those mistake pizzas go away never to be seen again.

I relinquish the soap box. :-D

Tom Lehmann/The Dough Doctor

678

[/ Re: Delay opening?](#)

I did that too, I worked at AIB during the day (6:30 a.m. to 6:00 p.m. including travel time) dinner with the family and off to the store at 7:00 p.m. Worked at the store until 12:00 a.m. and back home to repeat on the following day. I did this for nearly 2-years until I got my staff and got them all trained. It's a tough grind to be sure! More importantly, I was A LOT younger then too.

Tom Lehmann/The Dough Doctor

679

[/ Re: Consistent white brim](#)

Also, remember that we go to all the trouble of preheating the oven and the stone/steel and then we open the oven to peel the pizza in, depending upon how proficient one is at peeling a pizza into the oven can have a huge impact upon how much heat is lost from the oven during the process. This is especially so with today's "200" Energy Star rated ovens.

Tom Lehmann/The Dough Doctor

680

[/ Re: Newbie--Caputo's Tipo 00 dough recipe](#)

Wotavidone has answered the question for me, spot-on! Thank you! ^^^

While approximately 10% protein content is a bit on the low side it is entirely doable, especially when mixing the dough by hand.

While there are many different ways to mix a dough by hand here is the way that I do it.

Put water in mixing bowl (70F) 60% of the flour weight.

Add the salt and sugar to the water (no need to stir).

Put the yeast in 5% of the flour weight of 100F water, stir to suspend the yeast. IF CY or IDY you can now add the yeast suspension directly to the water in the bowl, if it is ADY allow the yeast to activate for 10-minutes before adding it to the water. Immediately add the flour and begin ti stir the dough with a wooden spoon, after a minute, or so, add the oil and continue mixing until the dough becomes too stiff to mix with the spoon, now begin mixing by hand until you have a homogeneous dough.

Turn the dough out of the bowl using a plastic bowl scraper to get it all out, lightly

oil the bowl and the dough, knead the dough for a few minutes (3-minutes), form the dough into a ball and place back into the oiled bowl, cover (drape) with a piece of plastic and allow to ferment for about 2-hours.

Turn the dough out of the bowl again and knead it until it just takes on a smooth appearance, oil the bowl, form the dough into a ball again and place back into the bowl.

Cover the bowl with a piece of stretch wrap but do not seal it tightly, place in the fridge to cold ferment for about 24-hours (48-hours max.).

After the CF period bring the dough out of the fridge and allow it to warm to 60F internal ball temperature (about 90-minutes), turn the dough out of the bowl onto a floured surface, flour both sides of the dough ball and open into a skin by your preferred method.

Tom Lehmann/The Dough Doctor

681

[/ Re: Newbie--Caputo's Tipo 00 dough recipe](#)

There should also be a nutritional panel too, what does it say?

Tom Lehmann/The Dough Doctor

682

[/ Re: Delay opening?](#)

About a week or two out from opening begin making pizzas and send them out to local charities, police station, fire station, etc. This will give your crew a chance to practice and serve to advertise your presence. When opening, I would advise you not to do a grand opening, instead do a soft/quiet opening, if you have done your pre-opening work you will have customers coming in to check you out. This will allow you to work out any serving issues that might crop up (they always do) while allowing your staff to ramp up their skills gradually. In these trying times I don't think you'll get "hammered" as is usual for a new opening restaurant but you never know. Once your staff is comfortable and you feel ready for it, then is the time to consider a grand opening. Many of the restaurants that I've worked with never had to do a grand opening, once the word got out that they were open they were too busy for a grand opening! :).

Best of luck!

Please keep us posted.

Tom Lehmann/The Dough Doctor

683

[/ Re: Thank you Tom the dough doctor](#)

We have discussed cold fermenting dough balls in bags a number of times here so I'll just summarize. When cold fermenting the dough balls in bags DO NOT use ZipLock bags, instead use bread type bags. Lightly oil the dough ball(s) and drop into individual bags, twist the open end of the bag into a pony tail and tuck the pony tail under the dough ball as you place it in the fridge (DO NOT SECURE THE OPEN END IN ANY OTHER WAY), after the CF period remove from fridge and allow to temper AT (NOT TO, AT) room temperature until the internal dough ball

temperature reaches 55 to 60F, then roll the bag down around the dough ball and invert it over a floured surface or bowl of flour, the dough ball will invert the bag as it falls free. Flour both sides of the dough ball and open into a skin by your preferred method. Save the bags and store in a small covered bowl in the fridge for the next time you make pizzas.

Note: When placing the dough ball into the bag try to pull the bag snug, but NOT tight to the dough ball. If you search back through some of the threads on the topic I think you will find some good pics of bagged dough balls.

Tom Lehmann/The Dough Doctor

684

[/ Re: Newbie--Caputo's Tipo 00 dough recipe](#)

Yes to both of your questions. What can you tell us about the AP flour you have on hand? Can you send a picture of the ingredient panel? The reason I ask is because all AP flours are not created equal, some are more like a bread flour while others are more like a pastry flour.

Tom Lehmann/The Dough Doctor

685

[/ Re: Delay opening?](#)

I'll be brief. Delay the opening and DON'T quit the day job!!! ^^

Tom Lehmann/the Dough Doctor

686

[/ Re: Newbie--Caputo's Tipo 00 dough recipe](#)

Before you make the next bake try adding 2% sugar to the dough formula (flour weight X 2 (press the "%" key) and read the sugar weight in the display window. Note: Ingredient weight will be in the same weight units (pounds, ounces, grams, etc.) that the flour weight was shown in.

Rather than baking the pizzas in a lower rack position you might also try raising the rack to a higher position (closer to the heat) as this should also help in getting better crust color.

Now, with all of that said, I might suggest one other thing, rather than starting with a "00" flour, set it aside for now and see if you can get a bag of regular bread type flour, use this flour to perfect your skills, dough formulation and dough management procedure, once you're enjoying some good pizzas that's the time to introduce the "00" flour and begin perfecting the dough formula and procedure with that flour.

Tom Lehmann/The Dough Doctor

687

[/ Re: Consistent white brim](#)

What shelf position are you baking on? If you are not baking on the highest shelf position try moving your pizzas to a higher position in the oven.

Tom Lehmann/The Dough Doctor

688

[/ Re: Modifying recipe to use Bread Flour Instead of KASL-Flour shortage due to Covid](#)

Yes one can. Find out how much protein your existing flour has and subtract this from the percent protein you want the flour to have, divide this number by 0.6 and that is the percent VWG you will need to add to bring your existing flour up to the desired protein level. Remember that you will need to increase dough absorption by 1.8% for each 1% VWG you add. Make sure to blend the VWG into the flour to prevent pilling of the VWG.

Tom Lehmann/The Dough Doctor

689

[/ Re: All in one scale? \(Precise and large capacity\)](#)

I can imagine a scale that would require you to enter the temperature of the water and then a microprocessor would calculate the density and show the water as a volumetric measure in ml based on the weight of the water.

I think I'll just stay with my multi mode scale as I work mostly in metrics anyhow.

Tom Lehmann/The Dough Doctor

690

[/ Re: Hilarious Result, But Delicious](#)

I'm staying with my yeast guess.

Tom Lehmann/The Dough Doctor

691

[/ Re: Pizza Hut Pan Pizza](#)

Your best bet by far will be to fully bake the pizzas but to bake them to your minimum standard of being "done", to allow to cool, slice into desired size pieces, individually wrap each piece in cling wrap and freeze. I do not recommend trying to recon (reheat) the pizza directly from the freezer, instead either place it in the fridge to thaw or thaw at room temperature (you will need to work out the time needed to thaw as it will vary with the pizza). Place into a 350F oven to reheat. The time again, will need to be determined.

Tom Lehmann/The Dough Doctor

692

[/ Re: All in one scale? \(Precise and large capacity\)](#)

Ml. on a scale? That's a first! :-D

Tom Lehmann/The Dough Doctor

693

[/ Re: Pizza dough](#)

Dan;

You certainly came to the right place! Take a look at the posts on New York style pizzas and you'll find yourself chin deep in "high gluten" flour. :-D

Tom Lehmann/The Dough Doctor

694

[/ Re: Looking for a specific pizza dough recipe](#)

Try my New York dough formula but reduce the dough absorption to 56%, CF for 48-hours, allow the dough balls to temper to 50F internal temperature, open dough balls using a rolling pin or pastry pin to about 3/16-inch thickness, dock the dough well using a dough docker, fit the skin into a lightly oiled, bright colored (not seasoned) cutter pan, dress and bake at 500F. Bench mark from there and lets see how close that gets you.

Tom Lehmann/The Dough Doctor

695

[/ Re: Hilarious Result, But Delicious](#)

As you didn't mention anything about the dough feeling different we'll "assume" that it felt pretty normal to you, so I'm guessing you might have made an error in scaling the yeast or possibly scaled it right but maybe used IDY instead of ADY which when used at the same levels would create a slight increase in overall yeast level. Just not enough information to make a better SWAG. In any case it's good to hear that you enjoyed the pizza regardless of what it looked like, like I always say "even our mistakes can taste pretty good".

Tom Lehmann/The Dough Doctor

696

[/ Re: Modifying recipe to use Bread Flour Instead of KASL-Flour shortage due to Covid](#)

Dasnyde4;

The only time you might really want to use a "high gluten" flour (14+% protein content) is when making a more authentic New York style pizza. The dough formula and procedure performs very well using just about any decent bread type flour, with the only real difference being that the finished crust will not be as chewy as it would be if made using a flour like All Trumps. It will still be chewy, just not as chewy. This might even prove to be a good thing for you as some prefer a pizza that isn't quite as chewy as a traditional New York style pizza.

Welcome to the forum and let us know if you have any questions or problems along the way.

Tom Lehmann/The Dough Doctor

697

[/ Re: Steel Pans](#)

I occasionally run into the same problem, when I do I just place the pan on a pizza screen and bake it that way.

Tom Lehmann/The Dough Doctor

698

[/ Re: First Delivery for our NY Style Slice shop concept](#)

And the baking temperature was?

Tom Lehmann/The Dough Doctor

699

[/ Re: Starter suddenly stiffened](#)

A number of years ago we did a study on similarity of flour by type from different manufacturers, we found that there was a very high level of similarity between bread, and H&R type flours. The so called "high gluten" flours were somewhat variable with some having a protein content as low as 12% while others were in the 13 to 14+% range. With AP type flours we found even greater variances as some AP flours were made from soft wheat varieties and others were made from hard wheat varieties with protein content all over the board from a low of 9% to a high of nearly 12%, and remember that there is a significant difference in the gluten characteristics between flours made using hard and soft wheat. Based on this study we developed the recommendation to be very cautious when changing brands of AP flour.

Tom Lehmann/The Dough Doctor

700

[/ Re: All in one scale? \(Precise and large capacity\)](#)

I love my KD-8000! We use it for when making jerky and preserves and anything else where we need to weigh something in the kitchen. Two scales are the way to go but if you don't have the accuracy range you want from a KD-8000 just weigh, put into water and stir, then divide. For example, if you want 1-gram of yeast, weigh two grams into two small glasses of 100F water, stir to suspend the yeast and portion out one of the glasses. What you will have in the glass will be close enough to 1-gram for making pizza dough. Be sure to include the water in the suspension as part of the dough water and you're good to go.

Tom Lehmann/The Dough Doctor

701

[/ Re: mixing and handling unmalted flour](#)

In countries where noodle production is one of the major products made from imported wheat or flour and bread or pastry production is secondary I've seen a number of cases where the lower protein HRW (HRW #!) is blended with the higher protein durum wheat/flour to provide a higher protein flour option. Many international millers don't have any baking background so they have little or no concept of the ramifications this can have for the end user. Like I said, it just an

educated guess based on the information provided. The relatively high ash content shown on the flour specification also shows that the flour is what we refer to as a high extraction rate flour (typical U.S. white flour runs at about 0.6% ash while whole wheat flour comes in at 1.0 to about 1.25%).

Tom Lehmann/The Dough Doctor

702

/ Re: Is there a benefit to using wood boxes for proofing?

Are you sure you want to leave the dough balls come all the way up to room temperature after the CF period? The dough can be problematic at room temperature in some cases, this is why pizzerias use 50F (internal ball temperature) and many home pizza makers use 60 to 65F (internal ball temperature) for the target temperature before opening the dough balls into skins. Poplar is probably one of the most common woods used for dough boxes and bagel boards because of its dense grain which doesn't tend to splinter like some of the hardwoods do. In the cracker industry, we used to use wood dough troughs for fermenting the cracker doughs (18 to 24-hours) and when the wood troughs were no longer permitted we found that there was a change in the flavor of the finished crackers. It was found that the wood would become inoculated with a strain of lacto bacillus which in turn migrated into the dough during the fermentation period resulting is a specif flavor development which could not be achieved in the mandated steel fermentation troughs. The specific strain of LB was identified and added as a supplement to the dough at the time of mixing thus restoring the original flavor to the crackers. Keep in mind though that this is all based on using well used wood dough troughs (boxes in your case) and the dough was in the box for 18 to 24-hours. Cracker doughs are around 40% absorption so there was never much of a problem with the dough becoming one with the wood. Note that these wood dough troughs were never washed, they were just scraped clean for the next use. Cold fermenting the dough for 24 to 48-hours, or more in a plastic box and then transferring it to a wood box to temper prior to opening would serve no useful purpose.

Tom Lehmann/The Dough Doctor

703

/ Re: Giusto's Ultimate Performer for NY Style

It should work just fine, I've used the G.M. Sperry organic flour many times with my dough formula and dough management procedure with the added (optional) 2% sugar.

Tom Lehmann/The Dough Doctor

704

/ Re: Forkish Saturday dough, too much salt?

It would if you took a break between suspending the yeast in the salt water and adding the flour, otherwise it would not cause any problem, on the other hand if the yeast amount was the same and you went from 2% to 3% salt (a 50% difference) that might explain the difference. What I suggest you do is to make the dough

again but use only 2% salt, if you get better fermentation you'll have your answer, let me know what you find.

Tom Lehmann/The Dough Doctor

705

[/ Re: Introduction - Pizza Truck Pipe Dream](#)

Phil;

Welcome to the site! Hopefully we can help you make your dream a reality. Your ideas are sound, and buying "local" can be a significant benefit, try to incorporate that theme into your advertising. One word of caution though, while N.Y. pizzas are great, they may not be perceived that way by once you get away from the east coast. A case in point, I worked with a young man here in Manhattan, Kansas about 12-years ago in opening a N.Y. pizzeria. Got the pizza nailed down tight, sauce and toppings too, even the store decor...pizza was judged just ho-hum. The problem was that people in this area want and really like a crispy crust regardless of the type of pizza it is. We made changes to the pizza so we now have a VERY CRISPY crust but retained all of the physical appearance characteristics of the N.Y. pizza. Truth is, we now have a New Haven style pizza, but the customers love it, so much so that the owner, Adam Peyton, now has three stores and has been named "best pizza" numerous times, in our local market area AJ's Pizzeria is without doubt the preferred pizzeria. (AJ's New York Pizzeria, Manhattan, Kansas). Point is, know your market and give your customers what they want and you'll have a leg up over the saddle on your way to success.

Tom Lehmann/The Dough Doctor

706

[/ Re: Wide enough fridge](#)

Now I'm unconfused. ;D but I still have some questions as to exactly what you are wanting to do.

So we want to room temperature ferment our dough in dough boxes measuring approximately 18 X 24-inches, right? I saw your reference to a heat lamp but the refrigerator part leads me to believe this assumption might be wrong. Maybe you just want to use the refrigerator as an insulated box? I guess the questions I'm asking now is "what temperature do you want to ferment your dough at, and how many dough boxes are we talking about?

Tom Lehmann/The Dough Doctor

707

[/ Re: Wide enough fridge](#)

Why do you want to proof the dough in your dough boxes? After CF just place at room temperature and allow the dough balls to warm to 50 to 60F internal temperature before opening into skins.

Pan pizzas are proofed after the dough is fitted into the pan before dressing and baking.

Is there a possibility that you mean "fermentation" rather than proofing?

Please unconfuse me.

Tom Lehmann/The Dough Doctor

708

[/ Re: Help - looks like dough is being eaten from the inside out](#)

The thing about SD starters is that it's a crap-shoot as to what you get. You really don't know what you're culturing/growing until you go to use it. Once you find something that you like treat it like you would important computer data, back it up! Start a second one using the first one to inoculate the back-up thus ensuring you'll have the same micro-flora. Then if you lose one you will still have another to work with and to propagate another/more from without losing the flavor or performance of the master S.D. starter.

Tom Lehmann/The Dough Doctor

709

[/ Re: mixing and handling unmalted flour](#)

Use less potato.

Tom Lehmann/The Dough Doctor

710

[/ Re: Yeast storage and longevity](#)

From a practical point in home use application the rate of deterioration between ADY and IDY is about the same.

Tom Lehmann/The Dough Doctor

711

[/ Re: mixing and handling unmalted flour](#)

No, just the flour and the water for the autolyze. Add the potato into the dough not the autolyze.

Tom Lehmann/The Dough Doctor

712

[/ Re: Help - looks like dough is being eaten from the inside out](#)

Easiest question to answer for the day: No.

Based on that I would move insufficient dough absorption to the bottom of my list of things to look at. I have never had any problem making bread or pizza doughs with just 20% added rye flour, it's not until you get up into amounts over 35% that things begin to get interesting with the dough unless additional VWG is added to help carry the rye flour. I think your approach is a good one to look at just the flour alone and then look at the starter and the added grains.

Tom Lehmann/The Dough Doctor

713

[/ Re: Cracker style dough](#)

RI;

I might add that with this type of dough it's important to suspend the yeast in the water and then add the salt and sugar, give it a quick stir and add the flour, then add the butter. The best way to add the butter is to cut it into pieces or shave it onto a piece of paper and then allow it to warm to room temperature, it is then added right on top of the flour just before you begin mixing.

Tom Lehmann/The Dough Doctor

714

[/ Re: mixing and handling unmalted flour](#)

No, just make the autolyze and add it to the bowl then the remainder of the ingredients (no more flour or water) and mix, then proceed as suggested or as you wish to.

Tom Lehmann/The Dough Doctor

715

[/ Re: organic vs. non-organic flour?](#)

In a word, yes.

Tom Lehmann/The Dough Doctor

716

[/ Re: mixing and handling unmalted flour](#)

From your description I am wondering if the flour might not be made from a specially milled hard red spring wheat which has a larger particle size (slower to hydrate resulting in a sticky dough). This would not be a durum semolina but more like a spring wheat semolina flour. We do the same thing here in the U.S. using hard red winter wheat varieties where the flour is designed specifically for making pasta.

Here is something to try, make an autolyze of the flour and 70% of the flour weight as water. Allow this to set for 1-hour, then add the remaining ingredients and see if you get a better dough. The absorption might not be correct but it should be better than what you have been getting and not as sticky either. If the flour is made from all spring wheat the dough should open pretty well after 24 to 48-hours cold fermentation but if the flour is made from a blend of both spring wheat and durum wheat you may find the dough to be too elastic for making donuts.

For your process, mix, (targeted finished dough temperature is 80 to 85F/26.6 to 29.4C), then bulk ferment for 1-hour, divide into 2 or 3Kg. pieces and form into loaves, cover the loaves and allow to ferment for 1.25-hours, then begin rolling the dough out to about 8mm in thickness, cut the donuts from the sheeted dough.

Place cut donuts on a frying screen or flour dusted cloth on a sheet pan or proofing board and allow to proof for about 45-minutes, fry approximately 1-minute on each side at 365F/185C.

Don't worry about the flour not being malted as your donut formula already has plenty of sugar in it.

Tom Lehmann/The Dough Doctor

717

/ [**Re: Balling**](#)

There is a commercial method of scaling and balling that I show in one of my videos on my web site at <www.doughdoctor.com> very fast with one person balling approximately 85-pounds of dough in under 20-minutes (12-ounce scaling weight).

Tom Lehmann/The Dough Doctor

718

/ [**Re: Yeast**](#)

We do begin to see some changes in the "brew" (which is what you are describing) after about 36-hours in the fridge but these changes are hard to see in pizza crust production (bread making is a TOTALLY different story) so you should be good doing as proposed, but since we are not propagating yeast we are only diluting the existing population of cells, with time you will find that you will need to add ever increasing amounts of the brew to maintain equivalent gassing/fermentation power.

Tom Lehmann/The Dough Doctor

719

/ [**Re: Cracker style dough**](#)

Flour: 100% 500-grams

Salt: 1.75% 8.75-g.

Sugar: 2% (optional) 10-g.

Yeast: CY 1% 5-g.

Butter: 6% 30-g.

Water: 45% 225-g.

Total: 778.75-g

Bowl and fermentation loss: 75-g.

Yield: 703.75-g.

Use the trim dough to make a few bread sticks for appetizers. or just cut into strips about 1/2-inch wide and desired length to make a dipping bread stick.

Tom Lehmann/The Dough Doctor

720

/ [**Re: Bench flour**](#)

I use equal parts of regular white flour, FINE corn meal, and semolina flour. If you ask 50 different people what works best for them you'll probably get close to 50 different answers.

Tom Lehmann/The Dough Doctor

721

/ Re: Yeast

That's an impossible question to answer as I don't know how much damage the CY has sustained as a result of being frozen (CY does not tolerate freezing all that well). The best advice I can offer is to use it at 2.5 times your IDY level and see how it performs. If it appears slow you can increase the amount of CY but be aware that the freezing process will damage the yeast cells resulting in the release of glutathione into the dough making softer and more extensible than normal. To some extent this can be addressed by reducing the total dough absorption a couple percent. If you see any of this I wouldn't advise trying for any long fermentation times (limit CF to not more than 24-hours) as the softening will continue during the CF time.

By the way, unopened IDY can be frozen for up to 2-years with just a 25% loss of activity.

Tom Lehmann/The Dough Doctor

722

/ Re: Help - looks like dough is being eaten from the inside out

Are you including the rye flour in the total flour? The total flour should include only the gluten forming flours. Other flours mentioned such as spelt have a very low amount of gluten forming proteins and they create a poor quality gluten, ditto for rye flour, it appears that you are milling the steel cut wheat into a flour so that being the case it can be included in the total flour, if not milled into a flour it should be shown separately as an added ingredient. To determine the dough absorption figure 62% for the white flour portion and 75% for the dark rye flour portion, this should get you pretty close to the correct dough absorption. For the other flours use the same procedure as you would for finding the absorption of a multi-grain mix. If you search back through the archives you should find several threads of discussion on how this is done.

I hope this helps,

Tom Lehmann/The Dough Doctor

723

/ Re: Cracker style dough

Most cracker type doughs are made with a dough absorption of 40 to 45% and about 5% fat in the form of shortening as opposed to oil. They are mixed for a VERY SHORT TIME, usually about 2-minutes or less. The "dough" after mixing looks a lot like a biscuit or pie dough in that it is extremely "shaggy" and not cohesive at all, but instead it is dry, floury, and crumbly. The dough is scaled to desired weight and packed together on the bench top using your hands to form something that looks a bit like a puck (hockey puck), this is then wrapped in stretch wrap or placed onto a sheet pan with a 2-inch spacing between pucks and the entire sheet pan bagged or wrapped. The dough is allowed to cold ferment for a minimum of 24-hours but may go as long as 48-hours, it is then removed from the cooler and allowed to temper AT room temperature until the internal puck temperature reaches 55F, the pucks are then formed into skins using a dough

sheeter or a rolling pin/pastry pin. Formed skins are trimmed to diameter and dressed for baking, usually at 500 to 550F.

Tom Lehmann/The Dough Doctor

724

[/ Re: Help - looks like dough is being eaten from the inside out](#)

What was the total dough absorption for each of the doughs?

Tom Lehmann/The Dough Doctor

725

[/ Re: Help - looks like dough is being eaten from the inside out](#)

Can you share your complete dough formulas? What I see in the photos of the dough balls is a case of insufficient dough absorption, this is especially evident with the two rye dough balls. The stickiness you noted with the rye dough is totally normal for rye, and depending upon the strength of the white flour that you're using VWG will most likely need to be included in the dough formulation

NOTE: Depending upon the type of rye flour (light, medium or dark) the absorption of the rye flour will be something between 68 and 75%. Plus, if it's a pumpernickel rye flour it will require a soaker.

Tom Lehmann/The Dough Doctor

726

[/ Re: center of pizza too thin....](#)

You didn't mention anything about the size of the dough skin or the weight of the dough ball, this can have an impact on it too. If the problem is just due to opening technique you might want to try this to get things started:

Use a rolling pin to open the dough ball to within 2-inches of the desired diameter, then finish opening the dough by hand.

I've got a video of this procedure being used commercially. It works well and we get individuals who have never opened a dough ball by hand doing it in no time at all. Once you begin to get the hang of it you won't need to use the rolling pin anymore. P.M. me with your email address or send me an email at <thedoughdoctor@hotmail.com> and ask for the dough opening video.

Tom Lehmann/The Dough Doctor

727

[/ Re: Dense cornicione in a Neapolitan style pizza](#)

That's more like it! ^^^

Now you can adjust the amount of dough in the rim portion when you open the skins and also adjust how far out you spread the sauce to achieve the rim you want.

Tom Lehmann/The Dough Doctor

728

[**/ Re: Crust doesn't brown**](#)

One other thing I might add, have you confirmed the actual temperature of your oven using a calibrated thermometer or an IR thermometer? In many cases where one is baking directly on a stone or steel the oven door is left open for some time which DRAMATICALLY reduces the actual oven temperature at the time the pizza is placed in the oven. You can use an IR thermometer to measure the temperature both before and after placing the pizza into the oven. If you don't own one of these handy devices they are readily available from most home stores as well as Harbor Freight and online sources too. I recently picked up yet another one, this time for use in the garage, from H.F. for just \$17.00.

Tom Lehmann/The Dough Doctor

729

[**/ Re: Article on Lactic Acid**](#)

Those "industry created shortcuts" are made by fermenting flour and water to create the lactic acid and then spray drying or roller drying with sufficient temperature and time to inactivate the material. The problem is that there is primarily only one acid present, lactic, while in a naturally fermented dough or even a sourdough there are other acids present as well which changes the entire flavor profile. This is one reason why my suggestion for using these products is to incorporate some regular fermentation into the dough and use the inactive sourdough material at only 1/2 of the LOWEST recommended level and work up from there if necessary.

Tom Lehmann/the Dough Doctor

730

[**/ Re: Crust doesn't brown**](#)

For your next try turning the broiler on 15-minutes before putting the pizza into the oven (this is after a 1-hour pre-heat time) and increase the sugar level in your dough to 3%, or three times what you are presently using. Don't make any other changes but do record everything that you do. Let us know if this provides further improvement in crust color.

The dryness you noted in the crust is due to the par-baking of the crust. Par-baked crusts are always significantly lower in finished moisture content than single baked crusts.

After you get a baking steel you should be able to open the skin, dress it and bake it without par-baking.

Tom Lehmann/The Dough Doctor

731

[**/ Re: Domino's Pan Pizza Dough Fermentation days**](#)

I'm guessing 48-hours and 0.4% IDY.

Tom Lehmann/The Dough Doctor

732

[/ Re: How do I tell when dough is over-proofed?](#)

For pan pizza most go by just the risen height of the dough in the pan. Pizza Hut used to have a mark/line stamped into their deep-dish pans as an indicator of how high to allow the dough to rise.

Tom Lehmann/The Dough Doctor

733

[/ Re: cooked green peppers](#)

At one time we used to see a lot of pizzerias blanching the green pepper slices for use in a slice operation. The reason for this is because the blanched slices do not weep (give up water) as fresh pepper slices do. They might have been using some form of canned green pepper slices but that would also be pretty close to blanched too.

Saute them as suggested will accomplish much of the same thing, something to experiment with.

Tom Lehmann/The Dough Doctor

734

[/ Re: Dough balls "spreads out" to much in the box](#)

Here is a simple trick that I've used any number of time where refrigeration was non-existent, follow your present procedure BUT withhold 1/2 of the flour and 1/3 of the water. After the dough has fermented for the desired time, on the morning that you want to make pizza add the remainder of flour and water to the fermented dough mass, mix in well, then immediately scale and ball, place dough into lightly oiled containers, lightly cover (NOT AIR TIGHT), and allow to ferment until you are ready to make your pizzas (at least 6-hours), turn dough out of the container onto a flour dusted bench, dust the dough ball on both sides and open into a skin by your preferred manner, dress and bake.

Tom Lehmann/The Dough Doctor

735

[/ Re: Dough balls "spreads out" to much in the box](#)

CC;

Your picture graphically shows what a totally over fermented and collapsed dough looks like.

If you are to continue making pizza under those conditions you will need to reduce the amount of yeast dramatically, how much I cannot say as I don't know anything about the temperature at which the dough was fermented at but for starters I would suggest something around 0.05% (0.4-grams) CY/fresh yeast.

Now, I see that you have a question mark by the "fresh" when referencing the yeast, does this mean that the yeast is of questionable quality/freshness/age? Old yeast or improperly stored CY (stored at temperature above 40F/4.4C) can release glutathione into the dough resulting in an overly soft/extensible/weak/sticky dough. If your yeast was stored in the fridge with the broken thermostat this might be a contributing factor.

Also, I might add that if you are machine mixing, your mixing process can be made a little more direct by just putting the water into the mixing bowl, adding the yeast and then adding all of the flour and salt, then begin mixing. Your first three steps as shown serve no practical purpose with CY when machine mixing.
Tom Lehmann/The Dough Doctor

736

[/ Re: I don't ask for much.....but I ask now for your prayers.....](#)

Your family is in our prayers.
Tom Lehmann/The Dough Doctor

737

[/ Re: Chicago deep dish browning question](#)

Bob;
Egg Shade is the coloring material used by many pizzerias in Chicago, since it's available on line and relatively inexpensive you might want to order some. Many pizzerias use 6-ounces for a 50# flour dough so you can use that to calculate the amount you will need in your dough. The darker colored dough will absorb more heat which will help with the browning of the dough.
If you can only bake at 450F can you move the oven shelf to a position closer to the heat if you have bottom heating?
Assuming you are allowing at least an hour for the oven and steel to heat before baking.
If all else fails try removing the pizza from the pan and placing it right on the steel for a minute or so to achieve a stronger bottom bake.
Tom Lehmann/The Dough Doctor

738

[/ Re: Dense cornicione in a Neapolitan style pizza](#)

Your dough looks kinda dead to me so I'm guessing it's your yeast.
Tom Lehmann/The Dough Doctor

739

[/ Re: Pizza dough in bread machine?](#)

What you are looking at there is essentially a no-time dough or at the very best a short-time dough, neither of which will win any contests for the best tasting pizza crust. It's OK for a "feed me" pizza but that's about where that road ends. Why not just go for an over night fermentation at room temperature? If you are using IDY reduce it to 0.1% (be sure to suspend it in a SMALL amount of 95F water then add it to the dough water, no need to activate as ADY. If using ADY use 0.125% and hydrate/activate according to directions, if using CY use 0.25% and put directly into dough water and whisk to suspend then add to the mixer. Adjust the dough water temperature to 50F and allow to mix just long enough to achieve a smooth dough consistency. Divide into desired weight pieces and ball, place into lightly

oiled containers and cover with a piece of foil (DO NOT SEAL TIGHTLY), place in a cool spot to ferment for 18 to 24-hours, then turn out of the container(s) onto a flour or fine corn meal dusted surface, coat the dough ball well and open into a skin by your preferred method, dress and bake.

Tom Lehmann/The Dough Doctor

740

/ Re: Chicago deep dish browning question

First things first:

- 1) Are you using a dark colored deep-dish pan?
- 2) Are you baking at an honest 525F?
- 3) Are you using margarine or Butter Flavored Crisco in the pan?
- 4) What are you baking on (stone, steel, grid)?
- 5) Do you use Egg Shade coloring in the dough?

Tom Lehmann/The Dough Doctor

741

/ Re: need some bread consulting, dough made, broken fridge

Please explain/describe what you have including the dough formulation.

Tom Lehmann/The Dough Doctor

742

/ Re: Crust doesn't brown

By all means add sugar to your dough, 2% is a good starting point but you can go higher if you want. You seemed disappointed that the 2% sugar didn't give the crust a sweet taste, pizza crust is not typically sweet tasting but if you want to have a sweeter tasting crust you have to go to at least 5% sugar for starters. If you are baking with the broiled element on that's why your cheese is getting browned too fast. You might try moving the pizza to a lower rack position. Additionally, how long are you preheating the oven/stone? You want to preheat for at least 1-hour. A baking steel will probably help a lot.

Hand kneaded dough will always be more sticky than a machine mixed dough that is properly mixed, that's not a problem though as the condition will improve as the dough is allowed to ferment.

Your bread flour should be just fine in it is malted (check the bag).

In the mean time some things you might need to do:

- 1) Place the cheese in the freezer for 30-minutes prior to use.
- 2) Tent the top of the pizza with a piece of foil for about the first 5-minutes of the bake time (you will need to experiment).
- 3) If you are getting bubbling during baking the dough might be too cold (did not allow to warm to 55F internal dough ball temperature), par-bake with 1/2 of the sauce applied to the skin usually fixes the problem, or you may need to also dock the skin prior to dressing.

This is all based on the assumption that you are correctly following my dough formula and dough management procedure.

Tom Lehmann/The Dough Doctor

743

[/ Re: need some bread consulting, dough made, broken fridge](#)

If its just a leaven we're talking about I'd set it outside, it should be just fine.
Tom Lehmann/the Dough Doctor

744

[/ Re: Substitute power flour for bread flour](#)

If you are running a short fermentation schedule you may need to add a little more fermentation time but if you are fermenting your dough as most of us do, 24-hours or more, you probably won't ever see the difference.
Tom Lehmann/The Dough Doctor

745

[/ Re: Water Loss](#)

It is common knowledge that salt impacts yeast activity at levels above 1.5% in most dough formulations. This is addressed quite easily by an increase in the yeast level. Essentially all dough formulations which you find are already have the yeast level adjusted for the salt level to achieve a decent fermentation rate. If you want to see this for yourself just make a double size dough without any added salt, then mix until the dough comes together and forms a mass, remove from the mixing bowl, weigh the dough, divide it into two equal weight pieces, put one piece back into the mixer and add 1% salt based on the weight of flour in the dough piece, mix the dough for another 5-minutes, remove from the mixing bowl and cut off 75-grams, form into a ball and place into a lightly oiled tall drinking glass. Do the same thing with the other dough piece but add 3% salt to it, lightly tent each glass with a small piece of foil and set side by side to observe how the dough rises in each glass over the next several hours.

To see the affect of salt on gluten strength make two doughs, one without any added salt and the other with 2% added salt, pay close attention to how the gluten develops as well as how the dough feels at all stages of development.

Salt has a tremendous impact upon the taste of the baked product, when insufficient salt is used the finished product has a "starchy" taste and when excessive salt is used it has a salty taste. Some people like the salty taste while other do not, plus there are a lot of people who recognize the potential health concerns associated with excessive sodium in their diet so they try to limit sodium consumption. Salt by itself is not a flavoring but instead it should be used only to accentuate flavors already present.
Tom Lehmann/the Dough Doctor

746

[/ Re: how to get cornicione](#)

All of which contribute to oven spring, which without you would have nothing much more than a large poker chip.

Tom Lehmann/The Dough Doctor

747

[/ Re: Newbie looking for a basic beginner recipe for home oven](#)

Grease Wheel: You left the door open on this one! :-D
With GUSTO!

Artimas: Can you please describe the differences you are seeing?

There is a quantum leap between the average pizzeria and the average home kitchen when it comes to making pizza dough, but the biggest difference that I've seen is in how the dough is refrigerated. Most home refrigerators are really not all that good for dough storage as in many cases they lack the necessary refrigeration capacity but more importantly it is small in comparison to a walk-in cooler or even a commercial reach-in cooler so every time the door is opened the temperature fluctuation is significant, it may not seem so, but it is. This temperature fluctuation will have a significant impact upon the dough over the course of 24 and more hours. In many cases we can address this by targeting a lower finished dough temperature or by modifying our dough management procedure to better accommodate our unique conditions under which we make our pizzas. When teaching pizza making at homes I always tell everyone that the first thing we need to do is to have a dough formula and dough management procedure that allows us to make a decent pizza, then we need to fine tune it to allow us to make a great pizza on a consistent basis (this is a real confidence builder), after that I encourage them to experiment making different types of pizzas/pizza doughs/crusts, such as wheat, whole-wheat, multi-grain, Tex-Mex, Asian, based on thin crust or deep-dish formats (whatever their family preference is). Pizza making should be a family fun adventure in pizza cuisine, and now that we're hopefully all at home with our families this is a great time to get everyone involved in the pizza making process. My wife and I have made a pizza together for dinner for the last two days, the first one was a vegetarian topped N.Y. style and last night's pizza was a shrimp topped pizza with Alfredo sauce instead of a red sauce seasoned with dried dill from our garden last year, then we added left over vegetables from the previous night's pizza preparation. No complaints from my better looking half! Like the old adage goes, "Happy wife, happy life" ;D

Tom Lehmann/The Dough Doctor

748

[/ Re: Pizza Expo/Tom Lehmann](#)

I have to plead innocent as I know nothing about it. I've not been contacted nor informed of anything. I am sure there is a lot of confusion and work going on over this whole thing of needing to cancel Pizza Expo so when/if something falls through the cracks it is totally understandable. I give them full credit for their attempts to provide a level of training the industry desperately needs right now.

Tom Lehmann/The Dough Doctor

749

/ [Re: Instant dry yeast](#)

In one word: Absolutely! IDY is no different than ADY or CY when it comes to application and performance. 24 to 48-hours is not really considered to be a long fermentation time in the realm of pizza dough. If you have a balanced dough formula and have an effective dough management procedure the amount of IDY to use for 24 to 48-hours CF will probably be in the in the range of 0.3 to 0.4%.
Tom Lehmann/The Dough Doctor

750

/ [Re: Water Loss](#)

You are confusing bakers percent and "true" percent which is based on the total dough or meat weight. To convert a dough formula into true percent just divide the individual ingredient weights by the total dough weight and multiply by 100. The problem with using true percent with dough formulations is that if you change any one ingredient you have to go back and recalculate the percent for each of the other ingredients.

By the way, there isn't that much difference in finished moisture content between a high absorption and low absorption dough until you drop down into the 40% and lower absorption range.

Tom Lehmann/The Dough Doctor

751

/ [Re: Water Loss](#)

Why would you want to do that when the salt percentage is based on the flour weight?

Tom Lehmann/The Dough Doctor

752

/ [Re: Pizza Expo/Tom Lehman](#)

Huh? ??? ??? ??? ??? ??? ??? ???

Tom Lehmann/The Dough Doctor

753

/ [Re: Water Loss](#)

A fully baked pizza crust will typically come in at between 22 and 28% moisture content as compared to white pan bread at 38 to 40% and pretzels which come in at 2 to 4% moisture content.

Tom Lehmann/The Dough Doctor

754

[/ Re: Over night proof](#)

Your dough formula contains a SLUG of IDY as well as a SLUG of salt! I would suggest bringing the IDY down to about 0.15% and the salt down to 2% or 2.5% if you're addicted to salt. In addition to dough formulation the temperature of the room where the panned dough is being proofed as well as the temperature of the dough at the time of panning are also critical factors that enter into determining the correct yeast amount, without this information my suggestion for yeast amount should be considered as an educated SWAG.

Tom Lehmann/The Dough Doctor

755

[/ Re: Do you mix by hand or use a mixer?](#)

Really nothing to washing it, just use a hard plastic scraper to scrape the bowl out when you remove the dough then straight to the sink where it's filled with hot water, agitator then goes into the bowl and I get back to my pizza making chores. After the dough is put up I go back to the sink and finish washing the bowl and agitator and wipe down the mixer with a damp towel. Since we are not blessed with acres of counter space I find it more troublesome to drag the mixer out from its hiding space than to wash it.

Tom Lehmann/The Dough Doctor

756

[/ Re: Proofing tray storage](#)

How deep are your trays?

Tom Lehmann/The Dough Doctor

757

[/ Re: Do you mix by hand or use a mixer?](#)

I use both methods. When at home I will use the KA about 3/4 of the time but when away from the house I use hand mixing almost exclusively. For small batches I can't say that I have a preference but for larger batches or multiple doughs machine mixing wins out every time.

Tom Lehmann/The Dough Doctor

758

[/ Re: Bubbles in fried dough](#)

I think two things might be responsible, too much fermentation and frying the bread at too low of a temperature. I'd suggest reducing the fermentation time to 3-hours and adjusting the temperature of the frying fat to 370F/188C. Also, I'm guessing that you are using fresh oil for frying, this is not the best to use, though you probably have little choice. Believe it or not, a blend of about 25% old frying fat and 75% new frying fat is superior to 1% all new frying fat. One other thing, be sure to fry the items submerged.

You might incorporate these changes and let us know if you see any improvement.
Tom Lehmann/The Dough Doctor

759

/ Re: Processor for NY Style?

Peter;

Wow! You really did dig deep to find that one from 2003!

The SAF/Lesaffre Yeast Corporation water temperature calculation that is mentioned in the article is still available but here it is just in case someone wants it right away.

This is designed for doughs which will have a targeted desired finished dough temperature in the 82 to 88F range.

Here is the calculation:

145 minus flour temperature = desired water temperature.

While this is designed for commercial planetary mixers with a friction factor of about 30 it can be easily modified to any other type of mixer. It will take a little trial and error, but once you have it it's a handy tool to have.

- 1) Use the above equation to make a dough, measure the finished dough temperature.
- 2) If the temperature is more than 5F too high or too low recalculate the water temperature using 145 plus 10 (if the temperature is too low or 140 minus 10 if the temperature is too high).
- 3) Make a dough using the new calculated water temperature and measure the finished dough temperature. If the finished dough temperature is within 5F of your targeted finished dough temperature you're good to go, if not make another adjustment to the 145 number and repeat.

Once you have the number needed for your mixer to give you YOUR desired finished dough temperature the only variable will be the flour temperature so from that point on all you will need to do is to measure the temperature of the flour and subtract it from "your number" to get the desired water temperature.

Tom Lehmann/The Dough Doctor

760

/ Re: Bubbles in fried dough

There is an old quip that goes something like this "I'd like to help you out but I don't know how you got in", in this case I'd like to help you out but I don't have any information on what you are doing. It would be of great help if you could please provide the dough formulation and complete dough management procedure including frying conditions. I've got an idea but I really do need more information.
Tom Lehmann/The Dough Doctor

761

/ Re: How to get less rise but more flavor

With 0.3% IDY and a finished dough temperature in the 75 to 80F range I've found that 48-hours CF is needed to really develop a decent flavor, and if you can wait that long, 72-hours might be even better. In the end though the fermentation tolerance of your flour and, how well you manage your dough and YOUR specific tastes will dictate the CF time.

Tom Lehmann/The Dough Doctor

762

/ [Re: Dough seems too airy after proofing](#)

We're looking forward to seeing your progress.

Tom Lehmann/The Dough Doctor

763

/ [Re: Processor for NY Style?](#)

It's also good to keep in mind when mixing the dough that all you are looking for is a dough with a smooth appearance, once the dough takes on a smooth appearance it has been sufficiently mixed. With time and developed expertise you will be able to better fine tune the dough mixing specific to your dough management procedure and desired finished crust characteristics, but for now I suggest just mixing for the smooth appearance. One other thing, with a food processor it is better to error on the under mixed side than on the over mixed side.

Tom Lehmann/The Dough Doctor

764

/ [Re: How to get this dough? Thin crust, crispy \(but not dry\), puffy and soft inside](#)

Micko;

Please post the dough formula, mixing and dough management procedure you used to make your pizza. Also, be sure to provide the finished dough temperature. I agree that 45 to 50% absorption seems awfully low, this is more like the absorption that is used to make a thin crispy type of pizza. If the ingredient amounts provided to you were in "pinches, drabs and dribbles, I think we may just need to start over fresh with a dough formula that you can manipulate to give you the desired finished crust characteristics that you are looking for.

Tom Lehmann/The Dough Doctor

765

/ [Re: Saucing with uncooked fresh tomatoes](#)

My ALL TIME FAVORITE substitute for sauce is to use thin sliced fresh, ripe tomatoes (operative word being "ripe"). Slice about 3/16-inch thick, place on towel to remove excess juice. Brush dough skin lightly with oil, apply fresh garlic and fresh basil leaves and then apply the fresh tomato slices (don't peel) as that's where all the flavor is at. Add cheese and toppings and bake.

Let us know what you think.

Tom Lehmann/The Dough Doctor

766

[/ Re: Recanning Stanislaus Tomato Sauce](#)

"Cooked sauce, so no worries" about what?
Tom Lehmann/The Dough Doctor

767

[/ Re: Neapolitan pizza in home oven](#)

A good Neapolitan pizza will need to be baked at a much higher temperature (750 + F). How about a slightly modified New York style pizza formula?
Tom Lehmann/The Dough Doctor

768

[/ Re: How to get less rise but more flavor](#)

I can comment on a number of things that I see here.

- 1) The salt level is low at only 1.5% I suggest increasing it to 2 or 2.5% to better control the fermentation rate. This will also improve crust flavor too.
 - 2) You might want to reduce the IDY down to 0.3% (a 25% reduction in amount).
 - 3) 6-hours out of the fridge before opening the dough is indeed too much, use a thermometer to measure the internal dough ball temperature and when it reaches 55 to 60F then proceed with opening it into a skin. My guess the time will be closer to 2-hours than 6-hours.
 - 4) If you really want to have a thin crust you really need to use a rolling pin to fully open the dough ball into a skin and you may need to dock the skin after opening.
- Tom Lehmann/The Dough Doctor

769

[/ Re: Need Help with Fermentation Process](#)

Your dough looks fine in each photograph, I wouldn't suggest making any major changes except to "make it your own". As long as you have some type of sugar in your dough you can use "00" type flours at the lower baking temperatures, but to be honest with you, I'd be highly tempted to experiment with a more typical bread type of flour rather than the "00". You might like what you get from it, but then again, you might not, try it to find out.

What is the baking time for your pizzas?

The crumb structure looks OK for what you are doing but then again, experimentation might allow you to improve it somewhat. To go this route I'd suggest incrementally increasing the dough absorption (2% increments) to see if that helps.

I'd also experiment with ways to bake the pizza longer, perhaps try laying a piece of aluminum foil over the top of the pizza at the end of the bake and leave it in the oven for an additional minute, or so. See, now that you have a decent pizza to experiment with the real fun begins, that's what I mean by making it your own. Don't be afraid to experiment, just change only one thing at a time and record

everything you do, remember, you're making PIZZA, not nitroglycerin so have fun, and remember that your mistakes can taste as good as your successes! :chef:
Tom Lehmann/The Dough Doctor

770

[**/ Re: 8h@RT Whole Wheat Pizza Dough**](#)

Your dough really isn't a whole-wheat dough as it is only 36% whole-wheat flour, so it is more correctly referred to as a "wheat" dough. I see that your total dough absorption is 60% which might be a bit low for this type of dough as wheat and whole-wheat doughs tend to perform better at a higher absorption. My suggestion would be to make the dough again but increase the dough absorption to 65% and fine tune it from there if things look better. Keep in mind that wheat and whole-wheat doughs should be slightly tacky to the touch as opposed to dry.

You may also find that an autolyze will also help. To make the autolyze put all of the whole-wheat flour into a container with an equal amount of water, stir to suspend the flour in the water and let set undisturbed for an hour, then add it to the mixing bowl along with the the remainder of the dough ingredients and mix the dough in the normal manner. You may find that this will allow you to increase the dough absorption even more for an even more open crumb structure.

Tom Lehmann/The Dough Doctor

771

[**/ Re: Standard Thick Crust Recipe - Basic Pizza**](#)

Areed, that's some fine lookin' pizza! :drool:

Next time try something a little different by using some Crisco or some other form of plastic fat (margarine, butter, lard, etc.) on the sides of the pan and use some oil in the bottom, then bring the cheese all the way out to the edge of the pan, that'll put a Detroit twist on your pizzas.

Tom Lehmann/The Dough Doctor

772

[**/ Re: Standard Thick Crust Recipe - Basic Pizza**](#)

Be sure to cover the deep dish pans with foil or they will dry out for sure at 110F! I can only say that IF your dough is between 80 and 85F when it is panned and set on the oven it will most likely take between 30 and 45-minutes using the dough formula I provided. We used it for over 30-years so I know how it performs, and other dough formula?

Tom Lehmann/The Dough Doctor

773

[**/ Re: blending whole wheat?**](#)

Andrew;

Whole wheat flour certainly qualifies as a high extraction flour, by definition it is 100% extraction. There are differences between different whole-wheat flours, for

example there are whole-white wheat flours (milled from hard white wheat varieties). There are also whole-wheat flours milled from soft white wheat varieties which are referred to most commonly as graham flour. Now you know where graham crackers get their name. For this discussion we will limit ourselves to just the whole-wheat flour made from hard red wheat varieties as they are the most commonly used. There are differences in the particle size of the whole-wheat flour with "stone ground" being the coarsest, and then there is what is referred to as "steel cut" which looks like chopped/granular pieces of the wheat berry (hard to call it a flour), and then there is just a common whole-wheat flour which is what most of us relate to when thinking of whole-wheat flour. Since you are looking at replacing a regular whole-wheat flour with a stone ground type (it isn't actually ground on a stone anymore except maybe by some small independent retail millers), Be aware that the bran pieces will be larger and exert a more pronounced cutting effect upon the gluten film, and the larger pieces of bran will take longer to hydrate so I would highly encourage you to think about using the whole-wheat flour in an autolyze. Use sufficient water in the autolyze to make a thick pasty consistency and let it hydrate for about an hour. To figure the total dough absorption use 60% for the white flour and 75% for the whole-wheat portion of the flour blend and you should be pretty close. Mix the dough just until it begins to develop a smooth skin, DO NOT OVER MIX. Target finished dough temperature will be 75 to 80F. Don't get fancy with fermentation, mix, scale, ball, cold ferment NOT MORE THAN 24-HOURS. Don't skip the cross-stacking and tempering periods after the cold fermentation and you should be fine.

I've never heard of wheat or whole-wheat items described as having a "buttery" aroma, it is almost universally described as being "nutty", however, with that said, in all of my whole-wheat dough formulas I always use butter, seldom ever oil which does indeed impart a nice buttery aroma and taste to the finished produce, especially when you have the butter (Butter Flavored Crisco works well too) up at 5% or more. Also, you may find that a wheat or especially a whole-wheat dough benefits from a slightly higher yeast level.

You should have no issues at all substituting 25 to 30% whole-wheat flour for an equal amount of white flour in your pizza dough while retaining pretty normal dough handling properties.

Tom Lehmann/The Dough Doctor

774

[/ Re: Standard Thick Crust Recipe - Basic Pizza](#)

Between 3/8 and 1/2-inch thick depending upon how thick you want the final crust to be. I suggest starting at something around 1/4-inch thick and then make another one a little bit thicker until you find what you like.

Tom Lehmann/The Dough Doctor

775

[/ Re: SAF IDY](#)

As the name indicates what you are looking at is ADY (active dry yeast). It is different in a number of ways from IDY but the main thing to remember is that when using ADY in must be hydrated and activated prior to use. Do this by putting the ADY into about 5 times its weight of 100F/38C water. Be sure to put the yeast

into the water, not the other way around. The water that the yeast is hydrated/activated in should be considered as part of the total dough water. Stir the yeast to suspend it in the water. Allow the suspended yeast to set for about 10-minutes to activate, then stir and pour into the dough water in the mixing bowl, you are now ready to add the remainder of ingredients and begin the mixing sequence.

Tom Lehmann/The Dough Doctor

776

[**/ Re: Transferring High Hydration Dough from Dough Tray**](#)

While it can be done, I think as a novice, working with high absorption and long fermentation doughs you would be much better served using individual dough containers that have been lightly oiled.

Tom Lehmann/The Dough Doctor

777

[**/ Re: Standard Thick Crust Recipe - Basic Pizza**](#)

Just a guess here but I'm guessing that the flour was mis-scaled, maybe only 1000-grams or the tare of the container wasn't accounted for. Try to get a weight on what you have, it might give a clue.

Tom Lehmann/The Dough Doctor

778

[**/ Re: Standard Thick Crust Recipe - Basic Pizza**](#)

I don't have any "recipes" but here is a good formula for one;

Strong bread type flour (12 ro 12.8% protein content) 100%

Salt: 1.75%

Sugar: 2%

Shortening (Butter flavored Crisco, butter, margarine, non-deodorized lard, etc.) 4%

IDY: 0.4%

Water: (65F) 64%

Target finished dough temperature: 75 to 80F.

Mix to a smooth dough consistency, take directly to the bench for scaling and balling, wipe dough balls with salad oil, place in individual plastic bread type bags, twist open end into a pony tail and tuck it under the dough ball as you place it in the fridge. Cold ferment for 24 to 48-hours, remove from fridge and allow to warm to 60F INTERNAL ball temperature, roll bag down around the dough ball and invert over a floured surface, flour both sides of the dough ball and using a rolling pin or pastry pin open to a diameter slightly larger than your pan. Prepare the pan by applying oil to the inside of the pan, you want to have a well oiled pan. Place the opened dough into the pan and set aside for about 20-minutes, then using your hands/fingers finish stretching the dough to completely fill the pan, drape with a plastic sheet and allow to final proof for about 45-minutes (time will be variable depending upon the thickness you want in the finished crust). Dress the skin to

within 1/2-inch of the edge and bake or using your fingers, pull the dough up on the edge of the pan just before dressing. Bake at 450 to 500F on a grid type oven shelf. You may need to rotate and change shelf position after about 12-minutes of baking. Remove from pan immediately after baking.

Note: A dark colored pan or a well seasoned pan is by far the best pan to use, a 1.5 to 2-inch edge height is desirable.

Tom Lehmann/The Dough Doctor

779

[/ Re: Need Help with Fermentation Process](#)

No, why not just pyramid stack them or lay a piece of wood (or how about a table knife) across the top of the bottom containers and then stack on top of that? Where there's a will, there's a way.

Tom Lehmann/The Dough Doctor

780

[/ Re: Need Help with Fermentation Process](#)

I can see a few things that might be creating a problem for you.

1) 25% (400-grams) of your total flour is a durum semolina flour which creates a very tough, elastic gluten. I would suggest replacing the durum semolina flour with your organic bread flour or the "00" flour.

2) You are adding 22% sourdough starter which I think is excessive, try using it at 1/2 of the present level.

3) You mention using the "window pane" test to check for gluten development, this is ONLY FOR BREAD, it is not used for pizza dough as pizza dough is not mixed the same as a bread dough. Instead, just mix the dough until it has a smooth appearance, more mixing than that is not needed nor desirable.

4) Since you have a spiral mixer I'd like to propose a different, more direct mixing method. Put water in the mixing bowl (20 to 21C), then add the starter followed by the flour (all of it), add the salt and mix until all of the flour has been hydrated then add the oil and continue mixing until the dough takes on a smooth, satiny appearance. Measure the dough temperature, it should be in the 23 to 27C range. Take the dough directly to the bench for scaling and balling, lightly oil each dough ball and place into fermentation container(s) , DO NOT APPLY LIDS, leave the containers open in the fridge until the internal dough ball temperature reaches 10C then cover/lid the containers and allow to cold ferment for 24-hours (the dough will probably be at its best after 48-hours). You might want to make some pizzas from the dough after both 24 and 48-hours to see what works best for you. When you're ready to use the dough balls remove from the cooler and place at room temperature ONLY until the internal temperature of the dough ball reaches 10 to 15C, then turn the dough ball out onto a floured surface and open into a skin by your preferred method, dress to the order and bake.

Let us know how this works for you, provide some pictures if you can.

Tom Lehmann/The Dough Doctor

41

[/ Re: Cold Bulk Fermentation questions](#)

I wouldn't say that your time was limited in any way unless we are talking about a commercial pizzeria setting, but as the dough temperature increased after the cold refrigeration period the dough will not get any easier to work with and in fact, it might even begin to get gassy to the point where bubbles in the dough become an issue.

Tom Lehmann/The Dough Doctor

42

/ [Re: Pizza Dough over rising and deflating?? Help](#)

You tossed them out? Remember what we always say; Even our mistakes can taste pretty good too! If nothing else it would have been a good learning experience for you in opening a soft/slack/extensible dough which you might not otherwise get. :'(

Tom Lehmann/The Dough Doctor

43

/ [Re: longer RT sourdough fermentation](#)

I've visited a lot of different type of forums over the years and one thing that I can attest to is that pizzamaking.com is one of the most sharing (by all participants), respectful and civil of all the forums. This is in great part due to the tremendous efforts of Peter, which in my world don't go unnoticed. Pizzamaking.com, if not already, is well on its way to becoming the most recognized collective authority for knowledge for the home/hobby pizza maker in the world which is quite an achievement for all at Pizzamaking.com!

Tom Lehmann/The Dough Doctor

44

/ [Re: adding salt too early??](#)

Manually flatten the dough on the bench as you would for shaping bread dough to make a loaf of bread (plenty of good videos on the Internet), then fold the ends in a few inches and loosely roll (about 1.5 curls) like a jelly roll, place onto a lightly floured sheet pan, lightly dust the top of the dough and cover with a sheet of plastic and allow to relax for 20-minutes, or just until the dough can be easily rolled to a thickness of 1/2-inch/12.5-mm. for immediate cutting.

Tom Lehmann/The Dough Doctor

45

/ [Re: Dough is ripping while stretching, help!](#)

Make the dough again but next time use only 1/2 of the amount of starter. If that improves things you can begin incrementally increasing the amount of starter until you see or experience something you don't like, then back the amount down a little and that'll be the maximum amount you can use of that SPECIFIC starter.

Tom Lehmann/The Dough Doctor

46

/ Re: Cold Bulk Fermentation questions

After removing the dough from the fridge a good rule is to allow it to warm AT (NOT TO) room temperature until the INTERNAL dough ball temperature is in the 50 to 60F range. The dough will be a little firmer and easier for some to handle at the lower end of the temperature range while at the upper end the dough will be softer and more extensible and easier to open only if you possess the necessary skills to open a soft and extensible dough and peel it into the oven without creating a disaster.

Tom Lehmann/The Dough Doctor

47

/ Re: Neapolitan crust isn't puffing up

A couple of things that I see;

- 1) I'm assuming the 80 to 85F water is for activating the ADY, but that temperature is not correct, it should be 100 to 105F.
- 2) You are using ice water, but what is the finished dough temperature. The finished dough temperature is what sets the stage for the fermentation that is to come. If the dough temperature is too cold the dough ferments too slowly and if too warm it will ferment faster than anticipated.
- 3) I see you are using a poolish, how much of the total flour is in the poolish? How much yeast? Temperature of the poolish? How long do you ferment the poolish for?
- 4) Hand or machine mixing?

Tom Lehmann/The Dough Doctor

48

/ Re: adding salt too early??

One of the problems you can have by putting the salt into the dough after the fat has been added (high fat doughs only) is that it can be difficult to dissolve and disperse the salt in the dough unless the salt is a very fine granulation salt. The presence of salt in the dough prior to the addition of the fat will not have any impact upon how the fat disperses in the dough.

Are you making pizza or donuts from this dough? The picture that you attached looks more like a pizza skin. Normally when we open the dough for making donuts we open it to a thickness of about 1/2-inch/12.5-mm. using a rolling pin or a pastry pin to achieve a smooth, flat surface to the top of the dough sheet prior to cutting with a donut cutter for "hand snapped" donuts.

Tom Lehmann/The Dough Doctor

49

/ Re: Pale base, sad face.

I'm betting that if you read the label on the bag of flour that it will not mention anything about the addition of malted barley flour or enzymes. This would be an indication that you do not have a malted flour. The two options then would be to add more sugar or to buy some diastatic malt and add that to the dough. With the malt products that you have available to you locally you will need to add between 1

and 2%.

On a different note, I'd suggest investing in a low cost scale as well as a dial/stem type thermometer, this will allow you to begin scaling your ingredients as opposed to using "estimated" volumetric portions for your "recipe". With all of your ingredients in weight measures it will be easy to convert the formula into bakers percent which will then allow you to begin making effective changes to the formula to achieve your specific desired characteristics. By weighing your ingredients you will also significantly improve the consistency of your pizzas from one bake to another.

Tom Lehmann/The Dough Doctor

50

/ Re: Pizza Dough over rising and deflating?? Help

Bringing the dough balls up to room temperature after CF is probably not the best thing for you to do. Instead, allow the dough balls to warm AT (NOT TO) room temperature until the INTERNAL dough ball temperature reaches something in the 50 to 60F range, keeping in mind that the lower the temperature the easier the dough will be to handle and the higher the temperature (60F) the easier it will stretch, not a bad thing if you have the ability to work with a softer dough condition.

Tom Lehmann/The Dough Doctor

51

/ Re: adding salt too early??

I neglected to mention that in these cases the dough is mixed to just short of the desired gluten development before the fat is added, failure to do so might result in being unable to achieve the desired level of gluten development in the dough.

Tom Lehmann/The Dough Doctor

52

/ Re: adding salt too early??

When dealing with high fat content doughs it's preferable to add the salt right up front in the mixing process and hold the fat out (like with the delayed oil addition mixing method) only this applies to all types of fat, both liquid and plastic. The reason for this is because at high levels, in addition to interfering with flour hydration it also plays havoc on gluten development often resulting in atypically long mixing times.

Tom Lehmann/The Dough Doctor

53

/ Re: very sticky dough

When we say 100% fermentation we are saying that the dough has been fully fermented (ideally fermented) for the product being made under a specific set of conditions. For most white pan bread doughs using the straight dough procedure

and a finished dough temperature of 80F. 2.5-hours of fermentation time is typically considered to be 80% fermentation. However, this can change dramatically if you have a different finished dough temperature, more or less yeast, more or less salt, or a very strong flour. This is why we seldom use this expression of fermentation anymore. The one thing that we do concern ourselves more about is the fermentation tolerance of a flour, some flours are very tolerant to fermentation while others are not. We can see this with some of the Caputo flours where not more than 12-hours of total fermentation time is recommended. When I first started doing my research on pizza back in the mid-1960's it was thought that both bread and pizza production shared the same technology, but as we got into understanding more about pizza it was clear that pizza production had a technology of its own and it took us many years to unravel that technology.
Tom Lehmann/The Dough Doctor

54

/ [Re: How many times do you reuse your frying oil?](#)

It's important to note that in addition to daily filtering of the frying fat and cleaning of the fryer they are adding fresh oil every day too, this is important to note since by doing so you are continually diluting the old frying fat. In commercial operations it is not unusual at all to end up replacing 50 to 100% of the fat weight on a daily basis.

Tom Lehmann/The Dough Doctor

55

/ [Re: very sticky dough](#)

Probably not as you want a pizza dough to be more relaxed than it would be for making bread. If the dough is not relaxed (through fermentation) you will only be fighting it as you're trying to open the dough into a skin, and then if you are successful, it will most likely just shrink back in size during baking.

Tom Lehmann/The Dough Doctor

56

/ [Re: turkey pizza with leftovers?](#)

QJ;

If you don't mind the garlic a bechamel sauce works well or if you want something a bit more subtle a basic Alfredo sauce can be used equally as well.

Tom Lehmann/the Dough Doctor

57

/ [Re: yeast - fresh, IDY, ADY revisited](#)

I should also add that if you are mixing the dough by hand the preferred method for adding IDY is to put it into about 5 times its weight of 95F water (the temperature is critical with IDY) and all you need to do is to stir it to form a suspension, you can then add it directly into the remainder of the dough water in

the mixing bowl. If you have the salt in the water in the bowl it's important that the flour be ready to be added immediately following the addition of the IDY suspension. Also, unless you're doing it for the exercise, there is no benefit to stirring the salt into the water, just dump the salt and proceed to the next step. When it comes to making yeast leavened doughs temperature reigns supreme. Since temperature is the #1 driver of fermentation you will want to control it very closely and record it as part of your dough record keeping. For most of us, a finished dough temperature in the 75 to 80F range works well and if you're cold fermenting the dough we have some good practices for effective dough management posted here that might help you.

Tom Lehmann/The Dough Doctor

58

/ [Re: very sticky dough](#)

Amen! With practice comes proficiency, with proficiency comes new and even more exciting things to explore along the pizza making journey.

Tom Lehmann/The Dough Doctor

59

/ [Re: Rounder and divders](#)

Walter;

Remember the the battle cry of us AARPers! Work smarter! Not harder! :-D

Tom Lehmann/The Dough Doctor

60

/ [Re: How many times do you reuse your frying oil?](#)

Rancidity will even occur in the refrigerator or even the freezer. If it's going to be that infrequently it's a moot issue, fry, drain and discard.

If this is for a commercial application write it off as a bad idea.

Tom Lehmann/the Dough Doctor

781

/ [Re: SAF IDY](#)

The ascorbic acid is added only to counter the softening effect of the glutathione (yes, some is released during the drying and rehydration process).

The specific strain of S.C. used in the SAF GOLD has a high tolerance for sugar, but remember, SAF/Lesaffre is a French company so it was developed specifically for the French baking industry where low salt levels are employed when high sugar levels are used, this is why we see such limited use of it here in the U.S. as we typically use both high sugar and salt levels at the same time.

By the way, there is also a GREEN LABEL SAF which was developed specifically for use in frozen dough systems. We looked at this one too and didn't find there to be sufficient difference in performance over RED LABEL to justify its increased cost. Again, this is why we don't see it used more than we do. You might say that it's

hard to improve upon something as good as SAF RED LABEL.
Tom Lehmann/The Dough Doctor

782

/ [Re: yeast and flour supply chain?](#)

The big question though is, what are those individuals going to do once this is over?

Tom Lehmann/The Dough Doctor

783

/ [Re: Even during a pandemic, we'll never be this hungry](#)

Freezing, the great equalizer.

Tom Lehmann/The Dough Doctor

784

/ [Re: yeast and flour supply chain?](#)

When things normalize the hoarders will be sitting on a life time supply of unopened bags of flour. I'm betting that very few even know how to make bread and even fewer will ever try their hand at it after they can just pick it off of the supermarket shelf. Has anybody heard if there has been a run on MREs (meals ready to eat/modern day military rations)? I used to see people buying that stuff by the pallet! I think as much, if not more went to the civilian market as went to the military.

Tom Lehmann/The Dough Doctor

785

/ [Re: Oil in rim sticks to peel](#)

It sounds like you're using too much oil, just brush the top of the rim with oil, as the rim expands it will roll the sides down allowing the top to expand and become the outer edge of the rim. The thing about oil is that a little does the same job as a lot when you're putting it on the rim before baking.

Tom Lehmann/The Dough Doctor

786

/ [Re: SAF IDY](#)

Not all that well. It has a high tolerance to sugar but a VERY POOR tolerance to salt, so unless you are using 1% salt or less, I don't recommend it.

Tom Lehmann/The Dough Doctor

787

/ [Re: Even during a pandemic, we'll never be this hungry](#)

Back in the 80's during the great pizza price wars which also brought us "extended cheese product" (they had to do something to keep the price down) and since no one thought much of the quality of a frozen pizza it really didn't matter because as mentioned, even back then people were buying the cheapest on the shelf and "doctoring" with their own toppings. I worked with a frozen pizza company (Fellini's Pizza) out of Topeka, KS at introducing the first really value packed frozen pizza (preceded Tony's Red Baron). While essentially all frozen supermarket pizzas were selling for \$1.00 each or a little less we developed and introduced an 11-inch frozen pizza that was REALLY LOADED with toppings (you could visibly perceive the value in that pizza). We sold it for \$3.00 for a single topping and \$4.00 for two toppings (in addition to cheese). For the cheese pizza we used a cheese blend along with 1/3 more cheese on the pizza (8-ounces total). The pizza was a huge success and it continually sold out at all of the Dillon's Stores here in Kansas. The television ad that was developed for it was as follows: A gurney is wheeled by a team of doctors and nurses towards the double doors of the operating room (this was shot at Stormont Vail Hospital in Topeka but when by a different name back then I believe) as the gurney approached the doors a nurse pulls back the sheet and proclaims " Wait! This is a Fellini's Pizza, it doesn't need to be doctored". Pretty corny I know, but it worked, it got the message across.

Tom Lehmann/The Dough Doctor

788

[**/ Re: What factors influence the amount of air in the cornicone?**](#)

A short time ago we discussed bulk and ball fermentation here. With such a small size dough you will not achieve any benefit to bulk fermentation. Because of this I'd suggest just balling the dough and then giving it the room temperature fermentation, then turn it out of the container onto a floured surface, flour the dough ball and open it into a skin ready for dressing and baking. You don't even have a pastry pin?

Tom Lehmann/The Dough Doctor

789

[**/ Re: Even during a pandemic, we'll never be this hungry**](#)

My first introduction to pizza was the Chef Boyardee home pizza kit about 60-years ago, as a kid I liked it but today it makes anything sold on a cardboard circle from a frozen case look pretty darn good but as noted, over time our tastes do change. That doesn't make them anything less of a pizza, they're just not at the top of my list anymore. But it is nice to know that when things get tough, it's not burgers and dogs, or even Mac & Cheese that people turn to in desperation, it's PIZZA! Doesn't make any difference the "ilk" of it, it's still PIZZA! :pizza: :pizza: :pizza:

Tom Lehmann/The Dough Doctor

790

[**/ Re: Correlation between hydration and cook temp and time**](#)

As a rule, the colder/cooler the dough is going into the oven the longer it will take to achieve the same bake as a warmer dough at the same oven temperature but

this difference is all but impossible to see in anything but an air impingement oven as the difference is measured in seconds, not minutes. You can also impact the baking of the top of the pizza by using colder toppings. We were able to see differences in top bake with cold v/s warm sauce and cheese in our deck ovens at 500F more so than in our air impingement ovens at 475F. You mention that you feel that your dough could use more water, why don't you increase the dough absorption in 2% increments to see what that does for you? A couple percent increase in dough absorption will not mandate a change in oven temperature. I normally think of pizza doughs as having a typical dough absorption in the 62 to 68% range for a N.Y. style pizza, cracker style doughs are a lot lower in absorption, typically in the 40 to 50% range with thin crispy doughs coming in at 52 to 56%. There are a good many Neo. style doughs as well as "traditional" style doughs which utilize what I refer to as high absorption (above 70%), these doughs can have an absorption of anywhere from 70 to as high as 82% with most probably falling in the 75 to 78% range.

Tom Lehmann/The Dough Doctor

791

/ [Re: What factors influence the amount of air in the cornicone?](#)

From what you are describing as well as your comments on "pushing" the dough lead me to believe that you might have a problem in the way you are opening the dough. Here is something to try, open the dough using a rolling pin or pastry pin but DO NOT open it to full diameter, instead just open it to within 36 to 50mm of the full diameter, then finish opening the skin to full diameter by hand. Be sure to provide us with the dough ball weight and diameter pizza you are making.

Tom Lehmann/The Dough Doctor

792

/ [Re: frozen/vacuum sealer pizza for delivery and pickup.](#)

My feelings exactly! ^^^ ^^^ ^^^
Let's put this in context here, someone buys a frozen pizza from you, just how long do you suppose they are going to sit on it before consuming it? An educated SWAG says less than a week. You can freeze just about any pizza or raw dough for that matter for up to 15-days without any disastrous change in quality, so if you put a manufactured/made-on date as well as a use-by date on the package quality should not be an issue, ingredient labeling, well that's a different issue. You just want to make sure you don't sell the pizza to someone who has an allergy specific to an ingredient or topping that you are using.

Tom Lehmann/The Dough Doctor

793

/ [Re: yeast and flour supply chain?](#)

I'm not sure I fully understand your question but as far as shortages in flour and yeast are concerned it is my understanding that neither is in short supply, but there are some regional supply/distribution issues especially at the store/supermarket level. From what I've seen and heard yeast is still widely available from on-line

sources, many have said the same for flour but shipping costs can dramatically increase the cost. You might check out any local restaurant supply facilities as they should have a good inventory of flour, maybe not exactly what you want but then this is a good time to learn to improvise. How long will this last? That's impossible to say but I think what we are seeing is spot shortages, none on the shelves today but they were full yesterday.

As to how often you should be baking bread and pizza, wow! That's a tough one to answer. I've got something over 200-pounds of flour on hand with plenty of yeast and baking powder so I'm pretty well set-up for the near future. Right now I bake every other day or so, bread, pizza, calzones, pies, cakes and kuchen. Yes, we have two chest freezers in the basement full of venison and pork as well as frozen and dehydrated vegetables, fruit and berries all from last years harvest so we're not in the same boat as our city brethren, the point is make what you can as often as you can with the amount of supplies you have on hand and as you're out and about on a "necessities" run keep an eye out for something you can use to justify firing up the oven. I was out this morning and I could have snagged two bags of KA Whole-Wheat Flour on the shelf or a couple cans of baking powder but I didn't.

Tom Lehmann/The Dough Doctor

794

[/ Re: frozen/vacuum sealer pizza for delivery and pickup.](#)

Not all foods are prone to clostridium contamination, clostridium is primarily soil borne, so think about things like garlic, carrots, onion, vegetables, etc as being more prone to it. Meats and fruits seem to be pretty safe but after that you're on your own. Just because something can be vacuum packaged doesn't mean that it will be safe to eat, the same can be said about canning foods too. If one wants to do something for their own family, that's fine, let's pray that nothing goes terribly wrong, but when we begin to market the product to other people, outside of our immediate family one has an obligation to ensure that food item is safe and sanitary, in my world playing Russian Roulette is not considered to be a safe activity so I'd rather see it frozen than vacuum packaged unless you have the microbiologist on staff to certify its safety.

Tom Lehmann/The Dough Doctor

795

[/ Re: frozen/vacuum sealer pizza for delivery and pickup.](#)

Clostridium aka botulinum is not destroyed by heat as is the aflatoxin that's so deadly. It can still be present after baking. Since it's an anerobe it doesn't grow in the presence of air only in an anaerobic environment (like a vacuum sealed package). There have been two documented cases of clostridium in vacuum packaged tortillas and one in bread from back in the 50's. The last case of clostridium poisoning that I read about was back in the 90s? where a young housewife in Indiana canned some low acid tomatoes using a high acid tomato recipe, the entire family died. Garlic is also a good or better candidate for clostridium when added to oil.

Tom Lehmann/The Dough Doctor

796

[/ Re: how is the Corona virus affecting business?](#)

Restaurants, bars, pizzerias, buffets all ordered to shut down to any dine-in, only DELCO is now allowed. The places not impacted are those that do delivery only like Domino's, the various sandwich shops, and Sonic. Most are hoping to just retain staff during these trying times, profits are on the back burner for now.

Tom Lehmann/The Dough Doctor

797

[/ Re: Recanning Stanislaus Tomato Sauce](#)

Again.

Only open what you need, the rest is already canned. If canning something twice would improve the product I'm sure Stanislaus would be doing it. Freeze only the remainder of the opened product, if you absolutely must, can only that portion of the opened cans. If you're worried about being able to get future product, deviate from your "norm" and use just a single product on your pizzas (desperate times call for desperate measures). I personally prefer to use just the 7/11 ground whole tomatoes (with peel) as my "go to" sauce. Another favorite is 74/40 Tomato Filets (I use the drained juice for my pasta sauce base) and the Saporito is used for what I call my "chunky" sauce.

I've been making more pizzas lately using just the frozen tomatoes from last years harvest, I drain off the juice and use the tomato for my sauce. The juice is used as a base for our next meal based on pasta. Last night I marinated a couple of chicken breasts in the drained juice then cooked the chicken in the marinade, cut it into pieces, added some vegetables (from the freezer) and cooked them in the marinade too, I then seasoned the marinade and added the cooked pasta and diced chicken, with some grated Parmesan cheese on top we had a great meal. Like I said, desperate times.....

In the end though it's your call.

Tom Lehmann/The Dough Doctor

798

[/ Re: Dough seems too airy after proofing](#)

Jack;

10-grams divided by 600 X 100 = 1.66% yeast. If it is ADY (active dry yeast) the level should be 0.5% or about 1/3 of what you are using. If it is IDY (instant dry yeast) the level should be about 0.375% or 22% (1/5th) of what you are using. Remember that with hand mixing the dry yeast, regardless of which type you're using should be suspended in about 5 times its weight of warm (100F) water prior to addition to the dough. If you are using ADY you will want to wait about 10-minutes for the yeast to begin to activate before adding it to the dough water but if you're using IDY all you need to do is to suspend the yeast in the water by stirring in well and then adding it to the dough water.

Check your finished dough temperature too, you will be looking for a temperature in the 75 to 85F range for hand mixed dough. This is adjusted by the temperature of the dough water.

After you take the dough out of the fridge only allow it to set out at room temperature until the internal dough ball temperature reaches 60F, more time than

that is not necessary and will probably put your dough opening skills to a greater test.

Tom Lehmann/The Dough Doctor

799

/ [Re: frozen/vacuum sealer pizza for delivery and pickup.](#)

DO NOT vacuum package the pizza as there is a potential for clostridium. All of the commercial operations use MAP (modified atmosphere packaging) but not vacuum. If you search back through the archives you will find earlier discussion on this topic.

Tom Lehmann/The Dough Doctor

800

/ [Re: Recanning Stanislaus Tomato Sauce](#)

I'm confused, why are you wanting to can 80-pounds of product when it is already canned? Why not just open a single can, use what you need and then break the remainder of the can down into smaller containers (about the amount you usually use in each container) and freeze? The other, unopened cans can be put away on a shelf for later use as you you need it. It keeps very well.

Tom Lehmann/The Dough Doctor

801

/ [Re: Need help with biga dough](#)

Why not just make a higher absorption biga? Put the water in the bowl first along with the yeast and then whisk the flour into the water as well as you can. This should give you a finished biga that will incorporate much more readily.

Tom Lehmann/The Dough Doctor

802

/ [Re: Pizza dough is instable and breaks/tears apart.](#)

I'm betting that the issue you're experiencing is mostly due to the agitator (dough hook) on your mixer. It is not really a reverse spiral design and it is very thin (small diameter) so it tends to drive through the dough without imparting as much stretching/kneading action that a thicker or cast agitator would impart. This means that your mixing time will need to be longer or at a higher speed if that is possible with your specific machine. In any case, try mixing your dough until the dough just takes on a smooth appearance and has an extensible skin.

Keep us posted on your progress.

Tom Lehmann/The Dough Doctor

803

/ [Re: Aluminum pans](#)

Most pans manufactured for baking, like bread, cake and sheet pans are anodized, with any other pans you will need to check the label or pan specifications. QuertyJuan brings up a good point, if you put a drop of concentrated detergent on the pan and leave it there for 15-minutes and the aluminum turns dark or black it isn't anodized but if no change in color is observed it's most likely anodized. The problem with raw (non-anodized) aluminum and dough is that the dough becomes progressively more acidic as it ferments and anything that is acidic or caustic (like soap) will at the very least etch the aluminum removing any oxidation in the process and leaving a very clean surface on the aluminum. The downside is that the food can easily pick-up a metallic aftertaste due to the aluminum oxide.
Tom Lehmann/The Dough Doctor

804

[**/ Re: Pizza dough is instable and breaks/tears apart.**](#)

QJ;
Excellent point but the Caputo Red should be sufficiently strong. Let's see what the "dough hook" looks like, it appears to be quite thin and if in the old "C" configuration it may not be developing the gluten very well.
Tom Lehmann/The Dough Doctor

805

[**/ Re: Aluminum pans**](#)

I'm guessing that your pans are not anodized to prevent oxidation. Aluminum oxidizes quite fast and what you are seeing is most likely the oxidation transferring to the dough. Next time make sure the pans are anodized to prevent this from happening. You can still salvage the pans though by wiping the INSIDE of the pan(s) with salad oil and baking in a 400F oven for about 30-minutes. Do this twice and then treat them as you would a seasoned baking pan.
Tom Lehmann/The Dough Doctor

806

[**/ Re: Pizza dough is instable and breaks/tears apart.**](#)

The dough does not appear to be very well developed even after 10-minutes of mixing, I can't tell from the pictures what the dough agitator/hook looks like, could you please send a picture of it laying flat on your work surface? Typically, a properly developed dough is mixed just until it takes on a smooth appearance which I do not see in any of the pictures. Just trying to figure out why.
Tom Lehmann/The Dough Doctor

807

[**/ Re: Dough with its own mind and mutated like a virus**](#)

No salt? Crust must taste awful.
Would need more information on mixing time, dough temperature and dough management procedure used.

Did the dough feel the same after 2-days than it did on the first day? I'm guessing it's related to the dough being initially under mixed but that as it fermented biochemical gluten development occurred which would toughen the dough significantly. Without more information that the best guess I can offer.
Tom Lehmann/The Dough Doctor

808

/ [**Re: Cold Dough**](#)

Two main reasons;

- 1) The dough will open a lot easier at 60F than at 40F.
- 2) The dough will exhibit a pronounced tendency to bubble at the lower temperatures to the point where you are almost guaranteed a bubbling problem with a 40F dough going into the oven.

Tom Lehmann/The Dough Doctor

809

/ [**Re: 48 hrs bulk ferment - 12 hours ball ferment?**](#)

Since you have two dough balls, unless you need both at the same time, use one now and let the other one go for an additional 24 hours to see which one you like the best.

Tom Lehmann/The Dough Doctor

810

/ [**Re: Bulk Fermenting vs. Individual Balls**](#)

When comparing the nutritionals of whole-wheat flour against an enriched white flour the only difference is in the fiber/bran content of the whole-wheat flour. This is due to the fact that enriched flour is enriched to the same level of vitamins/minerals as whole-wheat flour. Comparing whole-wheat flour to a non-enriched white flour the cards are stacked in favor of the whole-wheat flour as the most nutritious part of the wheat berry is associated with the bran fraction, just like apples and potatoes, when you remove the outer skin you also remove the most nutritious part.

Tom Lehmann/The Dough Doctor

811

/ [**Re: KA Cutter**](#)

Beautiful cutter! Is it available with a 4 or 5-inch wheel? Over the years we found that the larger diameter wheels cut better in that they disrupted the top of the pizza less than the smaller diameter wheels.

It's hard, if not impossible to find a really good cutter with the larger diameter wheel.

Tom Lehmann/The Dough Doctor

812

/ [Re: Yeast donuts recipe?](#)

Your math is indeed correct. ^^^

Just remember to scald and then cool the liquid milk before using it and you're good to go.

Tom Lehmann/The Dough Doctor

813

/ [Re: Yeast donuts recipe?](#)

Easy to do;

We have 56% absorption for the dough which represents all of the water added to the dough, so if we calculate 12% of 56% (56 X 12 press the "%" key and read the answer in the display) we find that if all of the liquid added to the dough was liquid milk the total milk solids contribution would be 6.72% (only 1% more than called for but still within the normal range for milk solids) so in this case we can substitute the water with 100% liquid milk and add the difference (6.72%) in water. If you want be be specific and add the specified amount of dry milk powder called for in the dough formula you will need to replace 48% of the water with liquid milk then add 8% water plus 5.75% water for a total of 13.75% water in addition to the 48% liquid milk.

As far as the type of milk, it really doesn't make any difference as long as it is liquid milk ready for drinking (as opposed to being concentrated).

Tom Lehmann/The Dough Doctor

814

/ [Re: Even during a pandemic, we'll never be this hungry](#)

By us, here in Manhattan, Kansas Tony's brand and DiGiorno brand pizzas are the premium brands on our supermarket shelves and with each trip to the store I always check to see what is moving and what isn't, it's been a very consistent observation that many of the low cost pizzas are sold out or are in limited supply as compared to the higher priced/premium brands. My Econ. 101 class explained that by stating that the more expensive something is the fewer will be sold, which explains why we see more Fords on the road than Rolls Royce. :-D

Tom Lehmann/The Dough Doctor

815

/ [Re: Even during a pandemic, we'll never be this hungry](#)

I've seen the same thing but what I'm seeing is that only the higher priced pizzas are left on the shelves, all of the Roma's, Tombstone, and other "bottom feeders" are gone. Wonder what pizzas were on either side of the Tony's? They're gone, just stating an observation.

Tom Lehmann/The Dough Doctor

816

/ [Re: Yeast donuts recipe?](#)

High heat treatment is the only one to use for yeast leavened products, any of the others can be used for chemically leavened products. Due to its cost, today many bakeries don't use dry milk powder in their yeast leavened products, instead they will often use milk replacers/substitutes designed specifically for that application. The function of the milk powder in the yeast raised donuts is to help retain moisture, contribute to crust color development, and impart flavor. The calcium content also functions to help buffer the acid formation during fermentation which is part of the flavor improvement achieved with the use of milk.

Am I missing something? I fail to see an issue here, if high heat treatment aka bakery grade dry milk powder is not available all one has to do is to use liquid milk and heat it just until it begins to boil (scald it) then allow it to cool and use it as part of the total liquids content, just remember that liquid milk is approximately 12% solids, the rest being water. This is what bakeries and home bakers did before high heat treatment milk powder became available.

Tom Lehmann/The Dough Doctor

817

[/ Re: Bulk Fermenting vs. Individual Balls](#)

Alex;

I'd say that is a pretty fair summary as I see it.

Tom Lehmann/The Dough Doctor

818

[/ Re: Coating dough balls in oil for high temp bakes](#)

Absolutely! It only needs to be opened once after you put the dough balls in to introduce enough warm air to form a skin. In some cases a skin might form but it will only be a dry (not crusty) skin which isn't too much of an issue but if you want to address it you can always drape a damp towel over the containers for the cross-stack period, that should fix the problem regardless if the door is opened or not.

Tom Lehmann/The Dough Doctor

819

[/ Re: Yeast donuts recipe?](#)

They are one and the same, just of a finer consistency.

Tom Lehmann/The Dough Doctor

820

[/ Re: Bulk Fermenting vs. Individual Balls](#)

Alex;

I think you hit the nail right on the head! The protein level indicated for a whole-wheat flour can be misleading, because there is about 1% protein bound to the bran portion of the flour the total protein content of a whole-wheat flour is about 1% higher than its white flour counterpart BUT that 1% extra protein is not typically comprised of gluten forming proteins so it doesn't do anything for the

strength of the flour. If you cannot find a higher protein content whole-wheat flour you can always add VWG to the existing whole-wheat flour, the amount to add should raise the total protein content of your flour by 3%, since 1% VWG increases the protein content by 0.6% you will need to add about 5% VWG plus the necessary extra water $1.7 \times 5\% = 8.5\%$ extra water.

By the way, just because the spelt flour has 14% protein content doesn't mean that it's all gluten forming protein, I seriously doubt that it will work for you without the addition of VWG.

Tom Lehmann/The Dough Doctor

821

[/ Re: First Attempt at Lehmann Dough - The Results w/ Photos](#)

Looks like a winner to me! :drool:

Tom Lehmann/The Dough Doctor

822

[/ Re: Thinning Dough](#)

Thin dough skins and extra heavy on the toppings is not a good mix for a number of reasons. If it were me, I'd be making the dough a little thicker (same diameter but greater dough weight), also you can try placing those cherry tomatoes sliced side down on a clean towel to remove some of the extra moisture from the cut surface. I do this all the time when I use nothing but sliced fresh/ripe tomato for my "sauce". You might also consider applying a very light application of oil over the center of the skin before adding the sauce, this will help to create a moisture barrier keeping the moisture on top of the skin rather than allowing it to soak into it or worse yet, through it.

Tom Lehmann/The Dough Doctor

823

[/ Re: Pizza dough is instable and breaks/tears apart.](#)

A good temperature to final proof the dough balls at would be between 70 and 75F/21.1 to 23.9C. so your 24C location should work fine.

When re-rounding the dough don't try to make them into cannon balls that Napoleon would be proud of, instead lose round them (just get them into a round shape) and I think you will be OK.

Tom Lehmann/the Dough Doctor

824

[/ Re: Bulk Fermenting vs. Individual Balls](#)

Good point! I was assuming he was using KA Whole-Wheat flour (14% protein content) as he alluded to, but then.....maybe someone needs to pin a tail on me.
:-D :-D :-D

Tom Lehmann/The Dough Doctor

/ Re: Coating dough balls in oil for high temp bakes

Like with everything, there is always a possibility. I can say that in many cases too much oil is being added to the dough ball which is why I always emphasize wiping a light coat of oil onto the dough balls. If you can see a shine on the surface of the dough there is sufficient oil to do the job at hand. The next time you make dough apply the oil as sparingly as possible to see if that has any impact. In some cases we've found that oil is only needed on the top of the dough ball, it is not needed in the container. For whatever reason with some containers the dough does not seem to adhere very well and it will fall free from the container with minimal distortion. Here's another trick you might try to see if it works for you, as you round the dough place the balls on the bench and lightly dust the top of the dough balls with flour (I like to use semolina flour but try your regular flour too), then place the dough balls into the un-oiled with the floured (top) side down, very lightly oil the top of the dough balls and CF as usual. Now, here is something else to ponder, according to the laws of physics (hard to argue with them) cold air holds less moisture than warm air so contrary to popular belief, things DO NOT dry out due to being placed in the fridge.....UNLESS YOU KEEP OPENING THE DOOR which allows warm air to enter which is the culprit when it comes to drying out the dough balls. If you have a dedicated fridge for the dough balls or if you can resist the temptation to open the door UNTIL YOU ARE READY TO DOWN-STACK/COVER THE CONTAINERS you might find that you don't even need to use any oil. Where the oil application is essential is in commercial practice where the dough boxes are placed into a common walk-in or reach-in cooler and the door is constantly being opened and closed plus there is significant airflow to provide a consistent temperature throughout the cooler (this is not present in a home fridge, at least none that we have ever owned), so there are some things for you to explore. Please let us know if any of these work for you.

Tom Lehmann/The Dough Doctor

/ Re: Is this dough going to work...?

When it comes time to open the dough balls don't be afraid to use dusting flour, after getting the ball pretty well opened place it on a wood prep peel with some fine corn meal as peel dust, finish opening and dress to the order, bake immediately. Let us know how it turns out.

Tom Lehmann/The Dough Doctor

/ Re: Bulk Fermenting vs. Individual Balls

Alex;

If you are following the dough formula and procedure as shown in the video I would suggest that you look at incrementally increasing the % of yeast used in the dough formula to achieve a more open crumb structure.

What do you mean by: "That towel technique" to open the dough balls into skins? You also say that your crust burns quickly in your oven, have you confirmed the

ACTUAL temperature of your oven using something like an infrared thermometer? You mention that the dough is elastic when you go to open it, is it REALLY elastic or do you mean extensible. Elastic is like a rubber band, where you stretch it out and it pulls back or fights you as you try to open it. Extensible is when the dough is easy to open and stays put/retains its shape when you place the skin on a peel. This is an important distinction as a whole-wheat dough that is too elastic might actually be under absorbed. Most whole-wheat doughs will require about 75% total dough absorption, your total dough absorption is less than this so it might be something to consider.

Tom Lehmann/The Dough Doctor

828

/ Re: Questions about temperature?

Because you get better gluten development at the higher "kneading" temperature. Isn't that why we are kneading the dough? ??? The lower temperature at the time of opening the dough ball(s) into skins serves two purposes, one is that it makes the dough easier to handle and form into a skin and two, it allows for a broader window of time to use the dough in. This is especially important in a commercial (pizzeria) setting. Most pizzerias target their opening temperature for 50F but for home application where we are only opening a couple of dough balls within a fairly short period of time we can use a higher temperature which is typically around 60F BUT keep in mind that a warmer dough can be more problematic to open if one is not skilled in opening the dough balls into skins so for home applications I will frequently suggest beginning to open the dough balls into skins at 50F and as your level of ability increases begin increasing the temperature at which you open the dough. A really skilled bench person can open doughs as warm as 85 to 90F without too much of a problem, but as we all know, many home pizza makers are not yet at that skill level. As the old adage goes: "Different strokes for different folks."

829

/ Re: Bulk Fermenting vs. Individual Balls

Alex;

After mixing the dough what does it feel like? Select one: Dry, Tacky, Sticky, Smooth.

What is the temperature of the dough after mixing?

I see that you are using "dry yeast" what kind of dry yeast is it? Select one: Active dry yeast, Instant dry yeast.

How are you adding the yeast to the dough?

Have you tried making your dough without the honey? Honey will contribute to a darker crust color and possible burning at high baking temperatures.

Tom Lehmann/The Dough Doctor

830

/ Re: Yeast donuts recipe?

Sure, 100% bread flour will work just fine. If you notice, I have the "Crisco" shown

in brackets to give an example of what is meant by All Purpose Shortening, any non-emulsified all purpose shortening will work just fine in this application.

Tom Lehmann/The Dough Doctor

831

/ Re: Proofing dough before/after cold ferments?

To answer your questions;

1) What you are describing is a type of autolyse (I use an almost identical method when hand mixing the dough all the time) which is well recognized as being beneficial when hand mixing and kneading the dough as it allows for better dough hydration.

2) You will ALWAYS get a more consistent dough if you go directly from mixing/kneading to scaling, balling and into the fridge/cooler.

3) While there is a difference in crust flavor between R.T. and C.F. we have never been able to distinguish a hybrid flavor resulting from the use of both. Take your pick, which do you like and go for it. I do realize that both methods are frequently employed and in cases I've recommended it myself but it has always been for a dough management reason not to develop a specific flavor profile in the finished crust.

4) We have investigated that and found just too many variables to draw any significant conclusions. Included in the variables are flour protein content, fermentation tolerance of the protein, dough absorption, dough formulation, dough temperature and ambient temperature. Conclusions COULD be drawn from a specific dough formula produced under controlled conditions with a specific lot of flour but in reality the data wouldn't be all that useful as the results would change with a different lot of flour (flour is NOT consistent) as well as with any change in the finished dough temperature and if your dough formula wasn't the same as that used to develop the data again it wouldn't be relevant.

Tom Lehmann/The Dough Doctor

832

/ Re: Newbie Pizza Dough Cooking Test

I'm not sure exactly what you are trying to accomplish, but if it's to look at the baking properties of different doughs you have to put something on top of the skin during the baking process as the baking dynamics are totally different for a plain skin (we'd call it a par-baked skin). The easiest thing to do is to just sauce the skin and then bake it by your preferred method, the results which you see should translate pretty well to a fully dressed pizza baked under the same conditions.

Tom Lehmann/The Dough Doctor

833

/ Re: Yeast donuts recipe?

They are essentially the same, but the milk powder must still be heat treated for bakery application. If the product is intended to be reconstituted for drinking or cheese manufacture it is not a heat treated dry milk product. You will need to contact the manufacturer to find out if the milk powder has been heat treated for

bakery applications. You might also check around at some local retail bakeries to see what kind of milk powder they're using in their yeast leavened products. When I had my shop we used to make the dough and cut the donuts on one day and then place the cut donuts on parchment lined sheet pans which were placed in the cooler, on the following morning they were removed from the cooler and placed onto proofing screens and then placed into the donut proofer for final proofing before frying. This allowed us to have yeast raised donuts ready for sale about 1.5-hours sooner than if we had to make the dough that morning. The dough will only be good for 1-day.

A 10-L mixer should work well to get you started.

Tom Lehmann/The Dough Doctor

834

/ [**Re: Bulk Fermenting vs. Individual Balls**](#)

I don't know anything about the dough formula he is using but you might want to try adding VWG (vital wheat gluten) to the dough formula. I would suggest starting with a 5% addition and then working up in 3% increments from there. Remember to blend the VWG into the flour to prevent pilling and also remember to increase the dough absorption by 1.7% for each 1% VWG added. The other option to look at is the use of Ultra Grain whole-wheat flour which while still whole-wheat flour has significantly different handling properties than the more conventional whole-wheat flours.

Tom Lehmann/The Dough Doctor

835

/ [**Re: Questions about temperature?**](#)

To answer your questions in the order presented;

1) The type of mixing greatly factors into the heating of the dough during the mixing process, as a very general rule, the slower the mixing action the less heat build up there will be due to friction between the bowl and the dough BUT in some cases this can be off set by a significantly longer mixing time which can result in significant heat generation.

2) Wheat proteins disassociate (come apart) at warm temperatures which is why a dough will be extremely soft and sticky at temperatures approaching 100F this softer and more extensible dough will not exhibit the same amount of bowl friction as a cold dough which is much firmer/stiffer. Cold doughs do not hydrate or develop gluten as well as warmer doughs do so you might say that a compromise temperature (the Goldilocks Temperature Range) of 70 to 85F provides doughs which will exhibit rapid flour hydration combined with good gluten development and decent handling properties.

3) 1F per hour on average.

4) Yes and no, a higher protein flour will typically be a stronger flour which will require more fermentation to give a finished dough that has the desired dough handling properties. Since temperature is the driver of fermentation one of the things that we can go is to increase the finished dough temperature to achieve a faster fermentation rate, hence more fermentation within any given period of time. With that said, we can also simply allow the dough to ferment for a longer period of time or even increase the yeast level. Each of these has pros and cons which will

influence which is the most appropriate action to take based on the dough management procedure we're using.

5) I'm not sure what you mean by "enabling the yeast" but sugar hydrolyzed into nutrient for the yeast to feed upon during the fermentation process (any residual sugar is utilized in the browning reaction to provide crust color and in some cases flavor). It is well known that small amounts of sugar (about 2%) have little impact upon the fermentation rate but at higher levels the osmotic pressure exerted by the sugar upon the yeast will actually have a suppressing affect upon the fermentation rate, however at the same time it can also provide sufficient nutrient to allow for longer fermentation periods if necessary. Salt has a suppressing effect upon yeast activity. At levels above 2.25% we begin to see this, and at 3% and above the impact can be significant. Increasing the temperature will have no impact upon the yeast in this case so the usual action taken is to increase the yeast level.

6) No.

7) 34 to 40F (most will target for 36 to 40F)

8) 50F for a pizzeria and anything in the 50 to 60F range for home pizza making.

Tom Lehmann/The Dough Doctor

836

[**/ Re: Spotting LM Mozz from the nutrition label?**](#)

What disappointing characteristics have you been finding? Remember that different mozzarella cheeses will perform differently under different baking conditions.

Tom Lehmann/The Dough Doctor

837

[**/ Re: Specific Dough Freezing Question**](#)

We developed that procedure for use with commercial frozen dough which is made without any kind of fermentation at all (fermentation before the freezing process is detrimental to long frozen shelf life properties of the dough) so it's awful in the taste and aroma department when it comes to the finished/baked crust. That procedure actually provides a pretty decent flavor to the finished crust, at least when compared to the alternative.

Tom Lehmann/The Dough Doctor

838

[**/ Re: Pizza dough is instable and breaks/tears apart.**](#)

When you are mixing your dough with a mechanical mixer it is not necessary to allow the dough to rest at any time during the mixing process. Your math is correct. ^^

Tom Lehmann/The Dough Doctor

839

[**/ Re: Bulk Fermenting vs. Individual Balls**](#)

The problem stems from the use of 100% whole-wheat flour, you will not get an extremely open crumb structure as you do when using white flour. By nature whole-wheat items are more dense than those made with white flour. This is due to the roughly 20% bran content of the whole-wheat flour, it absorbs a lot of water and it has a cutting and disrupting effect upon the gluten structure neither of which is conducive to a very light, open crumb structure. Whole-wheat flour is best when used to make relatively thin crust pizzas if any kind of crispiness is desired. It can be used to make thicker crust pizzas as well as pan style pizzas but crispiness is generally not going to be a strong point.

I've had my best whole-wheat pizzas when baking at 260C both top and bottom. At this temperature I can bake the pizzas sufficiently long to get the crust thoroughly baked without burning the top of the pizza.

Tom Lehmann/The Dough Doctor

840

[/ Re: Steam oven](#)

Gus;

You might try leaving the door cracked open a bit during the last part of the baking process to allow for ventilation of some of that steam out of the oven, this should give you a crispier finished pizza if that is your quest. Otherwise, steam will give you a soft and soggy pizza.

Tom Lehmann/The Dough Doctor

841

[/ Re: Bulk Fermenting vs. Individual Balls](#)

Nope, scale and ball the dough immediately after mixing. The dough will feel soft and tacky but don't let that discourage you as it will improve during the fermentation period. No need for stretch and fold as biochemical gluten development will take the place of that for you.

Tom Lehmann/The Dough Doctor

842

[/ Re: Specific Dough Freezing Question](#)

When you go to use the frozen dough place it in the fridge overnight to slack-out/thaw, then bring it out to room temperature and allow it to warm to about 55F internal ball temperature before opening it into a skin for use.

Another good way to manage your frozen dough is to make the dough with little to no fermentation time prior to freezing it, then in preparation for use, slack it out in the fridge overnight, then bring it out to room temperature until the internal dough ball temperature reaches 55 to 60F, reball it, lightly oil the dough ball and place into individual plastic (bread type) bags, twist the open end to close and tuck the pony tail under the dough ball as you place it back into the fridge to cold ferment for 24-hours. Remove from fridge and allow to warm to 55F (internal ball temperature), then roll the bag down around the dough ball and invert it over a flour dusted bench/counter top, or bowl of flour, flour the dough ball and open into a skin by your preferred method, the skin will be ready for immediate use.

Tom Lehmann/The Dough Doctor

843

/ Re: Specific Dough Freezing Question

I don't know what you mean by "will the outer skins be OK" If you are suggesting placing the dough balls onto sheet pans for freezing no problem, I do suggest that you flatten them to about 2-inches or so as this will greatly reduce the time needed to freeze the dough ball to the core. In large scale production we usually lightly oil the dough balls (pucks as they are referred to as) prior to freezing as this is another step in making sure the dough balls don't stick together when bulk packaged. The dough does not dry out in the freezer IF the freezer is kept closed. Keep in mind that unless you are either mechanically freezing at -25F (ideally lower) or cryogenically freezing at -40 to -55F your shelf life of the frozen dough will be limited to about 2-weeks.

Tom Lehmann/The Dough Doctor

844

/ Re: Pizza dough is instable and breaks/tears apart.

I always like to investigate the easy things first so what I'd suggest is as follows:

- 1) Add the cold water to the mixing bowl then add the sourdough (if used) to the water followed by the flour, yeast (if used) and salt.
- 2) Mix the dough longer than what you are presently mixing for, you want to mix until the dough has a smooth appearance.
- 3) Scale and ball the dough immediately after mixing, place it into lightly oiled containers but DO NOT COVER/LID as tightly as you are presently doing. The dough will release carbon dioxide gas which will blanket the dough preventing it from drying out. Cut a couple small holes in the plastic wrap to prevent any pressure build up in the containers.
- 4) After the room temperature fermentation period reball the dough placing the dough balls back into their containers and cover lightly.
- 5) Allow the reballed dough to rest at room temperature for about 5-hours or until it can be easily opened into a skin.

Try this and let us know what the results are.

Tom Lehmann/The Dough Doctor

845

/ Re: Help with Tough Dough/Crust

Can you please share your dough formula and dough management procedure with us? Also be sure to include all dough temperatures.

Tom Lehmann/The Dough Doctor

846

/ Re: Is this dough going to work...?

Since you asked, here is what I would do;

After the initial counter top bulk fermentation, divide the dough into desired weight pieces and form into balls, wipe the balls with oil and place in the cooler without a lid on the container(s) and allow it to cool to 50F internal ball temperature, then lid/cover the container(s) and allow to CF for the additional time. Remove from cooler, allow to temper AT room temperature until the internal dough ball temperature reaches 55F then begin opening the balls into skins by your preferred method. Dress and bake.

Tom Lehmann/The Dough Doctor

847

[/ Re: Steam oven](#)

Gus;

I need a little more information on the oven, it sounds like it is a steam injected oven using low pressure steam and gas or electric to heat the oven. A rotating rack oven with steam injection would be a good example of this type of oven. For baking a pizza on a raw dough skin this would probably not be a good choice but for reheating a pizza or a slice it might work OK if the steam can be controlled and evacuated from the baking chamber to allow for crisping of the pizza after it has been reheated.

Tom Lehmann/The Dough Doctor

848

[/ Re: Gum line](#)

We're talking about two different things here right? Gummy bread and pizza crust and the development of a gum line in a pizza crust. Flour has three main parts, starch, protein and moisture. There is typically less than 1% ash and minerals. The starch has very little capacity to carry water as it is in the flour so the burden of carrying the water is left up to the protein, the more protein present the higher the dough absorption. As the dough is baked/heated the protein gives up the water to the starch which is beginning to gelatinize and now has a high affinity for water, the starch gelatinizes/sets and creates the structure for the finished product we're making. A higher protein content doesn't hold on to the water any differently than a lower protein content.

Tom Lehmann/The Dough Doctor

849

[/ Re: Has any one used eggs, mashed potato's or fine semolina flour to your dough?](#)

All of the above.

Eggs (whole eggs) add richness to the finished crust and contribute to crust color development.

Mashed potatoes contribute softness and some crust color to the finished crust. Semolina flour will help to produce a crispy thin type crust BUT at levels above 25% it will contribute to a very tough and chewy eating characteristic in the finished crust, especially after a few minutes out of the oven.

Tom Lehmann/The Dough Doctor

850

[/ Re: Is this dough going to work...?](#)

The surface is pretty normal for a no knead dough. Actually, no knead doughs do get kneaded but not very much. After you knead the dough for a minute or so you will see the surface become a lot smoother as the dough again expands.

Tom Lehmann/The Dough Doctor

851

[/ Re: Stretching/ opening a dough ball problem](#)

What you've described sounds about right to me for that procedure. I use a different procedure where I grasp the skin with my palms facing down and I pull the edge of the skin between my thumb and index finger stretching the dough as I pull it through, this helps to increase the circumference of the skin.

Tom Lehmann/The Dough Doctor

852

[/ Re: All Trumps- unbromated, unbleached](#)

Peter;

The flour needs to be frozen (not just in the freezer) for a minimum of 30-days so I'm assuming a week to allow the flour (regardless of the amount) to get down to freezing temperature. Flour is really hard to cool due to its low moisture content as well as its density.

Tom Lehmann/The Dough Doctor

853

[/ Re: All Trumps- unbromated, unbleached](#)

There are two reasons for freezing the flour, it dramatically slows the oxidation rate and if you freeze the flour for a minimum of 30-days you will effectively kill any insects, larvae and eggs that might be in the flour. This means that a 5-pound bag of flour will need to be in the freezer for at least 6-weeks. Once frozen you can transfer it to an insect proof metal or plastic container for long term storage. It will oxidize but at least it won't be infested. Oxidized flour behaves very much like bromated flour just in case you're wondering.

Tom Lehmann/The Dough Doctor

854

[/ Re: Stretching/ opening a dough ball problem](#)

What is the internal temperature of the dough ball at the time you begin to open it into a skin? Most pizzerias target for 50F but many home pizza makers target something in the 55 to 60F range. I'm thinking that an hour out of the fridge might not be long enough to give you this dough temperature. Also, how long are you cold fermenting the dough?

Tom Lehmann/The Dough Doctor

855

[/ Re: How to make pizza perfectly round?](#)

And let's not forget that a few years ago free form pizzas were popular too, Pizza Hut's Big Foot pizza was a good example of a commercial attempt at this.

Tom Lehmann/The Dough Doctor

856

[/ Re: All Trumps- unbromated, unbleached](#)

Having your A.T. flour unbromated really doesn't hurt a thing unless you are planning to ferment your dough for the better part of a week, and even then it would be questionable. As for it being malted, at the temperature you're baking at it shouldn't pose a problem in the 700 to 750F range. You can always repackage what you don't use into 2 to 5-pound bags and freeze it. Frozen it will keep forever and a day.

Tom Lehmann/The Dough Doctor

857

[/ Re: Gum line](#)

The most common things that might be responsible are:

Baking too hot or not long enough.

Pre-saucing.

Over thinning of the sauce.

Using too much sauce.

Too much/many toppings.

It would really help to be able to see the issue and know more about how the pizza is made and baked as this can help in determining the cause.

Tom Lehmann/The Dough Doctor

858

[/ Re: Differences between human vs. machine made pizza?](#)

A number of years ago there was a pizzeria just outside of Pittsburgh, PA (School Hill?) that I had visited where the owner mixed all of his doughs totally by hand. Interesting observation: The owner didn't have a hair on either of his arms or hands, if I remember correctly, he was bald too, but I don't think that had anything to do with mixing the dough :-D

Tom Lehmann/The Dough Doctor

859

[/ Re: Gum line](#)

OMG! We have covered this a number of times before and I've written a comprehensive article on the topic (maybe Peter can direct you to it?). The first thing to do though is to make sure you REALLY have a gum line and not a false gum line. Turn the slice upside down so the bottom crust is facing up, use a VERY SHARP serrated knife or a single edge razor blade and using multiple strokes cut the slice from the point to the outer crust, now fold the slice so toppings are facing each other, look immediately under the sauce, if you see a gray area more than about 1/8 inch in thickness, congratulations, you have the dreaded gum line (read about how to solve) if not, don't worry as you don't have a gum line. Note: If you cut the slice from the top down, through the sauce and toppings you will ALWAYS get a false gum line as you are pulling the sauce down into the crust as you cut it. You CANNOT use a pizza wheel or rocker knife to cut the slice when looking for the presence of a gum line as these tools will compress the crumb structure making it impossible to identify the presence of a true gum line.
Tom Lehmann/The Dough Doctor

860

/ [Re: Hobart A120 Mixer Input](#)

It will be in the 8 to 10-minute range using 2nd. speed.
Tom Lehmann/The Dough Doctor

861

/ [Re: Differences between human vs. machine made pizza?](#)

We studied hand v/s machine dough mixing many years ago, mixing a dough by hand is so gentle that it is all but impossible to over mix a dough without the aid of a reducing agent such as L-cysteine or glutathione aka dead yeast, machine mixing on the other hand, if it can be set to mix the dough at relatively high speed/r.p.m. can/will easily over mix just about any kind of yeast leavened dough. Because of the force applied to the dough through the mixing action the dough will heat up considerably more with machine mixing than with hand mixing as a result of bowl friction. Gluten development is considerably faster with machine mixing and there is also much better incorporation of ingredients into the dough with machine mixing. It is also a lot easier to incorporate higher levels of water into a dough with machine mixing as opposed to hand mixing/kneading. With all of this said, there are also dough mixers that are designed to emulate the hand mixing process, the one which immediately comes to mind is the Artoflex twin arm dough mixer. These mixers were designed specifically for mixing very soft/slack Danish doughs but they also work well with the higher absorption pizza doughs too. The main function of the Artoflex mixer is to allow for the development of a dough without excessive gluten development. There is a very slight "chemical" if you want to call it that, difference between mixing with a planetary mixer and mixing by hand, in a planetary mixing bowl if it is possible to have a limited amount of oxygen in contact with the dough so as gluten bonds are broken they are not readily reformed through oxidation at the S-H bonding points. This is one reason why it is possible to almost liquefy a dough through excessive machine mixing and it is also a contributing factor to the shorter mixing time in this type of mixer. Note that this is only observed in doughs which have been exposed to fermentation such as a remixed straight dough process or more commonly a sponge and dough process, in

both of these cases the dough or sponge beings carbon dioxide into the mixing bowl and being heavier than air, it is not displaced very well by the mixing action but it does displace the air/oxygen from the bottom of the bowl where the dough is resulting in the dough being mixed in an oxygen depleted environment. We didn't see any evidence of this when we just added the ingredients to the bowl and began the dough mixing process as many of us do when making our doughs by the conventional straight dough process.

The British Tweedy Bread Mixer utilizes this principal by pulling a vacuum in the mixing chamber for significantly reduced dough mixing times. In our research we were able to achieve only a limited reduction in dough mixing time by flooding the mixing bowl with carbon dioxide during the mixing process which we attributed to the significant amount of air contained within the flour and other dry ingredients in the mixing bowl and the fact that the dough reached the desired amount of gluten development before a significant reduction in mixing time could be seen.

Tom Lehmann/The Dough Doctor

862

[/ Re: Aluminum pans for Chicago deep dish](#)

Most antacids as well as different forms of baking powder will contain aluminum.

Tom Lehmann/The Dough Doctor

863

[/ Re: Switched ovens, pizza is very dry and crispy now.](#)

I agree with the dough absorption increase. See if it will carry 65% if its a N.Y. style that you are after.

Tom Lehmann/The Dough Doctor

864

[/ Re: Switched ovens, pizza is very dry and crispy now.](#)

What kind of surface were you baking on in the home oven? Why the sudden increase in baking temperature?

Tom Lehmann/The Dough Doctor

865

[/ Re: Pizza Expo 2020 ***POSTPONED***](#)

This was a very smart move on their part especially when considering the C-19 situation in Italy and Europe, not to mention Asia as well as progression along the entire West cost of the U.S. Always better to be safe than sorry.

Hopefully this thing will be behind us by the end of June!

Tom Lehmann/The Dough Doctor

866

[/ Re: Hobart A120 Mixer Input](#)

I've used the Ankarsrum mixer (a friend of mine had one) for making bread doughs but never for making pizza doughs and I've never physically or mentally done a comparison of the two mixers (the other being a planetary type mixer) so I'm probably not the best person to ask about a comparison of the two. The best I could offer is that the Ankarsrum mixer is really a home type mixer while the Hobart A-120 mixer is designed for commercial applications. With that said, there was a period of time (mid 1970's to sometime in the 1990's when Hobart didn't make the motors for their A-120 or A-200 mixers) which left these two mixer models grossly under powered for their size. Now, if we are looking at either an A-120 or A-200 mixer made prior to that it's a whole different story as those were true work horses and didn't have to "stop for a rest" half way through mixing a large size dough.
Tom Lehmann/The Dough Doctor

867

[**/ Re: Hobart A120 Mixer Input**](#)

You're not missing anything, you can get up at about 10-pounds of dough into the 12-quart bowl but but you can't achieve a consistent mix throughout the dough using that much dough with the relatively short mixing time employed for pizza dough as compared to a bread dough which is significantly longer. If you don't mind having a dough that is inconsistently mixed you can use a lot more dough than I suggested. If you don't see the dough being turned over during the mixing process you're not getting a consistent mix throughout the dough. Bread doughs are a different matter as they are mixed much longer and to a higher level of gluten development which helps to turn a larger dough over in the bowl during the mixing process. If you mix large size pizza doughs your best bet will be to stop the mixer periodically and manually turn the dough over in the bowl a couple of times during the mixing process. To your point, I should have mentioned this.
Tom Lehmann/The Dough Doctor

868

[**/ Re: Hobart A120 Mixer Input**](#)

By the way, that's a very good price on the A-120 mixer, especially with all of the extras. Be sure to set the bowl to agitator clearance before using it though. The bowl lift is adjustable, place a nickle between the bowl and the reverse spiral dough arm as a gauge with the bowl in the fully up position, adjust the gap so the agitator JUST clears the nickle. If your bowls are tin plate DO NOT mix sauce in them unless you are fond of a funky metallic taste. Not a problem with stainless steel bowls. NOTE: Match bowl with agitator and mark them so they can stay together as a pair. If you hear the familiar Hobart "tink, tink, tink" as the mixer is running with or without a dough in it the clearance between bowl and agitator is not correct OR there is a dent in the bowl which has to be removed. We have discussed all of this previously here so you might want to take a stroll through the archives if appropriate. P.S. BE SURE TO BOLT YOUR MIXER DOWN as they have a tendency to want to walk off of bench tops while running.
Congrats on a great find!
Tom Lehmann/The Dough Doctor

869

/ Re: Anvil Conveyor Oven - Belt Speed

I'm not personally familiar with the speed control for the conveyor but the conveyor drive motor usually isn't anything special so it might just be a rheostat type of control which should be a pretty easy fix if it is. You might search the Internet to see if you can find an electrical schematic for the oven as that will tell you for sure what you're up against.

Tom Lehmann/The Dough Doctor

870

/ Re: Fermentation time counting question

Just remember to allow time for the dough ball to warm AT (repeat AT) room temperature until the internal ball temperature is in the 50 to 60F/10 to 15.5C range before opening into skins.

Tom Lehmann/The Dough Doctor

871

/ Re: Hobart A120 Mixer Input

No, I'm saying that if you do the math as indicated and divide the total dough weight in grams by your unit weight that would be the approximate number of units that could be had from a single dough made in the A-120 bowl. I say "approximate" as there will be some bowl loss resulting in the actual dough weight being a bit less than the calculated dough weight. You are on the right track though.

Tom Lehmann/The Dough Doctor

872

/ Re: pour all of the water vs little by little

You would find then to be about the same with the one having the potatoes being possibly more sticky.

Tom Lehmann/The Dough Doctor

873

/ Re: pour all of the water vs little by little

Powdered sugar is only necessary when you don't want to have the potential grittiness of the granulated sugar (that's why it is also known as "icing sugar" since this is a mute issue in the dough you can just use granulated sugar, a fine granulated sugar such as "fruit granulation" is most commonly used in bakery applications.

Tom Lehmann/The Dough Doctor

874

/ Re: Hobart A120 Mixer Input

With a 65% absorption dough the A-120 (12-quart capacity) mixer will handle up to a maximum of 1,000-grams of total flour weight. I used them all the time when I ran the bake lab at AIB. Add up the total of all the bakers % (find the sum) then divide by 100 and multiply the 1000-gram flour weight by this to find the total dough weight. It will probably be close to 170 divided by 100 = 1.7 so 1.7 X 1,000 = 1700-grams total dough weight.

Tom Lehmann/The Dough Doctor

875

/ Re: pour all of the water vs little by little

In most large wholesale bakeries where sweet dough is made the sugar is held back in the dough mixing process along with a good portion of the fat until the gluten has been pretty well developed to the desired point, the sugar and fat are then gradually added and mixed in just to get a thorough incorporation.

Tom Lehmann/The Dough Doctor

876

/ Re: Yeast doing too much work.

In all probability not, just reball the dough and place it back into the fridge, then about 3-hours before you plan on using the dough remove it from the fridge to temper AT room temperature. The dough balls will be ready to use when the internal temperature of the dough balls reaches a temperature between 50 and 60F.

Tom Lehmann/The Dough Doctor

877

/ Re: Recreating Drive-In Pizza

Here is some direction;

- 1) Use a strong bread type flour and mix the dough to just short of full gluten development.
- 2) Dough absorption will be about 56%
- 3) Dough formulation will include the reducing agent RS-190 aka dead yeast to reduce mixing time and provide extensibility to the dough.
- 4) Target a finished dough temperature in the range of 80 to 85F.
- 5) Very little fermentation time is employed in making this crust.
- 6) To form the skin use a dough sheeter/rolling pin or pastry pin.
- 7) After forming, dock the skin and allow it to proof for 15-minutes before baking.
- 8) Bake at 425F
- 9) Here's a starting dough formula if you don't already have one;

Flour: 100%

Salt: 2%

Sugar: 2%

Oil: 2%

RS-190: 1.5%

Ticaloid Lite Gum or Guar Gum: 0.25%

Yeast: 2.5% (compressed yeast)

Water: 56%

The function of the Guar Gum in this application is to help retain moisture in the par-baked crust which results in a finished crust with more of the characteristics of a crust baked from a raw dough skin. I did all of the initial applications work many years ago.

Tom Lehmann/The Dough Doctor

878

/ [Re: pour all of the water vs little by little](#)

Craig;

Even though the water is bound by the starch it is still free water and as such it is included in with the dough absorption in the same manner as the water in the eggs would be.

Tom Lehmann/The Dough Doctor

879

/ [Re: pour all of the water vs little by little](#)

It should be about the same (80%).

Tom Lehmann/The Dough Doctor

880

/ [Re: Yeast donuts recipe?](#)

You can make your own by scalding the liquid milk then add it as part of the dough water remembering that only 88% of the weight of liquid milk is water.

Tom Lehmann/The Dough Doctor

881

/ [Re: Bulk Fermenting vs. Individual Balls](#)

Alex;

What you are describing is pretty common for a whole-wheat dough. I think your problem might be related to low dough absorption. Your present dough absorption calculates to 68.75% which is low for a whole-wheat pizza dough. Increase the dough absorption to 74% (592-ml) and mix the dough just until it all comes together as a homogeneous dough (it is VERY EASY to over mix a whole-wheat dough). Put the water (18.3C) in the bowl first, then add the honey and all of the dry ingredients including the yeast if it is IDY but be sure to put the IDY on top of the flour (if it is ADY pre-activate it in 50-ml. of warm (37.8C) water for 10-minutes before adding it to the water in the mixing bowl. Mix at low speed until the dough just begins to form then add the oil and mix for 1-minute, then mix the dough at the highest speed possible just until a dough is formed. Take the temperature of the dough, ideally it should be in the 75 to 80F/23.8 to 26.6C) range. Immediately scale and ball the dough and place into lightly oiled fermentation containers, lightly oil the top of each dough ball, leave the lids off of the containers until the internal

dough ball temperature reaches 10C then apply the lids BUT make sure you have some form of a vent hole in the lids to bleed of any gas and prevent pressure build-up that might pop the lids off. Cold ferment for NOT more than 24-hours, remove from the fridge and allow to warm AT room temperature until the internal dough ball temperature reaches 10C then turn the dough out of the container(s) onto a flour dusted surface and begin opening the dough into skins by your preferred method. As soon as the pizza comes out of the oven brush the edge with olive oil or as I like to do, use melted butter.

Let me know how this works for you and be sure to post some pictures.

Tom Lehmann/The Dough Doctor

882

[/ Re: pour all of the water vs little by little](#)

The total dough absorption figures out to about 64% (30% as added water, 16% from the boiled potato and 18% from the whole egg) which is high for a yeast raised donut. I would suggest reducing the water incrementally to about 55% or maybe a little less to see how that works for you. As your dough formula is quite rich I might also suggest using 100% of the high protein flour rather than the blend that you are presently using.

Tom Lehmann/The Dough Doctor

883

[/ Re: pour all of the water vs little by little](#)

Your observations are correct in that a short fermentation time makes your observation more pronounced. A longer fermentation time will allow you to mix the dough better and then achieve the desired extensibility through longer fermentation which will, at the same time, provide a better flavored crust that also has better eating properties.

Tom Lehmann/The Dough Doctor

884

[/ Re: Pizza Dough - Fails to Retain Shape during Ferment](#)

For the 65% dough absorption here is how you do it:

460 (flour weight) X 65 (press the "%" key) and read the amount of water in the display window. 299-grams is the answer.

We have discussed the leaching of glutathione from ADY or IDY when put into cold water a number of times here, it never hurts to read it again though.

Tom Lehmann/The Dough Doctor

885

[/ Re: pour all of the water vs little by little](#)

I'm in agreement with Yael, plus it is actually a lot easier on the mixer. In actuality, you achieve a much more uniformly mixed dough by method #1 while method #2 results in a much more inconsistent dough which is why you were seeing it as

being more extensible due to the inconsistent gluten development.
Tom Lehmann/The Dough Doctor

886

[/ Re: pour all of the water vs little by little](#)

Are we talking about machine mixing or hand mixing/kneading?

Tom Lehmann/The Dough Doctor

887

[/ Re: Pizza Dough - Fails to Retain Shape during Ferment](#)

I can see several issues with what you are doing that might be contributing in part or whole to the issue.

- 1) 67% absorption is a bit on the high side, I'd recommend going lower, possibly start at 65% and go down in 2% increments from there.
- 2) You are putting IDY into the dough water. For hand mixing you should be hydrating the IDY in about 5X its weight of warm (100F) water before adding it to the colder dough water. What you are presently doing can leach glutathione out of the yeast which will have a softening effect upon the dough.
- 3) Do not place the lid on the container until the internal dough temperature reaches 50F, this is especially important when using a long CF period.
- 4) Are you mixing/kneading the dough until it has a smooth appearance? This is important as the smooth appearance is an indicator of gluten development and it is the gluten that helps to hold the dough ball together.

Tom Lehmann/The Dough Doctor

888

[/ Re: Yeast Amount](#)

Peter;

Absolutely! I'm just saying that when people reference a "yeasty" flavor one has to be sure we are all on the same page flavor wise before attempting to answer the question, I wish I had a dime for each time I've gone off on a tangent discussing a true yeasty flavor only to find out later that what the person was looking for was more of the flavor developed by the yeast aka fermentation flavor. It's like the time I got a question on how to develop a true rye flavor in rye bread. I suggested a pumpnickel rye formula (the equivalent of a whole-wheat but with all rye flour) as you can't get more of a rye flavor than that, as it turned out that didn't work either as it still didn't taste like "rye bread" to the individual. So, what was he looking for in flavor? As it turned out he was looking for the missing "mystery" ingredient, caraway seed! He was relating the flavor of rye bread to that of caraway seed. He never saw the caraway seed in his rye bread because the brand he was buying used either fine ground caraway seed or caraway seed oil for the flavor and because he was buying his bread from a small local bakery they didn't need to provide an ingredient listing on each loaf which might have given him a clue to its use in the bread. I see the same thing when people are looking for a corn like flavor and keep adding corn flour or corn meal but to no avail, in actuality, all they need to add is masa flour aka maseca (the magic ingredient in corn chips that

gives them their unique flavor).
Tom Lehmann/The Dough Doctor

889

[/ Re: Yeast donuts recipe?](#)

Yeast Raised Donut Formula:

Flour: 100% (strong bread type flour with 12 to 12.8% protein content)

Sugar: 6%

Shortening: 10%

Dextrose/glucose: 1%

Bakery grade non-fat dry milk: 5.75%

Salt: 1.75%

Yeast (compressed): 6.5%

Water: 56% (variable)

Mix to a smooth, well developed consistency with a targeted finished dough temperature of 80F.

Ferment for 1-hour at room temperature.

Cut into smaller manageable size pieces and form into loaf shape, cover with a sheet of plastic and allow to rest for 15 to 20-minutes.

Sheet the dough to about 1/2-inch in thickness and cut with desired shape donut cutter.

Place cut donuts on oiled screens for proofing at 100F/75 to 80% Relative Humidity. Proof times will be about 45-minutes.

Fry donuts at 375 to 385F.

Frying time will be about 45 to 60-seconds per side. For Bismarks submerge the donuts after frying the first side to complete the frying process.

Tom Lehmann/The Dough Doctor

890

[/ Re: Larger Bubbles Before Cooking](#)

Be careful what you wish for as large bubbles being formed during baking can/will rearrange the toppings and create inconsistencies in the top bake of your pizzas. If you just want to create a more open crumb structure you might look at increasing the dough absorption in 2% increments (the more fluid dough consistency will allow for easier expansion of the dough both prior to and during baking resulting in larger bubbles and a more open crumb structure. An increase in the yeast level might also help too as this will promote greater oven spring characteristics resulting in a more open crumb structure in the finished crust.

Tom Lehmann/The Dough Doctor

891

[/ Re: Recommendations for Outdoor wood fired/gas fired brick oven](#)

Recommendations for home ovens is one area where I seldom tread as there are others here on this web site who are much better versed on the subject than I am, now when it comes to commercial ovens, that's "a horse of a different color".

Tom Lehmann/The Dough Doctor

892

[**/ Re: Yeast Amount**](#)

When answering this question one must always ask: What do you mean by yeasty flavor? All too often when further exploring this question I've found that what they are actually referring to is the flavor of "FERMENTATION" not the flavor/taste of yeast. The taste of yeast is probably best described as that of old, wet newspapers. The other yeasty flavor commonly referenced is that of bread made from commercially frozen dough (very little fermentation and double the normal yeast level), this is a flavor that some might associate with the bread that their Grandma used to make back when Grandmas made bread from scratch. Not knowing specifically which flavor is being referenced as "yeasty" is an exercise in pure futility.

Tom Lehmann/The Dough Doctor

893

[**/ Re: Yeast donuts recipe?**](#)

A Boston Cream Donut is nothing more than what is normally referred to as a custard filled Bismark with chocolate dipped icing on top, much like a Boston Cream Pie except in a donut format.

I'll need to look for the yeast raised donut formula you mentioned.

Tom Lehmann/The Dough Doctor

894

[**/ Re: Larger Bubbles Before Cooking**](#)

Pictures of the dough, dough ball prior to opening as well as the finished crust would all be helpful in this case. It sounds like you might be allowing the dough balls to rest at room temperature too long before opening them into skins. The next time you make dough try opening dough balls at 2, 4, and 6-hours and compare the resulting crumb structure to see in opening them any sooner helps to create a more open, porous crumb structure.

Tom Lehmann/The Dough Doctor

895

[**/ Re: Rising crust pizza - SALP alternative?**](#)

While a plastic fat can be added right along with the flour in most pizza applications in this case where we have the GDL + soda mixed into the fat it should still be added later in the dough mixing process to help prevent any of the fat from being scrubbed off of the chemical leavening contained in the plastic fat. With the bake to rise concept you really want to limit the amount of fermentation that the dough receives. A little fermentation is OK but a lot of fermentation only leads to a sub quality finished pizza. The steps you have outlined for freezing a bake to rise pizza are valid and should work well as far as the dough is concerned but freezing

vegetable toppings is never a good idea if you want to have a decent finished pizza that isn't wet and soggy. This can be done commercially using either moisture controlled vegetable toppings or employing either mechanical or cryogenic blast freezing techniques. The Nestle DiGiorno/Delicio/Giordano's brand frozen bake to rise pizzas employ both moisture controlled vegetable toppings as well as blast freezing and highly specialized packaging to achieve the level of quality they have. Bake to rise pizza is not a new invention, it has been around for a VERY LONG TIME, over 70-years! When I was a small child my first introduction to pizza was the Chef Boyardee pizza kit. We have discussed this previously here if you wish to read more about it. Papa Murphy's take and bake pizza chain is a well known user of this concept (their stores don't even have an oven). It was mentioned that you could make these pizzas on a par-baked crust, this is not correct as a par-baked crust will not rise during the baking process, instead it will be just another form of a pretty standard frozen pizza that one might pick up at the local supermarket. The bake to rise concept pizzas must be made using a raw dough to allow it to rise during baking. I totally agree that it would be a lot easier to make the school's pizzas using a par-baked crust, then all they would need to do is to bake the pizzas long enough to fully cook the toppings and warm the crust, you will get a crispier finished pizza and for the most part, a better tasting finished pizza too as you can use a more standard dough formula utilizing more fermentation to build in flavor and you won't need to contend with any off flavors resulting from the CL (chemical leavening) system used in the bake to rise dough formulation.

Tom Lehmann/The Dough Doctor

896

[**/ Re: More yeast vs more fermentation time?**](#)

Fermentation time v/s yeast quantity, that is the question.

Adding more yeast to a dough is not a substitute for fermentation time because just adding more yeast will provide more leavening power but it will not provide the necessary time needed for the byproducts of fermentation (acids, alcohol, carbon dioxide) to begin breaking down the flour proteins. Additionally, there are enzymes present (amylase and protease) which hydrolize starch and proteins during the fermentation process which further conditions the dough making it easier to work with. All of this degrading of starch and protein also help to contribute to the flavor profile of the finished (baked) crust as well as adding to the overall digestibility of the crust. The key is "time", these reactions all require time to take place they do happen to a lesser extent with short fermentation times and higher yeast levels but not to the same extent as is achieved with a lower yeast amount and a longer fermentation time.

Tom Lehmann/The Dough Doctor

897

[**/ Re: Final Dough Temperature**](#)

There are a couple of problems associated with targeting a finished dough temperature as low as something in the 50 to 55F range;

1) Cold flour does not absorb water as readily as warm flour so a longer mixing time will be required, a longer mixing time = more bowl friction = more heat generation = increase in finished dough temperature, it's kind of a Catch 22.

2) The dough itself is very stiff at low temperatures, as the dough temperature drops below 65F the dough quickly becomes progressively stiffer/firmer/harder, whatever you want to call it. This by itself results in greater warming of the dough through increased bowl friction.

3) From a commercial standpoint about the lowest temperature that can be realistically achieved is 60 to 65F (60F is really pushing the envelope), and to accomplish that both refrigerated water and direct expansion refrigeration of the mixing bowl are required which means that a horizontal bar type mixer will be needed to mix the dough so we are talking about commissary type operations here as opposed to home or pizzeria.

4) Keep in mind that you would need to have the dough at 50 to 55F not just coming off of the mixer, but still at that temperature after scaling, balling (rounding) and boxing. The lowest finished dough temperature that I've encountered in the production of pizza dough was 65 to 67F and that was in a large box store commissary, even at that, with a mixing room temperature of 55F the actual dough temperature going into the cooler was closer to 75F than 67F.

Aside from these obstacles, it would be nice if we could bring the dough off of the mixer at a temperature where we could get it into the cooler within the 50 to 55F range as that would eliminate the need to cross-stack and down-stack BUT at the same time it would impact our dough management procedure as the amount of fermentation that the dough receives during the cross-stack period plays an integral part in our dough management procedure by allowing for the development of acids and allowing enzymes to do their job as well as changing dough density which further impacts the way the dough continues to ferment in the cooler especially when considering the impact of heat of metabolism during the residence time in the cooler.

As a side note, frozen dough is typically made using a dough with a targeted finished dough temperature of 65 to 70F (highly specialized horizontal bar type mixers are required for this task), the dough is then immediately scaled and rounded, slightly flattened, and it then immediately proceeds to the blast freezer where it is blast frozen to a core temperature of 15F +/- 2F, it is then packaged and held in a holding freezer for 24-hours at -10F prior to shipment/distribution. The idea here is to render the dough "stable" by getting it frozen before any significant fermentation begins. This is the reason why bread made from frozen dough has little or no fermentation flavor.

Tom Lehmann/The Dough Doctor

898

/ [Re: Trying for consistency lower TF](#)

Your pizzas look GREAT! :drool:

Tom Lehmann/The Dough Doctor

899

/ [Re: Rising crust pizza - SALP alternative?](#)

The proportions of GDL to soda are 2.2-parts GDL to 1 part soda. The amount to use of the GDL + soda blend is 3% of the total flour weight. Do NOT use any oil in the dough formula, instead use a plastic fat/shortening (DO NOT use butter or margarine as they contain water). Put the fat into a small bowl and add the GDL

+soda blend and using a fork or spatula mix the two together until the GDL +soda is THOROUGHLY incorporated into the fat, then you can add the fat to the dough formula and begin mixing the dough.

Adjust the amount of yeast to 0.25% compressed yeast or its equivalent of ADY or IDY. Target a finished dough temperature of 65F. Immediately after mixing scale and ball the dough, set aside to ferment at room temperature just long enough for the dough to be able to be easily opened (about 2-hours?), open the dough into a skin, place in an ovenable pan or on a piece of oven parchment paper and place on a pizza circle and store in the cooler for at least 1-hour, remove from the cooler and lightly oil the top of the skin, dress to the order, wrap in stretch wrap and place back in the fridge for at least 3-hours prior to sale/use.

If these will be baked in a home oven you will want to include 7% bakery grade sweet dairy whey powder or 5% sugar in the dough formula.

I've got formulas and procedures posted in the RECIPE BANK at <www.pmq.com>

900

/ Re: Rising crust pizza - SALP alternative?

The only other real option which you have is GDL (glucano delta lactone).
Tom Lehmann/The Dough Doctor

901

/ Re: Fermentation time counting question

Yes you do, but remember that the scheduling of those fermentation periods is just as important as the total fermentation time, for example, if we are going to give our dough 24-hours total fermentation time there will be a huge difference in how the dough handles if we were to ball the dough immediately after mixing and then give it 24-hours of undisturbed fermentation as opposed to fermenting the dough for 23-hours and then balling it and trying to open it into a skin only an hour later. This is one reason why I personally like to scale and ball the dough immediately or soon after mixing and then allow it to ferment in ball form for the bulk of the fermentation time (whatever that might be), when managing the dough in this manner you are almost assured of a dough ball that will be very relaxed and open easily.

Tom Lehmann/The Dough Doctor

902

/ Re: Rising crust pizza - SALP alternative?

If you cannot find SALP (sodium aluminum phosphate) try looking for CAPP (calcium acid pyrophosphate) it has a neutralizing value (N.V.) of 67 so the CAPP will equal 67% of the amount of baking soda used. If you are not using as commercially encapsulated product such as Wrise use a plastic fat instead of oil in the dough formula and blend the CAPP and the soda into the plastic fat.

Tom Lehmann/The Dough Doctor

903

/ Re: Trying for consistency lower TF

You should lightly oil the dough ball and leave it uncovered for at least 2-hours, then cover it for the duration of the cold fermentation time.

Tom Lehmann/The Dough Doctor

904

/ Re: Trying for consistency lower TF

A dough loading of 0.088 ounces per square inch is about average for a N.Y. style pizza so your 0.09 target is pretty close but your IDY level of 1% is much higher than what is normally used, in fact it's about 3X higher than normal which might be giving you a thicker than normal finished crust. My suggestion would be to drop the IDY down to 0.375% and see if the finished crust thickness is more to your liking.

Tom Lehmann/The Dough Doctor

905

/ Re: Pizza base burns underneath later in the day at restaurant

Jamie;

Have you considered the possibility that the problem might be with the oven? Not knowing anything about your oven I can't say, but if the oven has a very high crown that could account for the problem. Most operators with that problem address it by baking the pizza until the bottom is done (the way a pizza should be baked) and then lifting the pizza up into the crown of the oven to finish off the top. I've done this many times myself and it works well.

Tom Lehmann/The Dough Doctor

906

/ Re: Dough too hard to chew

Pete;

Pretty much all of it is correct. Getting a thorough bake is critical for achieving a more tender eating crust on the rolls. More yeast will help with oven spring for a better bake as will more fermentation of the dough, this is why I was a bit concerned over the rolls going straight from the fridge into the oven as a refrigerated roll of any kind is more difficult to bake than a roll at room temperature. Depending upon the dough formulation a little fat in the dough formula can also be beneficial as it promotes oven spring, heat transfer and produces a more tender eating characteristic.

Tom Lehmann/The Dough Doctor

907

/ Re: Yeast types and uses

You can use any type that is readily available to you. The type of pizza being made does not dictate the type of yeast used but many like to use IDY due to its

uniformity, ease of use, and long shelf life.
Tom Lehmann/The Dough Doctor

908

/ [Re: Pizza Expo 2020](#)

Jsaras;

Attend seminars directed at new operators and when on the show floor get as much information from vendors as possible (even "stuff" you don't think you will ever need) then when you get back home organize it in several 3-ring folders for use as a quick reference guide in the future, you'll be glad you did! Also visit with ALL of the different oven companies as well as the dough mixer and pan suppliers their information will be invaluable if you decide to "drop the hammer".

Tom Lehmann/The Dough Doctor

909

/ [Re: Bulk Fermenting vs. Individual Balls](#)

Please show us your dough formula and complete dough management procedure to include times and temperatures as well as information on the flour you are using as this will help us to better identify what's causing the problem.

Tom Lehmann/The Dough Doctor

910

/ [Re: Dough too hard to chew](#)

Everybody know you're not supposed to eat dough! :-D :-D :-D

Getting to you point, a couple of things come to mind;

- 1) Five hours fermentation probably wasn't enough fermentation time for your dough made by your specific dough formula, overnight would have been better.
- 2) It looks like you took the dough straight from the fridge to the oven which further compounded the issue as this would reduce the oven spring characteristics of the dough resulting in poorer bake out which in turn results in a tougher, chewier finished crust or roll in your case. You would most likely have been better off by just leaving the made up rolls rest at room temperature for that hour rather than putting them in the fridge.

Tom Lehmann/The Dough Doctor

911

/ [Re: Replacing water and powdered milk with whole milk?](#)

Whey powder isn't the issue, it's the heat treatment of the whey that's the issue. They are using what is referred to as high heat treatment aka bakery grade whey powder that has already been heat treated to denature the specific whey proteins responsible for creating the softening of the dough. Think of it like you would fresh eggs, all fresh eggs are considered to be dangerous to consume without proper heat treatment (cooking), but after heat treatment they are fine to eat. ;D

Tom Lehmann/The Dough Doctor

912

/ Re: Problems with NP dough in 70% hydration

I would consider 25C water to be cool, not warm (32C+ would be considered "warm") but with that said, 25C is a good water temperature to use when making your dough, however, I would encourage you to put the ADY into 4 to 5-times its weight of warm (37C) water to hydrate and activate it, then just add it right to the dough water in the mixing bowl. After adding the yeast suspension go ahead and add all of the remaining ingredients and incorporate by hand until a dough begins to form (about 5-minutes), turn the dough out of the bowl and scrape the bowl clean, lightly oil the bowl, knead the dough for just a couple of minutes and form it into a ball and place back into the mixing bowl or other suitably sized container (be sure it's lightly oiled), allow to ferment for about 2-hours (this will allow for some biochemical gluten development to take place), turn the dough out of the bowl and knead until the dough begins to take on a smooth appearance (about 5-minutes?), place dough back into the lightly oiled container and allow to ferment for 30-minutes, turn the dough out of the container and scale/divide into desired weight pieces, form each piece into a ball, lightly oil each dough ball and place into individual plastic bread type bags, twist the open end into a pony tail to close and tuck it under the dough ball as you place it into the fridge to cold ferment for 48-hours. To use the dough, remove from the fridge about 2-hours prior to use time, roll the bag down around the dough ball and invert over a floured surface allowing the dough ball to fall from the bag, flour both sides of the dough ball and open into a skin by your preferred manner, the skin is now ready for immediate use.

Tom Lehmann/The Dough Doctor

913

/ Re: Dunkin' Donuts Yeasted Donuts copycat

I've not seen corn starch added to the dough formulation but it is commonly used in icings and glazes and it is an integral part of powdered sugar.

Tom Lehmann/The Dough Doctor

914

/ Re: Remodeling kitchen...Best surface?

Cultured quartz, offers both beauty and durability with little to no maintenance and it's widely available even at home centers.

Tom Lehmann/The Dough Doctor

915

/ Re: SAF High Power IDY

RedSauce;

My feelings exactly.

Tom Lehmann/The Dough Doctor

916

/ Re: Problems with NP dough in 70% hydration

I would tend to agree with that. That is not the same as putting the ADY directly into a pizza dough with a more typical absorption of 62 to 66%.

Tom Lehmann/The Dough Doctor

917

/ Re: Problems with NP dough in 70% hydration

When ADY is not correctly hydrated glutathione can/will be leached out of it resulting in some inconsistencies in your dough both due to the reducing effect of the glutathione and also due to the fact that yeast cells from which glutathione has been removed from will not ferment.

You might not readily see this but it is happening.

Tom Lehmann/The Dough Doctor

918

/ Re: Oil in dough

Gus;

Putting oil in the dough will help to allow the dough to rise better and it will certainly tenderize the crumb so the pizza is Less, not more chewy. Because oil repels water it also helps to prevent the development of a gum line in the crust during baking (putting oil on the skin prior to applying the sauce will serve the same purpose). Your procedure really isn't all that complex so I really wouldn't worry about it. The one thing to do next time you make pizza is to use colder water as this will help to lower the finished dough temperature.

Tom Lehmann/The Dough Doctor

919

/ Re: Problems with NP dough in 70% hydration

In addition to what Yael said, I'd also suggest hydrating/activating the ADY in a small amount of warm (38C) water for about 10-minutes prior to adding it to the dough water in the mixing bowl.

Tom Lehmann/The Dough Doctor

920

/ Re: Cooling the dough balls down to an internal temperature of 50 to 55F

It all depends upon how much fermentation you want to achieve during the CF period. Remember that the fermentation rate will dramatically slow at temperatures below 45F and almost stop at temperatures of 40F and lower, so at 42F there won't be very much fermentation taking place. At 50 to 55F internal dough temperature there will be a measured amount of fermentation taking place which is suitable for dough that will be subjected to up to 72-hours CF but yet it

will still be "usable" at the 24-hour mark if necessary. Dough which is allowed to cool to a lower temperature will require more time to fully ferment so if you are planning to hold the dough for 5 to 7-days or more cooling it to a lower temperature is the right thing to do but keep in mind that the dough will be under fermented at the other end of the spectrum (24 to 48-hours). There are some "00" flours which have a very short fermentation tolerance and allowing these doughs to cool to a lower temperature would be an effective way to better manage dough made with these types of flours. As for working with reach in coolers we have found that it is desirable to reduce the finished dough temperature by at least 5F when using a reach in cooler as opposed to a walk in cooler due to the lower efficiency of the reach in when loading it with dough.

I hope this has answered your question.

Tom Lehmann/The Dough Doctor

921

[/ Re: Supplies in Alaska](#)

Have you "poked" around at other independently operated stores to see if you can find out where they source their materials from? I would have guessed that there would be some type of distributor in Anchorage that you could order from or special order from, if not maybe a distributor on Washington or Oregon might be able to get things to you a bit cheaper?

Tom Lehmann/The Dough Doctor

922

[/ Re: All Trumps Unbromated/Unbleached - Inconsistencies?](#)

No, it's because when a large wholesale account receives their flour it comes in a tank car (road or rail) and it was milled immediately before shipment (usually just hours or a day at most after milling) so it is easy to have a Farinogram report specific to that particular lot of flour. With bagged flour the routing is different as the flour goes from the mill in bags to a mill storage area, then it's shipped to a distributor and then sometimes another distributor like an ingredient vendor this makes it difficult to match the bagged flour to a Farinogram report, and add to that, unless you specify from your vendor not to mix lot numbers on an order, you may find that your flour shipment consists of two or more different mill lots. Due to laws regarding trace ability it probably wouldn't be too difficult for the mills to have a computerized system where you would enter your lot number (shown on each bag) and it would give you a page showing the Farinogram report. Then there is the issue of explaining just what it is and how to use it as well as how to develop a Farinogram factor for each of your doughs. That sounds like a lot of work to me for any company that is highly competitive and trying desperately to keep their costs down. A possible solution would be to charge an annual fee to access such information, I don't know how many operators would avail themselves of such a program though, but it's a thought.

Tom Lehmann/The Dough Doctor

923

[/ Re: All Trumps Unbromated/Unbleached - Inconsistencies?](#)

In our pizza classes I used to ask my students if they could tell me what the difference between flour and hockey pucks was.

Answer: Hockey pucks are consistent and always the same. Flour isn't.

This is why large commercial bakeries have a FARINOGRAM REPORT ON EACH AND EVERY LOT OF FLOUR THEY RECEIVE. The Farinograph report gives vital information on flour absorption, mixing time and overall strength of the flour allowing them to make the necessary adjustments right up front without any surprises. Most of the time we see the most significant changes in flour during the period which is referred to as new crop change-over, this is when the new crop is just coming into the mills, for spring wheat based flours this is usually mid-August to early September. For winter wheat based flours this is usually mid July to early August.

Tom Lehmann/The Dough Doctor

924

[/ Re: Why and when is it recommended to use malt in the dough?](#)

You might find some advantage to adding a very small amount of malt to the biga if you are fermenting the biga for several hours. If you are baking your pizzas at or above 750 to 800F I'd suggest a non-diastatic malt but if you are baking at a lower temperature I'd use a diastatic malt.

Tom Lehmann/The Dough Doctor

925

[/ Re: Pizza peel choices](#)

My own personal peels are all wood peels, they're hard to beat for any kind of dough and they dramatically reduce the incidence of the dough sticking to the peel. I use aluminum peels as my oven peels only.

Tom Lehmann/The Dough Doctor

926

[/ Re: Having issues stretching dough? Seems to stretch unevenly.](#)

Spot-on!

My suggestion would be to ball it immediately after mixing (when you scale it) and then lightly oil the containers, drop the dough ball into the container, lightly oil the top of the dough ball, leave the top of the container off when you place it into the fridge until the internal dough ball temperature reaches 55F/12.8C, then apply the lid for the duration of the CF period. When ready to use the dough, remove from fridge and allow to temper to 50F/10C, then begin opening the dough ball(s) into skins. You will want to experiment with the final temperature (50F/10C) as some find it easier to open into skins at a slightly higher temperature. You probably won't want to go more than 65F/18.3C though.

Tom Lehmann/The Dough Doctor

927

[/ Re: Why and when is it recommended to use malt in the dough?](#)

Getting back to a very basic question: Is your flour malted in any way?
Tom Lehmann/The Dough Doctor

928

[/ Re: Having issues stretching dough? Seems to stretch unevenly.](#)

If you're not scaling and balling before the CF period, when are you scaling and balling? Also, how much fermentation is the dough getting in ball form between balling and opening? Am I missing something in your procedure?
Tom Lehmann/The Dough Doctor

929

[/ Re: papa johns pizza ZING](#)

Yeast, a living organism needs to feed and it feeds off of sugar that is both added to the dough as an ingredient (the exception being lactose which is not metabolized by the type of yeast we use) and also the enzymatic conversion of starch into sugar by the enzyme amylase which is both present with the yeast and also added to the flour by the miller as sprouted barley flour (malted flour). As yeast feeds it produces carbon dioxide, acids (acetic, lactic, and propionic) and alcohol. What John is referencing as "Zing" is a slight acidity formed when the carbon dioxide gas is dissolved in the water from the sauce creating a mild acid (carbonic acid). He is correct in the formation of this acid but I would question if it is a significant factor in the flavor of a pizza since the other three acids formed are significantly stronger and are recognized for their contribution to the flavor profile of a pizza. The slight tartness, regardless of how it is formed or what acid is responsible, is an important aspect of our sensory response to a food in that it makes us salivate and we unconsciously associate salivation with something that tastes good to us.
Tom Lehmann/The Dough Doctor

930

[/ Re: convection and undercooked dough - lou's semolina](#)

There is a very good reason why large, commercial bread ovens (not artisan, that's a whole different story) have an air circulating device that's called a "colorator" installed in them, they are installed in the oven at a point late in the baking stage where they serve to provide precise control of crust color after the loaves have been baked. Like I said, rotating rack ovens are much like a home convection oven but without the airflow they are plagued by one major issue, that is heat stratification so the products at the top of the rack bake at a different rate than that at the bottom of the rack until the airflow is turned back on again. To get around this many ovens now pulse the airflow fans for a set period of time at the beginning of the bake cycle. About the best I can say for it is that "it works".
Tom Lehmann/The Dough Doctor

931

[/ Re: convection and undercooked dough - lou's semolina](#)

True, but they lack the capacity needed by many pizzerias.
Tom Lehmann/The Dough Doctor

932

/ [Re: convection and undercooked dough - lou's semolina](#)

I agree with the comments from Bob's Red Mill. But remember that while the baking trays rotate through the oven cavity in a reel oven they are not considered to be convection ovens by any sense. Convection ovens are characterized by a much greater and focused airflow over and around the product. This should not be confused with air impingement baking which is totally different in that it employs VERY high speed airflow which is VERY highly focused on the product during baking (the technology of baking is very different from convection baking). Reel ovens are the mainstay of the retail baking industry where they serve to bake everything from pies, cookies, pastries, as well as all types of breads and rolls. Rotating rack ovens are a form of convection oven which is utilized in the baking industry and much like many home ovens, they have a feature which allows for shutting off the convection fans for a portion of the baking cycle in order to prevent peaking of layer cakes and poor crust development on loaf breads. By the way, Chicago pizzas are given a long bake time to ensure the raw sausage (what is Chicago style pizza without the use of raw sausage?) is fully cooked. My favorite Chicago pizza places are Nancy's, Uno, Due, Gino's and Beggars.
Tom Lehmann/The Dough Doctor

933

/ [Re: convection and undercooked dough - lou's semolina](#)

Pete;

There is a huge difference in the way a deck oven bakes and the way a reel oven bakes. Thin crust Chicago pizzas are typically baked in a reel oven at 500 to 550F for just shy of 30-minutes while the deep dish pizzas take a bit longer at nearly 45-minutes. This is why the reel oven are so popular in Chicago, they have a huge capacity when long baking times are the order of the day. Deck ovens have their burner located immediately below the deck in order to maintain deck temperature and recover temperature quickly while reel ovens have a single ribbon burner across the bottom of the oven and the shelves (decks) just rotate through the heated air. There is also a big difference in crown height of the two ovens also, deck ovens have a relatively low crown height measured in just a few inches while a reel oven really doesn't have a crown. Middleby-Marshall reel oven are the most common reel ovens encountered in Chicago. Cobblestone Oven company is a major supplier of these ovens in Chicago, they don't make them and they are not a distributor, they refurbish existing ovens and resell them. When maintained they will last just about forever.

Places making an authentic Chicago style pizza will often use a reel type oven, occasionally they will use a Middleby-Marshall but more commonly I see the smaller reel ovens made by Fish and Reed Oven Company being used unless they are a high volume shop.

Tom Lehmann/The Dough Doctor

934

/ Re: Aluminum pans for Chicago deep dish

Remember, NEVER, EVER soak any seasoned pan in water! The seasoning will begin peeling off like a bad sunburn then you'll need to strip all of the remaining seasoning off of the pan(s) and start all over again.

We have previously had some discussion on how to clean seasoned pans if you want to look back through the archives.

Tom Lehmann/The Dough Doctor

935

/ Re: Spiral Mixer (commercial) recommendations and general feedback

A spiral mixer operating at 80% of capacity is a "walk in the park" for that design of mixer. They are not nearly as load sensitive as planetary mixers are, and one thing that's a sure bet is that a spiral mixer will outlast a planetary mixer any day of the week and with a lot fewer repairs during its life span.

Tom Lehmann/The Dough Doctor

936

/ Re: convection and undercooked dough - lou's semolina

Pete;

What temperature are you baking it in your reel oven? What shelf material do you have (steel, transite, or open grid?)

Tom Lehmann/The Dough Doctor

937

/ Re: Business planning for new shop

Also check out your state SBA (Small Business Assn.) to see what kind of assistance they can provide. We used to have a program called KVAC (Kansas Value Added Center), it was a state funded association operated through Kansas State University comprised of volunteer and retired business people whose sole purpose was to assist new start up businesses in the state of Kansas. All at no charge to the client. We were paid a token stipend for our time through the KVAC program. I don't know if New York state has anything like this but from all the hype I hear from N.Y. about a "business friendly" environment I would think that they would have something similar in place.

Tom Lehmann/The Dough Doctor

938

/ Re: Calling all Dough Savers

I'm betting that the best research team at M.I.T. could not come up with a poorer shape for freezing than a round ball shape (think dough ball). Just remove the dough balls from the box and flatten to about 1-inch, or so in thickness, then place in the freezer. They will freeze much more thoroughly and faster than they would if left in ball shape and you will have markedly improved your chance at success in

making pizzas using the frozen dough at the same time.
Tom Lehmann/The Dough Doctor

939

/ Re: ny style dough that cracks when folding

Just to confirm, you want to make a New York style pizza that has a crispy crust as opposed to a more typical fold able crust common to N.Y. pizzas. It sounds like you want to make a New Haven style pizza which I've often described as a New York style pizza but with a crispy crust.

Here is a good dough formula to start with;

Flour: 100%(strong bread flour)

Salt: 1.75%

Sugar: 2%

Oil: 2%

IDY: 0.375%

Water: 64% (variable)

Mix dough using delayed oil addition mixing method, and mix just to a smooth dough consistency.

Targeted finished dough temperature: 75 to 80F

Basic Procedure:

Mix

Scale and ball

Box and oil top of dough balls.

Cross-stack in cooler until internal dough ball temperature reaches 55F.

Down-stack

Allow to ferment for a minimum of 24-hours, best at 48 to 72-hours.

Open dough balls into skins by hand.

Dress and bake at 500F.

Tom Lehmann/The Dough Doctor

940

/ Re: U.S.D.A. forecasts the smallest all-wheat area on record

While Kansas USED to be known as "The Wheat State" about 6-years ago corn surpassed wheat as the main agricultural crop in Kansas.

To keep on top of what is actually happening to wheat prices you have to look at the world picture and take into what the wheat crop in Brazil, Argentina, Canada, Australia, China and Russia are doing. Generally it's not a big issue if one of those countries falls behind as the other countries will export wheat to make up the difference but if several or all of them face issues with their wheat crop (like we saw about 12-years ago where ALL of them faced severe issues) it will go to a whole new playing field where wheat might not even be available and when it is it will be expensive and flour prices will spike through the roof as they did back then. If we ever find ourselves in that spot again (we probably will) watch the world wheat carryover, there are the world wheat reserves, when things were really bleak we were down to less than 3-days! Think of it like this, you are out of a job and can't find employment and you are now tapping into your 401K (the wheat

reserves), when it's gone you are up that proverbial creek without a paddle.
Tom Lehmann/The Dough Doctor

941

/ Re: Neapolitan Pizza - Puffy Airy Crust (Canotto Style)

Dough absorption is the amount of water added to the dough, it is expressed in percent of the total flour weight used to make the dough. For example, if we made a dough with 700-grams of flour and it required 400-grams of water to give the desired handling and finished crust characteristics the dough absorption in this case would be 400 divided by 700 X 100 or 57.14% (we would round that off to 57%). All of the other dough ingredients are also expressed in this very same manner.

If you have a dough formula (dough formulas are based on weight measures (grams, kilograms, ounces, pounds, etc.) while recipes are based on volumetric portions (teaspoons, tablespoons, cups, buckets, etc.) that is given in percentages and you want to find the weight for those percentages it's very easy to do:

- 1) Decide how much flour you want to use by weight measure.
- 2) Using your calculator, enter the flour weight then press "X" followed by the ingredient percent that you want the weight for and read the ingredient weight in the display. The ingredient weight will always be in the same weight measures that the flour is shown in.
- 3) Flour is always shown as 100%.

I used to tell my students that it is just like calculating the amount of a tip where the flour weight is the cost of the meal and the ingredient percent is the percent of the tip that you want to leave.

Tom Lehmann/The Dough Doctor

942

/ Re: Finished dough temperature range

BBE;

65% RH (relative humidity?) You most likely mean dough absorption (65% water based on the total flour weight). A finished dough temperature in the 70 to 75F range is recommended when the dough will be mixed entirely by hand as the colder dough temperature makes for easier dough kneading. When machine mixing is used we typically recommend a finished dough temperature between 75 and 80F unless there is poor refrigeration and in that case it's back to the 70 to 75F recommendation. Targeting a higher finished dough temperature just makes the dough more sensitive to slight differences in finished dough temperature as well as room temperature. For example, at 72F the dough will show little effect of missing the targeted temperature range by 2 or 3F (like 77 or 78F) but that same dough at 80F and getting a finished dough temperature of 82 or 83F the dough will show greater effect in the form of faster fermentation as well as being more difficult to cool after being placed into the fridge. The reason for waiting for the dough to drop in temperature to 55F before covering it in the fridge is to reduce the propensity of a warm dough to sweat in the lidded container but more importantly to ensure that it has cooled to a point where it can be further cooled even though the container is lidded at a constant and predictable rate. Remember, just putting the dough into

the fridge doesn't stop fermentation, the dough MUST be cooled to a temperature below 40F to retard fermentation, if not the dough will over ferment or blow, and to add insult to injury, the dough is always in the process of warming up due to the heat of metabolism resulting from the fermentation process. This is why I've always said that you cannot have effective dough management without temperature control.

Tom Lehmann/The Dough Doctor

943

/ [Re: Why is it happening](#)

Peter;

It doesn't make sense to me either. In many cases where high salt levels are used it is the step taken to control the fermentation rate that has resulted from improper dough management (failure to cross-stack or lidding fermentation containers too soon) or just lack of dough temperature control. Once these are properly addressed the high salt levels are no longer necessary and in my opinion, desirable as there is plenty of salt coming from everything that is put on top of the dough.

Marolla1;

The way to measure dough temperature is by use of a dial aka stem type thermometer.

Tom Lehmann/The Dough Doctor

944

/ [Re: Too much char?](#)

You really can't, but I'll give you an example, years ago we R.E. the Papa Murphy's crust and found that the sweetness perceived in the finished crust (not the dough) was due to 5% sugar. So if you back it down to 2% to see if that gets the color back on track you can then begin incrementally increasing the sugar to get some sweetness in the finished crust, and if it's sweetness that you are after I suggest limiting your total fermentation time to not more than 24-hours CF, this is because fermentation = acid formation and acid = tartness, tart is just the opposite of sweetness. From an ingredient standpoint you might consider replacing any fat in the dough formula with ghee as this will contribute to a perception of sweetness in the finished crust.

Tom Lehmann/The Dough Doctor

945

/ [Re: Too much char?](#)

Fyre;

Do you realize that you are using 7.5% sugar in your dough formula? A more typical level would be 1.5 to 2%. At this sugar level you should get a more even, uniform browning by baking on either a screen or directly on the oven deck. Make this one change and let us know how it works for you. Include pictures if possible.

Tom Lehmann/The Dough Doctor

946

/ Re: Hello From Chicago!

Brian;

Just be sure to season your new tin-plate pans well prior to their first use or they won't bake any differently than your aluminum pans, and once you have them well seasoned NEVER soak them in water for any reason. If you do, the seasoning will begin to peel off like a bad sunburn and you will need to strip all of the seasoning off of the pan and start all over again. Instead, to clean the pans just wipe out with a clean towel or if you feel absolutely compelled to wash the pans grasp pan in one hand, dip in soapy water, LIGHTLY scrub with a soft plastic bristle brush, rinse in clear water, wipe dry (NOTE: At no time did I say to release your hold on the pan), now place the pan into a warm oven to force dry for about 15-minutes, now you can put the pan away. If you don't follow these basic rules for a seasoned pan these infamous words will haunt you: "I told you so". :-D

Welcome to the site!

I'm an ex south sider (Tinley Park).

Tom Lehmann/The Dough Doctor

947

/ Re: Flours for Roman-style pizza dough

I would advise not using more than 25% combined spelt and semolina flour to start with, then you can begin to incrementally increase the spelt-semolina flour blend to whatever your specific flour will accept. You will also want to determine the correct absorption value the the spelt-semolina blend that you use. If you search back through the archives we have had a lot of discussion on whole-wheat and multi-grain blends, in this discussion I explained in detail how to find the absorption of these "composit" flour blends. I would also highly recommend that you put the composit flour blend in an autolyze for a minimum of 1-hour to allow for complete hydration priot to actually mixing the dough.

Tom Lehmann/The Dough Doctor

948

/ Re: Why is it happening

When using IDY and hand mixing the dough it is always a good idea to suspend the IDY in a small portion of warm (95F/35C) water before adding it to the dough. You should be targeting a finished dough temperature in the 70 to 75F range, and you should not be lidding the containers right away, instead, very lightly oil the top of the dough after it's in the container, then allow the dough to cool in the fridge until the internal dough ball temperature is 55F/12.7C, then apply the lid for the duration of the cold fermentation period.

Unless you're really big into physical fitness and want arms like the village blacksmith all of that kneading really isn't necessary. Let biochemical gluten development do the work for you. Just knead the dough until it begins to take on a smooth appearance, then scale, ball and place into the fermentation containers.

Tom Lehmann/The Dough Doctor

949

[/ Re: Too much char?](#)

I'm confused, you use flour or semolina flour on the peel to help with peeling the skins but yet you say you are baking for at least one minute on screens?
If you can share your dough formula as well as dough management procedure it would be a big help.

Tom Lehmann/The Dough Doctor

950

[/ Re: roni roll bursting open](#)

I agree, I also think the dough is too thin, When making rolled items I always like to use a rolling pin or pastry pin to open the dough as this gives me a more uniform dough thickness than opening by hand. A uniform dough thickness is important as it helps to eliminate blow-outs. I also like to make several French cuts across the top of each roll to allow steam to escape and to allow for controlled expansion during baking. In some cases it also helps to spray the rolls with water immediately before placing in the oven, this allows the dough to expand a little during oven spring which reduces the chance for a blow-out.

Tom Lehmann/The Dough Doctor

951

[/ Re: Prep table](#)

Another option for the home (what I use) is a wood (maple) top. They're very reasonable priced and available from most home centers like Menard's. For a commercial application cultured quarts is also a good option as it doesn't stain or discolor and is nearly bullet proof in all other ways and you can get it in just about any color you want.

Tom Lehmann/The Dough Doctor

952

[/ Re: Spiral Mixer \(commercial\) recommendations and general feedback](#)

Here is a quick summary of my suggestions;

- 1) Two speeds are better than a single speed.
- 2) Reverse rotation is a nice feature to have.
- 3) A removable bowl can make life a lot easier in some shops.
- 4) A drain plug in the bowl makes cleaning a LOT EASIER.
- 5) Spiral mixers will effectively mix a dough as small as 25% of stated bowl capacity or as large as 115% of stated bowl capacity so size your mixer so your dough size is close to being in the middle of this bracket.

Note: To clean a spiral mixer, put a couple gallons of HOT water in the mixer, cover bowl with a plastic sheet, allow to steam for 20 to 30-minutes, scrub with a long handle plastic pot brush, pull the drain plug and drain while rinsing with clear water, sanitize, reinstall drain plug. Without that drain plug you will need to bail the water out of the bowl (now you understand why the drain plug is important).

Tom Lehmann/The Dough Doctor

953

/ Re: Why and when is it recommended to use malt in the dough?

Unless the flour is malted or you have added diastatic malt to the dough/biga formula the use of a biga will actually result in a lighter crust color. This is due to the fact that a biga is fermented and one of the byproducts of fermentation is acid (acetic, lactic and propionic), these acids lower the pH of the dough which inhibits its ability to develop color during the baking process. This is why sourdough breads are always lighter in color. If diastatic malt or amylase enzyme is present the starch portion of the flour can be hydrolyzed into sugars (malt or dextrose) which provide a nutrient for the yeast as well as helping to develop crust color during baking.

Tom Lehmann/The Dough Doctor

954

/ Re: Why is it happening

Also, what was the finished (mixed) temperature of the dough? How did you put the dough balls into the fridge (type of container, was it lidded or not?)

Tom Lehmann/The Dough Doctor

955

/ Re: Spiral Mixer (commercial) recommendations and general feedback

Have you looked at the not too far distant archives for the discussion we have had on spiral mixers?

Tom Lehmann/The Dough Doctor

956

/ Re: Dough Management Problem

A couple of things to comment on;

1) Your dough absorption is 65% which would normally be pretty typical but as you are using VWG at 5.5% (VWG has an absorption of approximately 175% so 5.5% VWG would be responsible for 9.6% of that 65% absorption) so the overall absorption of 65% may seem OK but in reality it might be too low? I suggest increasing the dough absorption in 2% increments to see if the dough becomes any easier to open.

2) Your dough ball count in the box is too high, reduce the dough ball count per box by 50%.

Tom Lehmann/The Dough Doctor

957

/ Re: roni roll bursting open

To better answer your question I really need to see a picture of the burst roll.

Tom Lehmann/The Dough Doctor

958

[/ Re: Spiral Dough Hook for KitchenAid Artisan?](#)

I'm of the same opinion as TXCraig1, the "C" hook aka dough hook doesn't work in any size mixer unless the bowl is at near maximum dough capacity which probably explains why we used to see sooooo many used Hobarts totally worn out. The reverse spiral dough arm was first made available back in the late 60's (AIB did prototype dough testing with it at the time), thankfully, the reverse spiral dough arm is now standard equipment with all new Hobart mixers (at least the large ones that I deal with). When Hobart made their own motors it was a very different "ball game", but around 1975 they were forced to contract all of their motors, what they got were gutless wonders. When AIB moved from Chicago, IL to Manhattan, KS in 1977 I had several of the old Hobart A-120 (12-quart) mixers as well as an A-200 (20-quart) mixer. Hobart agreed to exchange all of our old mixers for new models but I kept my old mixers as they were in excellent condition. After setting up shop in Manhattan we discovered the shortfalls of those new mixers. Remember, I kept my old ones so it didn't impact me or my lab at all but others were in for a huge surprise, the new mixers would stall with the same dough size that the old ones were mixing on a daily basis, and the speed would vary as the dough developed (not good for research) while my old ones just kept plugging along just fine. It really wasn't until they came out with the Legacy line that they seemed to get things under control.

Tom Lehmann/The Dough Doctor

959

[/ Re: Aluminum pans for Chicago deep dish](#)

Ya gotta season those bright colored aluminum pans unless you like light colored crusts. We have discussed this a number of times here as well as how to maintain those seasoned pans.

Tom Lehmann/The Dough Doctor

960

[/ Re: Neapolitan Pizza - Puffy Airy Crust \(Canotto Style\)](#)

Let's go by the old adage of "first things first" and if absorption doesn't help then we can dig into dough management.

Tom Lehmann/The Dough Doctor

961

[/ Re: Neapolitan Pizza - Puffy Airy Crust \(Canotto Style\)](#)

Start increasing the dough absorption, first by 5% then after that in 2% increments, that should help to open the crumb structure. With the crumb structure more open you may find that the crust is developing too much color, address that by eliminating the sugar from your dough formula.

Tom Lehmann/The Dough Doctor

962

[/ Re: Correct Pizza Oven Temperature](#)

Alex;

Try it, see if it works.

Something to ponder; Maybe the cheese you are using isn't well suited to high baking temperatures? Maybe try a different cheese too.

Tom Lehmann/The Dough Doctor

963

[/ Re: Neapolitan Pizza - Puffy Airy Crust \(Canotto Style\)](#)

Pictures of your pizza would have helped immensely, but since we don't have that to go on I'm going to take a "SWAG" and say that you will need to increase the dough absorption to at least 65% or more, and bake at a higher temperature, not knowing anything about how your pizzas are being baked I'll say to bake the pizzas on a baking steel 3/8-inch thick or a stone at least 1/2-inch thick as hot as you can get your oven (allow at least 90-minutes for everything to come up to temperature before baking your first pizza).

Let us know if this mover your finished pizza characteristics closer to where you would like it to be.

Tom Lehmann/The Dough Doctor

964

[/ Re: English Muffin Bread.....?](#)

When I was teaching in the AIB Baking Science and Technology class we used to make it when the students were in the large production shop, I don't think I have a copy of the formula anymore but if memory serves me correctly we used a spring wheat flour with 13.8 to 14.2% protein content, 1% oil, 6% compressed yeast, 1.75% salt, sugar 2%, vinegar (100-grain strength) 0.75%, water 72% (variable).

Mixing:

Use delayed salt addition mixing method.

Mix slightly past full development.

Targeted finished dough temperature is 63 to 65F (this is CRITICAL).

Fermentation time is 15 to 20-minutes.

Final Proof is hot and dry at 105F/50 to 55% R.H.

Bake at 400F

De-pan loaves for cooling immediately after baking.

Note:

We determined dough absorption experimentally by increasing it to the point where the proofed loaves would collapse during baking then back it down to a point where we no longer experienced collapse, with some lots of flour we were able to use as much as 78% absorption.

The mixing time can be slightly reduced by withholding 10% absorption and mixing to full development, then adding the withheld water along with the salt and mixing it in during the last few minutes of mixing.

Handle the fully proofed dough GENTLY.

Hopefully I didn't forget too much!
Tom Lehmann/The Dough Doctor

965

[/ Re: Help!!! Can't keep my dough balls as balls.](#)

Additionally, your IDY amount calculates out at 0.883% based on 453-grams of flour weight which is nearly 3 times the suggested amount of 0.3%. The IDY amount shown for the dough based on 1-Kg. of flour weight is correct at 0.3%. As Yael indicated the finished dough temperature is critical, especially when making dough in warmer climates, in your case you should be targeting a finished dough temperature of about 70F/21C, I would also recommend that you lightly oil each dough ball and place into individual plastic (bread type) bags, then twist the open end into a pony tail and tuck the pony tail under the dough ball as you place it into the fridge to cold ferment. I think this will work better for you than what you are presently doing. To use the bagged dough balls, remove from the fridge about 1-hour prior to use, roll the bag down around the dough ball and invert the dough ball over a floured surface allowing the dough ball to fall free from the bag onto the bench top, flour both sides of the dough and begin opening into a skin by your preferred method.

Tom Lehmann/The Dough Doctor

966

[/ Re: Correct Pizza Oven Temperature](#)

I'd recommend starting with 250 to 275C for the deck temperature and use the same temperature on the top, then adjust the top temperature to give you the desired top pizza color characteristics once the bottom is baked, remember, not all cheese colors the same so your specific mozzarella cheese or cheese blend may color up entirely differently than that which someone else is using. The dough management as well as the dough formulation will also impact the way the crust bakes. The rule for baking pizzas is to get the bottom crust properly baked, then worry about the top of the pizza.

Tom Lehmann/The Dough Doctor

967

[/ Re: Dunkin' Donuts Yeasted Donuts copycat](#)

Nope, it's not the radiant heat coming off of the aluminum wok, the oil will easily absorb that heat.

There is NOTHING that will give you a 72-hour shelf life on a yeast raised donut. If you want to have a 72-hour shelf life from a donut you have to make cake donuts, not yeast raised donuts.

Tom Lehmann/The Dough Doctor

968

[/ Re: Dunkin' Donuts Yeasted Donuts copycat](#)

One thing I should point out is that what I fry donuts in is different from what you are frying them in, I'm talking about using a commercial donut fryer using a bit more than a cube of shortening (50#) so I have a huge amount of latent heat stored in all that hot oil while you are frying in what appears to be maybe just a couple pounds of oil so the temperature is not as consistent as mine is, with that said you may need to fry your donuts a little longer, you will sacrifice something in quality but that's the nature of the beast. The good news is that yeast raised donuts have a shelf life measured in hours so more than likely they'll all be gone in no time at all.
:chef:

Tom Lehmann/The Dough Doctor

969

/ Re: Adding high ratio of shortening/oil in pan pizza dough

Hard fats like beaded mono-glycerides are not appropriate as they have a melting point that is too high (typically around 136F) you need something with a melting point close to body temperature or it will impart a waxy mouthfeel to the finished product. Do you have a specific reason for wanting to use a more expensive spray dried product than just a blended plastic fat? The more processing steps that go into making a product the more expensive it usually becomes. The products you are looking at are typically used in specific applications like dry mixes.

Tom Lehmann/The Dough Doctor

970

/ Re: Frozen dough recipes and stabilizers

If you're going to use yeast your shelf life will need to be limited to not more than 15-days unless you use blast freezing. Without blast freezing, if you want/need more than 15-days shelf life you will need to use a par-baked crust to build your pizza on. As for the sauce, you will need to use as little water as possible while still being able to achieve spreading/application consistency. Some frozen pizza manufacturers will incorporate gums into the sauce (Ticaloid Lite from TIC Gums) to help control syneresis as the sauce melts during the early stages of baking, still it is a good idea to limit the amount of sauce used.

Regarding chemical leavening, a coated/encapsulated chemical leavening system such as Wise is used only if you are making a bake to rise type of crust but since this type of crust also contains yeast you're back to blast freezing again.

So, what about the pizzerias that make a pizza, partially bake it, wrap it and sell it from a frozen case in their store? I think everyone will agree that they are not true restaurant/pizzeria quality pizzas but most will also agree that they are better than make delivered pizzas. This is OK at the store level where the food item is not exposed to the masses as it is at a supermarket, but once you take it to the supermarket you MUST ensure that the pizza is heated to an internal temperature of at least 160F and then get the product frozen as quickly as possible which may require that you have an effective HACCP (hazard analysis critical control point) plan in place that is being followed.

Tom Lehmann/The Dough Doctor

971

/ Re: Adding high ratio of shortening/oil in pan pizza dough

Before answering your question I would like to know what substrate the fat is sprayed on.

Tom Lehmann/The Dough Doctor

972

/ Re: Frozen dough recipes and stabilizers

Dustin;

Have you REALLY looked into this? I mean from a legal point of view?

Because your pizzas will be sold from a venue other than where they are made (pizzeria) you will have to have at minimum the following:

Ingredient declaration

Nutrition facts panel

Where the pizza is made (hard address)

Approved name (yes, there are laws regulating what you can call your pizza)

If there is any meat on the pizza it will need to be made in a USDA inspected facility.

You will most likely need to have special packaging (plain stretch wrap doesn't cut it).

The dough formula isn't anything special but you might want to consider moisture controlled vegetable toppings if you will not be blast freezing the pizzas. Blast Freezing= -30 to -45F, this can be done mechanically using an ammonia freezer or cryogenically using an industrial cryogen such as liquid carbon dioxide or liquid nitrogen.

Due to the UV light in the store you will need to have a full panel over the top of the pizza or you will need to have a packaging film with a formulated UV barrier to prevent the toppings from fading in color which can happen quite rapidly.

Tom Lehmann/The Dough Doctor

973

/ Re: cheese blends

Nothing special but just a good cheese flavor which I personally think is an improvement over just plain mozzarella is a blend consisting of 80% Grande WM mozzarella + 15% Parmesan and 5% Romano. After that, "the world is your oyster", begin experimenting with different cheeses to find what YOU like best for YOUR pizzas.

Tom Lehmann/The Dough Doctor

974

/ Re: High-gluten flour in Nashville area

Can you break it down into smaller (5-pound) bags and store it in the freezer? If you can store it in the freezer for 6-weeks you can then transfer it to a container that can be tightly sealed and store it at room temperature for up to a year.

Tom Lehmann/The Dough Doctor

975

[/ Re: Dunkin' Donuts Yeasted Donuts copycat](#)

No, not unless your frying fat temperature is above 365F/185C, if you drop the fat temperature too far the donut will become dry or the inside will not be cooked properly. Optimum frying time for a yeast raised donut with a scaling weight of around 1.5-ounces will be about 1-minute and 45-seconds.

Tom Lehmann/The Dough Doctor

976

[/ Re: Bromated flour](#)

All trumps is the "preferred" flour to use in New York as it gives the desired finished crust characteristics and the All Trumps flour used there also happens to be bleached and bromated. Does this mean that it HAS to be bleached and bromated? No, you can use just about any flour having 12 to 14.4% protein content to make a decent N.Y. style pizza. Stop worrying about the bromate, the residual "bromate" in the crust is measured in PPB (parts per billion). If you live in a metropolitan area you probably have more to fear from the air you're breathing. To answer your last question, little to none unless you are adamant about fermenting your dough for 5-days or more. Be sure to go back and read the discussion threads we just recently had on bromate in flour.

Tom Lehmann/The Dough Doctor

977

[/ Re: Thoughts on balling wet doughs](#)

Try keeping your hands wet during the rounding/balling process.

Tom Lehmann/The Dough Doctor

978

[/ Re: Shortest quality neapolitan dough](#)

As a general rule, you only need to have a tightly balled dough if you are targeting much more than about 48-hours fermentation time in ball form. Rather than concentrating on balling tight or loose, it's better to concentrate on being consistent.

Tom Lehmann/The Dough Doctor

979

[/ Re: Shortest quality neapolitan dough](#)

I agree, mix, (target finished dough temperature 75 to 80F), scale, ball, box and allow to ferment. The exact fermentation time as well as the yeast level will need to be adjusted to fit into your operating scheme in your mobile pizza operation.

Tom Lehmann/The Dough Doctor

[/ Re: Adding high ratio of shortening/oil in pan pizza dough](#)

Do NOT melt the shortening prior to addition to the dough.
Tom Lehmann/The Dough Doctor

61

[/ Re: How many times do you reuse your frying oil?](#)

A lot of the answer to that question lies in what is being fried. Take donuts for example, new frying fat makes for crappy donuts so we ALWAYS seed the new frying fat with a portion of the old fat. If you're frying things that put a lot of sugar, flour and seasonings into the fat you will need to filter the fat on a daily basis, but if you're frying things like French fries you can go several days between filtering the fat and because potatoes by themselves remove flavors from the fat you might be able to get away changing out the fat only once a week depending upon how much material you're putting through the fryer. In my opinion the worst thing to fry is tempura coated anything. Pieces of the coating are blown off in the fryer, and the coating is high in water content which can lead to hydrolytic rancidity, both of these combined means that you'll probably be cleaning out the fryer and filtering the fat daily while changing the fat on a much more regular basis that you would for any other product. It should go without saying that if you are frying fish and then want to fry donuts a change of the frying oil is in your near future. As mentioned by others, oxidative rancidity is always an issue with frying fats, this is why commercial frying fats contain anti oxidants and anti foaming agents.
Tom Lehmann/The Dough Doctor

62

[/ Re: very sticky dough](#)

Calzonemaker;

Different products exhibit differences in fermentation, when making pizzas there are a vast number of different flours of varying strength used to make the pizzas. If the pizza will be lightly loaded you can get away with a lot of over fermentation but if the pizza is to be loaded with a lot of toppings it may well collapse under the weight of those toppings if the dough is over fermented or fermented too much for the strength of the flour. Bread is all but intolerant of over fermentation because the dough is proofed to such a low density prior to baking and then it has to be handled when placing the bread into the oven, these conditions make the dough a prime candidate for collapse unless the flour is sufficiently strong or exhibits good tolerance to fermentation (a common characteristic of U.S. and Canadian wheats/flours but not always true for imported flours made from soft wheat varieties.

Tom Lehmann/The Dough Doctor

63

[/ Re: yeast - fresh, IDY, ADY revisited](#)

beeuu;

The question that begs to be asked is how did you add the ADY and IDY. you told us how you added the CY but not the ADY and IDY.

Tom Lehmann/The Dough Doctor

64

/ [Re: Need help proofing my Sicilians](#)

I'd go with upping the yeast a little to maybe 0.125%

Tom Lehmann/The Dough Doctor

65

/ [Re: turkey pizza with leftovers?](#)

I use left over turkey all the time, even tried it a time or two with stuffing. Use both just like any other added topping ingredient. For a cheese topping I am partial to using a blend of mozzarella and ricotta applied in dollops. I've even added the mashed potatoes too, just place them on the pizza in dollops like the ricotta. For this type of pizza my preference leans towards using a white sauce rather than a red sauce since it ties the pizza together better than a red sauce which just seems out of place.

Tom Lehmann/The Dough Doctor

66

/ [Re: Dough is ripping while stretching, help!](#)

Your starter might be too strong or your flour might not be strong enough to handle the starter strength under those conditions.

Hard to tell with limited data.

Tom Lehmann/The Dough Doctor

67

/ [Re: Caputo 00 thin crust dough recipe](#)

Flour: 100%

Salt: 2.5%

IDY: 0.375% (variable depending upon dough management procedure)

Water: 60%

Add water to mixing bowl, then add the salt, flour and IDY.

Mix at low speed for 2-minutes, then mix at medium speed just to form a smooth dough.

Target finished dough temperature 75 to 80F.

Immediately scale and ball.

Lightly oil dough balls and place into individual fermentation containers.

Place in fridge UNCOVERED until INTERNAL dough ball temperature reaches 50F. then loosely cover/lid the containers.

NOTE: THIS PART MAY CHANGE DEPENDING UPON WHICH "00" FLOUR YOU HAVE.

Allow dough balls to CF for 24 to 48-hours.

Remove from cooler and allow dough balls to warm to 50 to 60F INTERNAL dough ball temperature.

Open into skins for immediate use.

Note: There are MANY different ways to work with "00" flours, this is just one of them.

Tom Lehmann/The Dough Doctor

68

/ Re: Too stretchy dough

Use a stem aka dial type thermometer to measure the INTERNAL dough ball temperature after the CF period. When the internal dough ball temperature is in the 50 to 60F/10 to 15.5C range it is ready to open into a skin for immediate use. From what you have said I'm guessing that you are allowing the dough to get too warm before opening it into a skin.

Tom Lehmann/The Dough Doctor

69

/ Re: Most Important Things for Beginner's to Focus On

Peter is absolutely correct. Learn the basic and easy to make pizzas first using common, off the shelf ingredients. You will be able to hone your pizza making skills while building your confidence, then, using your new gained skills you will be able to venture out into other types of pizzas or upping the game by experimenting with different ingredients above all else, remember to change only one thing at a time when it's time to begin experimenting, go slow and easy and smell the pizzas along the way, the rewards are delicious! :drool:

Tom Lehmann/The Dough Doctor

70

/ Re: Rounder and divders

Walter;

What would we ever do without duct tape? :-D :-D

Tom Lehmann/The Dough Doctor

71

/ Re: How does dough ball size affect kneading?

I think I found our why your pizza slice was wet and soggy!!! :-D :-D :-D :-D :-D

Tom Lehmann/The Dough Doctor

72

/ Re: Pizza Dough Storage & Handling Questions

With American style pizzas using approximately 0.375% IDY (instant dry yeast),

with effective dough management and a room temperature in the 70 to 75F range we will typically allow the dough balls to set AT room temperature until they reach 50F/10C before we begin opening them into skins, once we begin opening the dough balls into skins they will be good for the next 2.5 to 3-hours. Any unused dough balls are not put back into the fridge as this creates an inconsistency for those dough balls on the following day (consistency is the name of the game), instead, we convert those dough balls into things like bread sticks and garlic knots which can be par-baked and used on the following day without any issues. Additionally, you can also use left over dough balls in your new dough but the amount that you add should not exceed 15% of the new dough weight.

Tom Lehmann/The Dough Doctor

73

/ [Re: How does dough ball size affect kneading?](#)

In the Philadelphia area there was a pizzeria where the owner mixed all of his dough by hand. His doughs were based on a 50# bag of flour, however he did not knead the dough in the truest sense of the word, instead he just combined the ingredients by hand and let biochemical gluten development do all the work for him. If when you say "knead" you mean it in the literal sense a dough sized on 20-pounds of flour weight will probably all you will want to wrestle with and even then you will be on the fast track to achieving your secondary goal of developing arms like the village blacksmith. Anything smaller just gets easier.

Tom Lehmann/The Dough Doctor

74

/ [Re: longer RT sourdough fermentation](#)

Yael;

I used to say that knowledge is like a fine wine, if it's not shared it's just wasted.

Tom Lehmann/The Dough Doctor

75

/ [Re: Neapolitan crust isn't puffing up](#)

We really need to know more about your dough formula and how you're managing the dough.

Tom Lehmann/The Dough Doctor

76

/ [Re: How does dough ball size affect kneading?](#)

Before we go off on a tangent, you're talking about total dough size/weight....right?

Tom Lehmann/The Dough Doctor

77

/ [Re: longer RT sourdough fermentation](#)

Without knowing the strength of your sourdough starter it's impossible to answer your question. The best advice I can offer you is to make three doughs at 4%, 8% and 12% starter and see which one performs the best for you under YOUR specific conditions.

Tom Lehmann/The Dough Doctor

78

[/ Re: Question about cutting the pizza](#)

Yael;

I've never been so fussy that I didn't sneak a piece of the overturned pizza after evaluating it, like we used to say in the lab, it's all in the name of research! :-D :-D

Tom Lehmann/The Dough Doctor

79

[/ Re: dried out crust after parbaking](#)

Par-baked crusts are always going to give you a finished pizza with a lower moisture content in the crust. If you want to avoid that you will need to par-bake the crusts with some steam in the oven or add a gum to help retain moisture in the baked crust. We recently had some discussion on this very topic which you might want to check out.

Tom Lehmann/The Dough Doctor

80

[/ Re: dried out crust after parbaking](#)

Par-baked crust, or anything else for that matter, is actually fully baked, it has to be in order to avoid collapse during cooling. If you are getting too much color during the par-baking phase you will need to REDUCE the baking temperature and possibly extend the baking time. The idea in par-baking is to achieve an internal dough temperature of 190F. Once you reach that IT the dough is fully baked and should have minimal crust color development.

Tom Lehmann/The Dough Doctor

981

[/ Re: Adding high ratio of shortening/oil in pan pizza dough](#)

With pan style pizzas using shortening is preferred over oil, the best way to add it is to have it at a temperature between 70 and 80F and just add it right on top of the flour when you begin the dough mixing process. If the amount of shortening is 10% or more it is advisable to withhold the shortening until after the dough has come together in the mixing bowl, then add the shortening and mix just enough to thoroughly incorporate it.

Tom Lehmann/The Dough Doctor

982

[/ Re: Dough Enhancer](#)

Dough enhancer is a very broad term, I guess we might call anything added to the dough that enhances it in some way a "dough enhancer" these might include:
dead yeast (glutathione): Dough Relaxer
diastatic or non-diastatic malt: Crust color/flavor/food for the yeast
vital wheat gluten: Dtrength
calcium sulfate: Reduces stickiness
from a commercial stand point enzymatic oxidizers are also used: Strength
some might even include ascorbic acid: Strength
vinegar might be referred to as a dough enhancer too: Accelerates fermentation

It all depends upon that you want the dough enhancer to do, then you select the best product for that function.

Tom Lehmann/The Dough Doctor

983

[/ Re: Baking soda and Pretzel](#)

The traditional way of making bagels is to mix, form, cold proof on bagel boards overnight, pull from the cooler and allow to rest at room temperature for 20 to 30-minutes, transfer to the boiling kettle and stir, until the bagels all float, then transfer to a rinse station where the bagels are flushed with cold water and immediately topped if desired and placed onto wet baking boards (redwood) and baked for a couple of minutes until a firm skin is formed on the bagel, they are then turned off of the boards (inverted) onto the oven deck to continue baking.

Tom Lehmann/The Dough Doctor

984

[/ Re: Baking soda and Pretzel](#)

Bagels are either steamed or kettled (boiled) but not actually boiled as the water temperature is only 200F, and just plain water is used. After kettling they are allowed to dry for a minute or so and then baked with a turn about mid way through the baking process, pretzels are just run through the alkali solution (2% lye) and then salted and baked. For the crispy pretzels they then go through a kiln drying process which is a pass under the oven to allow for a more controlled drying process (about 20-minutes), they are then taken directly to packaging.

Steamed bagels are made using a rotating rack oven, steam is introduced into the oven for the first 15 to 20-seconds, the door is then opened to evacuate the steam and the bagels are baked for about 18 to 20-minutes at 450F. The difference is that kettled or traditional bagels as they are known are tough and chewy while steamed bagels are much more tender eating, for this reason the steamed bagels are much more popular for use when making bagel sandwiches.

Tom Lehmann/The Dough Doctor

985

[/ Re: Hidden dangers of old starters?](#)

Travis;

Just something to watch for. Pineapples contain a very powerful reducing enzyme (Bromelain) which is very similar to papain. These enzymes are effective at hydrolizing protein and very low levels. I don't know if the pH of the starter will inactivate the bromelain or not but it is something to be aware of. If you use the starter and find that the dough becomes unusually soft and extensible this might be the cause. let us know how it works for you.

Tom Lehmann/The Dough Doctor

986

[/ Re: My pizza gets soggy not crunchy after cools down](#)

Tim;

I wrote about this in one of my articles some time ago. Here are the things to do to improve the quality of a DELCO pizza;

- 1) Lightly oil the skin prior to application of the sauce.
- 2) Use sauce sparingly.
- 3) Use vegetable toppings sparingly.
- 4) Bake pizzas as LONG as possible to both dry out the pizza and develop the thickest crust as possible.
- 5) Immediately after baking place on rack to steam-off for a minute before boxing.
- 6) Use some type of sheet in the box to hold pizza off of the bottom of the box.
- 7) Make sure box has steam vents and that the vents are opened.
- 8) Encourage customers to reheat/re-crisp the pizza when they get it home.
- 9) When it comes to oven selection, air impingement ovens are by far the best choice if DELCO pizzas are in your future. The focused airflow of these ovens is a decided benefit to achieving the best bake and driest pizza possible for this application.

Tom Lehmann/The Dough Doctor

987

[/ Re: If I wanted to just buy a 1/2" pizza steel, where would I do that for the least](#)

Also check out any scrap yard that take metal in your area, we have one near us and I've found some great buys there. For a few extra bucks they'll even cut it.

Tom Lehmann/The Dough Doctor

988

[/ Re: Chicago tavern style needs improvement](#)

Five to eight percent shortening will be about the limit. As for why the dough appears to ferment faster with fat the answer is, it doesn't but the fat both lubricates the dough for easier expansion and it also coats the cell wall for improved gas retention so the dough retains more gas, making it appear larger.

Tom Lehmann/The Dough Doctor

989

[/ Re: My pizza gets soggy not crunchy after cools down](#)

What you have described is pretty common for delivery/take away pizza. Delivery pizzas are best baked as long as possible and with a ripple sheet or Pizza Savor mat in the box to hold the pizza up off of the bottom of the box, we've discussed this here a number of time in the past if you care to search the archives. Your best bet might be to educate your customers to reheat the pizza once they get it home, this will refreshen as well as re-crisp the pizza for maximum enjoyment.

Tom Lehmann/The Dough Doctor

990

/ [**Re: What is the difference between Autolysis and hydrolysis?**](#)

Do you mean autolyse and hydration? Hydrolysis is a totally different thing not related to pizza making.

If so, you can mix water and flour together to allow the flour to better or more fully hydrate prior to the actual dough mixing process. This is beneficial when making dough with whole-wheat flour or making a multi-grain dough. In this case the flour and water are typically allowed to set for about an hour. An autolyse, on the other hand, is similar but it is allowed to set for anything from one to several hours (more typically several hours) which allows the flour to fully hydrate and it also allows for enzymes in the flour and yeast to begin working making for an easier to handle dough and some will say a better flavored finished product. The autolyse method is especially beneficial when making dough with a high (70%+) absorption.

Tom Lehmann/The Dough Doctor

991

/ [**Re: Blistering when balling**](#)

Your ADY is a bit on the high side for what you are wanting to do, I'd suggest dropping it back to 0.3%. Additionally, you don't say what the finished dough temperature is but from what you are describing it sounds like it is possibly too high (hot), try adjusting the water temperature to give you a finished dough temperature of 70F/21.1C.

Tom Lehmann/The Dough Doctor

992

/ [**Re: Blistering when balling**](#)

Pictures? It sounds like the dough might have quite a bit of fermentation on it at the time of scaling and balling, a picture would help.

Tom Lehmann/The Dough Doctor

993

/ [**Re: Storing dough in fridge.. How long?**](#)

One more thing, the strength of your flour will also play an important part in determining if YOUR dough will still be good several days down the road.

Tom Lehmann/The Dough Doctor

994

/ [Re: Storing dough in fridge.. How long?](#)

A lot of the answer to your question pivots around the finished dough temperature, the amount of yeast used in the dough formula, and overall how well the dough is being managed. Every dough is different in this respect, the best advice I can give you is to save one or two of your dough balls for testing with a few more days of CF time. That's the only way you will know for sure.

Tom Lehmann/The Dough Doctor

995

/ [Re: Baking soda and Pretzel](#)

The next time you make them open them up a bit more to get a better shape, then try dipping the tops in sesame seeds right after the caustic solution, makes for a great flavor!

Tom Lehmann/The Dough Doctor

996

/ [Re: 20" \(50cm Pies\) im up to 24oz \(700g\) dough balls to get up to size](#)

We typically use 10-ounces of dough to make a 12-inch N.Y. style pizza, this calculates to a dough loading of 2.4778-grams per square inch. A 20-inch pizza has 314-square inches so $314 \times 2.4778 = 778$ -grams. So based on this a good dough weight for your 20-inch N.Y. style pizza would be 778-grams.

Tom Lehmann/The Dough Doctor

997

/ [Re: Yeast storage and longevity](#)

Vacuum sealing it the key to getting long term storage from an opened package of IDY. New packages are either gas flushed or vacuum sealed.

Tom Lehmann/the Dough Doctor

998

/ [Re: Baking soda and Pretzel](#)

Norma;

I've heard of it but never used it.

Tom Lehmann/The Dough Doctor

999

/ [Re: Yeast storage and longevity](#)

Let me see, August 11, 2018 to August 11, 2019 = 1-year and August 11, 2019 to August 11, 2020 = 2-years, yep, just as I guessed, it's still good. Your observation is

correct in that as the IDY ages it loses its potency and you need to continue adding more and more of it. From a commercial application point of view this is totally unacceptable but for home use it isn't necessarily a game changer. Once you open the package all bets are off the table when it comes to shelf life as there are just sooooo many contingencies that might impact the shelf life.

When I was running the bake lab at AIB we made it a habit to NEVER hold an opened package of IDY for more than 5-days, the reason for this is because we saw a difference in performance already at the 7-day mark. I believe most manufacturers will suggest holding an opened package no more than 14-days, but this again is for commercial application, not for home application. There are huge differences in performance expectations between experimental/research, commercial and home applications.

Tom Lehmann/The Dough Doctor

1000

[/ Re: Baking soda and Pretzel](#)

A number of years ago one of the major pretzel manufacturers got the lye solution too concentrated which resulted in residual lye on the surface of the pretzels and caused a recall of the product as consumers were complaining of a burning sensation on their lips after eating the pretzels. Every once in a while you will experience this same burning sensation when eating perfectly "normal" pretzels, this is due to the water in the lye solution evaporating to cause a slightly too concentrated solution having the same results but to a much lesser degree. The most concentrated lye solution purchased by bakeries is 20%, in the dry form it is much too dangerous due to its propensity to dust into the air while being transferred/scaled.

Tom Lehmann/The Dough Doctor

1001

[/ Re: Diastatic malt vs sugar](#)

It only takes 0.25% of a 20L malt powder to replicate the level of malting flour receives at the flour mill, anything over that will be converting a significant amount of starch to maltose sugar which is why you found it necessary to use less malt powder than sugar, the downside to it though is the inherent stickiness of the dough due to the formation of excess maltose.

Tom Lehmann/The Dough Doctor

1002

[/ Re: Chicago tavern style needs improvement](#)

Please define "higher absorption" in bakers percent.

Tom Lehmann/The Dough Doctor

1003

[/ Re: Diastatic malt vs sugar](#)

Brent;
That's exactly the same as for honey. ^^^
Tom Lehmann/The Dough Doctor

1004

/ [Re: Yeast storage and longevity](#)

The manufacturers used to have a 2-year shelf-life on it at 70F storage temperature but a number of years ago they rolled it back to 1-year, I think the reason being that it was too difficult for merchants and users to keep track of the age over such a long storage period. Unopened, you should be good for 2-years at 70F.
Tom Lehmann/The Dough Doctor

1005

/ [Re: Yeast storage and longevity](#)

We have addressed this question before, when storing either ADY or IDY in the refrigerator or in the freezer it is HIGHLY recommended that the yeast be removed from the fridge or freezer and allowed to come to room temperature BEFORE opening the container. Moisture will lead to early loss of the yeast so opening the container ONLY after it has reached room temperature will reduce the condensation issue thus reducing the moisture accumulation on the yeast and result in better long term storage of the yeast. By the way, it is NOT recommended to remove the yeast from the original packaging if using only a portion of the yeast, instead, fold the packaging down tightly to the yeast, secure with tape or rubber band and refrigerate or freeze. Air will also cause the yeast to deteriorate and this eliminates much of the air in the package.
Tom Lehmann/The Dough Doctor

1006

/ [Re: Cinnamon rolls](#)

Rather than using "melted" butter, just use "softened" butter, putting melted butter in the fridge is counter productive. As for achieving the targeted finished dough temperature just use colder water, some use water that has been stored in the fridge overnight while others find that they need to use a little crushed ice in the water too. I don't know how else to explain the appearance of the dough when it has been properly mixed except to say that it is just mixed until the dough has a smooth appearance which is a very good visual indicator that the dough has been sufficiently mixed when you are going to use 18 to 24-hours of cold fermentation. It is impossible for me to speculate what speed to mix the dough at using your specific mixer except to say that you should use the highest speed possible without fear of over working your mixer.
Tom Lehmann/the Dough Doctor

1007

/ [Re: Dough sticking to dough pans](#)

Try using shortening rather than oil but be aware that the dough will still cling to the shortening, most pizzerias use the plastic dough boxes which don't pose this problem.

Tom Lehmann/The Dough Doctor

1008

[/ Re: Diastatic malt vs sugar](#)

I'm assuming your malt powder was non-diastatic?

When using honey remember that the darker the color the more robust the flavor will be. In the baking industry we use honey that is as dark as black coffee.

Tom Lehmann/The Dough Doctor

1009

[/ Re: Baking soda and Pretzel](#)

Yael;

When making pretzels you don't need to use an egg wash for color. The alkaline wash will give you both color and shine, the stronger the alkaline wash the greater the color. We typically used a 2% sodium hydroxide solution (which is what is used commercially). One might say that the only real difference between a bagel and a pretzel is alkalinity of the water in which the bagel is "kettled" in. When pretzel crusts were all the rage we made them by brushing the edge of the skin with the 2% sodium hydroxide solution and then applying a light application of coarse pretzel salt just prior to baking. We made the pretzel buns by the exact same manner.

Tom Lehmann/The Dough Doctor

1010

[/ Re: Serving up pan pizza - soggy crust woes.](#)

Gotta admit, that's a good lookin' pizza! :drool: :drool: :drool:

Tom Lehmann/The Dough Doctor

1011

[/ Re: Commercial oven for garage, gas vs electric?](#)

Even with an electric oven it is highly recommended that you have some kind of ventilation in your garage or eventually you're going to find everything covered with a sticky layer of goo. You might be surprised to find out what goes up the stack in an electric oven.

Tom Lehmann/The Dough Doctor

1012

[/ Re: Neapolitan pizza goes Tough and rubbery after 15 minutes?](#)

Yep, it's the "nature of the beast" to get soft VERY soon after exiting the oven. If

you are baking the pizzas at home and also happen to be the Chief Cook, Bottle Washer, CEO, CFO, and President of pizza making endeavors you can do whatever you want and deviate from the classical Neo type pizza to something that better fits YOUR likes (that's actually the best part of making pizzas at home), so by simply reducing the oven temperature and baking longer you can introduce a more crispy nature to the finished crust and the crust will retain the crisp for a longer period of time, this is the experimentation that we all find so interesting. The more you experiment the more you understand about pizza and the more experimenting you will want to do (it's an endless cycle) but you will find few here who are complaining about it.

Tom Lehmann/The Dough Doctor

1013

/ [Re: Flat Pizza balls](#)

Saying that you use Caputo "00" flour really doesn't help very much as there are different types of Caputo "00" flour, perhaps you are using one which isn't designed to tolerate more than 12-hours of fermentation? It would be good to know the actual finished (mixed) dough temperature as well as exact ingredient weights or amounts in bakers percent. What kind of mixer are you using? When you bulk ferment, what kind of dough weight are we talking about?

Tom Lehmann/The Dough Doctor

1014

/ [Re: Dough sticking to dough pans](#)

It's my experience that this is a pretty common issue with aluminum fermentation pans. I used them when I was at AIB and we always had to scrape the dough off of the pan. Plastic, in my opinion, is a much better alternative.

Tom Lehmann/The Dough Doctor

1015

/ [Re: Diastatic malt vs sugar](#)

How about the time I set a series of experimental doughs and then went to lunch with aspirations of conducting the baking experiments that afternoon after lunch, upon my return I got everything ready and pulled the first dough only to find it looking much like it did in the morning, OMG! Are they all like this? Yep, everyone. Forgot to add the yeast.

Almost as bad as the time when I set sponges in the morning and went over to the lake (Michigan) as AIB was located only 200-yards from Ohio Street Beach, I was watching the kids playing on the shore and my eyes got heavy, very heavy, when I woke up it was quiet, the kids were gone and it was almost 4:00 p.m. Oops! Those sponges, well lets just say that they were very well fermented and yes, there was a mess to be cleaned up as they all over flowed their containers.

Tom Lehmann/The Dough Doctor

1016

/ Re: Dunkin' Donuts Yeasted Donuts copycat

If the donuts were wet coming out of the proofer the relative humidity was too high in the proofer, remember that you only want a R.H. in the 75 to 80% range (favoring 75%) at this humidity the proofed donuts will have a dry but soft outer skin on them.

Tom Lehmann/The Dough Doctor

1017

/ Re: pizza dough for ny style piza

Traditionally, All Trumps flour is used but the truth is that just about any good bread type flour will work well. Here is a good starting dough formula:

Flour;100%

Salt: 1.75%

Olive oil: 2%

IDY: 0.375%

Water: 63% (70F)

My Dough Management Procedure is presently posted here in an active thread, I suggest using the plastic bag procedure with a cold fermentation period of 48-hours.

Tom Lehmann/The Dough Doctor

1018

/ Re: Chicago tavern style needs improvement

QJ;

Sometimes it's also the BTU of the burner or the way the flame is adjusted that can result in this issue.

Tom Lehmann/The Dough Doctor

1019

/ Re: Chicago tavern style needs improvement

djenks;

I'm not sure I fully understand your question, but I do suggest increasing the salt and shoot for the targeted finished dough temperature. Then go straight from the mixer to the bench for scaling and balling, then bag and into the cooler.

Here is another option for a truly outstanding Chicago style crust.

Put water in mixing bowl (70F).

Suspend the IDY in a small amount of 95F water then add to the water in the bowl, no need to activate, just hydrate.

Add salt and sugar IMMEDIATELY followed by the flour.

Mix at low speed for approximately 1.5-minutes (yes, you read that right). The "dough will look very shaggy" with lots of dry flour present.

The dough is properly mixed when you can grab a hand full and press it together to form a crumbly ball (it will NOT be cohesive).

Scale to desired weight, form into "puck" shape as you would if making a pie crust.

Place into individual plastic bags as you presently do.
Cold ferment for 24 to 48-hours.
Remove from cooler, allow to warm to 50F (internal ball/puck temperature).
Turn out of the bag (the dough will be much more cohesive now). Do not re-ball, just flatten and begin forming.
Form into a skin using a dough sheeter or rolling/pastry pin.
Dress to the order and bake.
NOTE: This dough has no added oil.
I discussed this procedure quite some time ago here if you want to research it.
Tom Lehmann/The Dough Doctor

1020

/ [Re: "San Francisco" style cornmeal attempt](#)

If you are looking for more of a "corn" flavor in the finished crust try replacing 50 to 100% of the corn meal with Masa Flour/Maseca.
Tom Lehmann/The Dough Doctor

1021

/ [Re: Chicago tavern style needs improvement](#)

One of the very first things I'd do to address the flavor issue is to increase the salt level to 2%, then at the same time change the dough mixing procedure by putting the water in the mixing bowl first, then the salt and sugar (no need to stir) followed by the flour and IDY. Mix at low speed just until you don't see any dry flour in the bottom of the bowl, then add the oil gradually, mix 1 additional minute after all of the oil has been added, then go to the next highest speed and mix for 8 to 10-minutes. You don't say anything about the finished dough temperature, this is a critical aspect of effective dough management. I'd suggest targeting 75 to 80F for 48-hours CF.
Tom Lehmann/The Dough Doctor

1022

/ [Re: Diastatic malt vs sugar](#)

If you didn't put any yeast in the dough you might be disappointed. :-D
Tom Lehmann/The Dough Doctor

1023

/ [Re: Best Practices for Pizza by the Slice: Food Safety & Taste](#)

The key here is to make sure it gets reheated to a temperature above 160F which isn't always the case on the top of the slice. This can be a pretty good case for a small air impingement or IR oven for reheating those slices especially if you are having a hard time dealing with a FSI.
Tom Lehmann/The Dough Doctor

1024

[/ Re: Diastatic malt vs sugar](#)

We did all of our research on a stone deck in a combination wood and gas fired commercial pizza oven that was a full 6-inches thick. I can see where different deck materials as well as different deck thickness would affect this. Good point.
Tom Lehmann/The Dough Doctor

1025

[/ Re: New member and malt powder question](#)

Non diastatic malt is nothing more than "malt sugar" while diastatic malt is enzyme active alpha amylase primarily but other enzymes are also present which hydrolyze wheat starch into maltose which is then further hydrolyzed into glucose by the enzyme (maltase) in the yeast which is then metabolized by the yeast as a nutrient to support fermentation/yeast activity. Too much malt and a wood fired oven baking at very high temperatures is generally not considered a match made in heaven as the crusts have more than a slight tendency to burn. If baking at less than 650 to 700F this may not be as much of a problem.

A typical use level for 20L dry malt powder is 0.25% in an un-malted flour.

Tom Lehmann/The Dough Doctor

1026

[/ Re: On stretching and folding wetter doughs](#)

I also like to do it out of the bowl using a scraper in one hand to help lift the dough and stretch it for folding.

Tom Lehmann/The Dough Doctor

1027

[/ Re: Diastatic malt vs sugar](#)

If baking on the deck, about 650F, even at that the crust might develop color too quickly for some pizzas.

Tom Lehmann/The Dough Doctor

1028

[/ Re: Serving up pan pizza - soggy crust woes.](#)

Thickness Factor/Dough Loading = dough weight divided by pan surface area in square inches.

$15.5 \times 12 = 186$

$22\text{-ounces divided by } 186 = 0.1182795$

Dough Loading Factor: 0.1182795 or to put it another way, you have 0.1182795-ounces of dough per square inch of pan surface area.

Tom Lehmann/The Dough Doctor

1029

/ Re: Dunkin' Donuts Yeasted Donuts copycat

And don't forget to put a wet towel in the oven too, otherwise just heating the air will drive the R.H. down allowing a crust to form on the dough (something you don't want).

It is very easy to make your own donut proofer too, all you need is a box, a light bulb and a wet towel, use a pair of stem type thermometers for measuring R.H. with a couple of ventilation holes cut into the box to control temperature and humidity you're good to go.

Tom Lehmann/The Dough Doctor

1030

/ Re: Six Inch Individual Pizzas

Sure, here's how it's done.

A good dough weight for a 12-inch pizza is 10-ounces. The surface area of a 12-inch circle is $\pi \times R^2$ (you might remember that from high school math), so $3.14 \times 36 = 113.04$ -square inches. By dividing dough ball weight by surface area we get the dough loading per square inch (10-ounces divided by 113.04 = 0.08846-ounces per square inch).

A 6-inch pizza has ($3.14 \times 9 = 28.26$ -square inches) Now all we need to do is to multiply the surface area of the 6-inch pizza by the dough loading (0.08846) to find the weight of the dough ball needed to make our 6-inch pizza ($28.26 \times 0.08846 = 2.4998$ -ounces) We can round that off to 2.5-ounces.

Each dough ball should weigh 2.5-ounces to make a typical 6-inch thin crust pizza skin.

Can the dough ball have a different weight? Sure it can, it's YOUR pizza so you can make it whatever you want but I think 2.5-ounces is a reasonable starting point that will make a finished crust about the thickness of a Domino's thin crust.

Tom Lehmann/The Dough Doctor

1031

/ Re: Dunkin' Donuts Yeasted Donuts copycat

That would be my recommendation. Yeast raised donuts are final proofed at 85 (29.4C) to not more than 90F (32.2C) at between 70 and 75% relative humidity for 40 to 60-minutes. Total frying time will be just under 2-minutes total for both sides.

Tom Lehmann/The Dough Doctor

1032

/ Re: Best Practices for Pizza by the Slice: Food Safety & Taste

Most will fully bake the pizzas, hold in a temperature/humidity controlled cabinet and reheat for the customer. I like to add a little additional cheese for flavor and appearance, but that's just me. In the end you will want to develop a plan and then pass it by your food safety inspector the his/her blessings, after all, in the end they will have the final say in the matter.

Tom Lehmann/The Dough Doctor

1033

[/ Re: Diastatic malt vs sugar](#)

When dealing with un-malted flours you will typically see a slightly greater tendency towards developing more crust color with a higher protein flour than a lower protein flour due to the fact that protein participates in the browning reaction.

Tom Lehmann/The Dough Doctor

1034

[/ Re: Dunkin' Donuts Yeasted Donuts copycat](#)

That is a VERY LOW temperature (130C/266F) for frying donuts at. The lowest I've ever seen used was 340F/171C.

Tom Lehmann/The Dough Doctor

1035

[/ Re: How long can proofed dough sit at room temperature.](#)

In a scenario like that the dough will continue to ferment but because it's warmer and continuing warm (due to heat of metabolism) the fermentation rate will also continue to increase. The result will soon be a dough that is difficult to shape as it becomes overly extensible and in a severe case it will become very weak making opening it into a skin without having it tear or develop holes all but impossible. In most cases dough balls that have been allowed to ferment too long can be salvaged by re-balling them BUT remember that it may take several hours for the dough to relax sufficient for it to be opened again. A much better option (one that is commercially practiced) is to go ahead and open the dough balls into skins before they reach this point, place the opened skins onto pizza screens and store in the cooler/fridge (covered to prevent drying) until 20 to 30-minutes prior to time of use. To use, remove from the cooler (keeping covered) and allow to warm AT room temperature for 20 to 30-minutes, remove from the screen and touch-up the dough skin, then dress and bake to the order. A lot of pizzerias do this to enable them to keep up with the rush periods when they tend to fall behind on opening skins.

Tom Lehmann/The Dough Doctor

1036

[/ Re: Dunkin' Donuts Yeasted Donuts copycat](#)

Using flour with too low of a protein content can result in an overly tender finished donut, deleting the whole egg will reduce the richness of the finished donut. 0.8% IDY should work OK.

Remember that powdered sugar is made from dextrose, not sucrose which is why powdered sugar exhibits a cooling effect in the mouth and the flavor isn't overly sweet.

Tom Lehmann/The Dough Doctor

1037

[/ Re: Serving up pan pizza - soggy crust woes.](#)

You might try this for your mixing procedure, put water in mixing bowl first (65F), then add the flour and all of the dry ingredients and mix at low speed just until you don't see any dry flour in the bowl, add the oil and mix at low speed for 1-minute, change to the highest speed your mixer will handle the dough at and mix 8 to 10-minutes, or until the dough just begins to look smooth. then scale/ball and cold ferment for 24 to 48-hours, after CF allow the dough to warm to 55F at room temperature (this is the INTERNAL dough ball temperature), it will take about 90 to 120-minutes. Then proceed with your usual process. Keep us posted.

Tom Lehmann/The Dough Doctor

1038

[/ Re: Serving up pan pizza - soggy crust woes.](#)

Be sure to remove the pizza from the pan IMMEDIATELY after you remove the pizza from the oven and place it onto a wire cooling rack for a minute or so to allow the toppings to set-up, then transfer to a cutting surface and cut into desired slices, serve immediately.

Additionally, can you share your dough formula as well as the dough management procedure and baking procedure with us? Perhaps there is something there that we can help you with to achieve a crispier crust.

Tom Lehmann/The Dough Doctor

1039

[/ Re: My First Car was](#)

The Thunderbolt was a "plain Jane" Ford Fairlane with a 4-speed and just a single bucket seat, no passenger seat or back seat, battery was located in trunk over right rear wheel (Ford still didn't have a decent locking rear end). I took off all of the 427 badges and replaced them with 289 badges. I ended up putting in a second bucket seat and replaced the driver's harness with a lap belt and then add a rear seat.

Spent a lot of time under the hood adjusting valve lash. Spark plugs were a bear to replace so I added a Delta Electronics C.D. ignition system, aside from that it was "stock". Can't tell you how many 289 Mustangs and 289 H.P. Fairlanes got "dusted" by it, even did the number on some "goats" (Pontiac 389 GTO's), even did in a 396 Nova SS and my buddy's 383 Plymouth. The most expensive part of that car was the cost of tires! Ran Blue Streaks on the rear for traction in the summer and usually went through at least two sets every summer. Tire rotation on the rear was done every two weeks.

The beast made the Shelby Cobra look very refined!

1040

[/ Re: My First Car was](#)

Paulrevere73;

Here in Kansas we call that camouflage. :-D

Tom Lehmann/The Dough Doctor

1041

/ [Re: Mimicing whole-sale cracker thin-crust dough](#)

You're not going from 500 - 550F to room temperature, you are only going from the suggested platen and head temperatures of around 250 to 300F and pressing for +/- 5-seconds.

RS-190 aka dead yeast is available from Red Star Yeast/Lesaffre. Contact Sandi Cazalet at <s.cazalet@lesaffre.com> / <www.lesaffreyeast.com>.

Tom Lehmann/The Dough Doctor

1042

/ [Re: My First Car was](#)

A 1954 flathead V-8, then a 1956 Ford Crown Victoria V-8, then a 1960 Ford Thunderbird, Then a 1964 Ford Sprint with the 289 V-8 crate engine option, after that it was a 1966 Ford Thunderbolt 427, then a 1969 Shelby Cobra, after that I grew in a different direction and it was a 1972 International Scout II, then a 1979 Jeep Renegade, then a 2001 Dodge 2500 Pickup (which I still have) and presently also have a 2014 Jeep Patriot. In addition, in 2005 I bought a Dodge Dakota as my daily driver (a real piece of CrXX) plagued by engine, electrical, body rust and mechanical issues its entire life, three years ago it gave up its life to save mine when I hit a patch of unseen black ice on the Interstate, it was replaced by the Patriot which has served me VERY WELL. I can also tell you about all of the cars my wife has had too including the 1967 VW Beetle that I retrofitted with a 20-gallon gas tank up front (it got an honest 40 m.p.g.) giving it tremendous range during the gasoline shortage years.

Cars are just one of those things us guys don't ever forget.

Tom Lehmann/The Dough Doctor

1043

/ [Re: Mimicing whole-sale cracker thin-crust dough](#)

That's the key here, whatever is used to press form the skins needs to be able to maintain that temperature for the duration of the dwell time.

It might be as easy as two thick steel plates placed into the oven to pre-heat and then placing the partially opened skin onto one of the plats (don't forget to oil it first) and immediately placing the second (oiled) plate on the skin and pressing down on it for a count of 5 or more seconds, then removing the plate and peeling the formed skin off of the bottom plate. I've personally never ventured into this territory as I've always had access to a multitude of different hot and cold presses to work with. The first thing to do is to study the different hot presses available (AM-Manufacturing) and I think Dough-Pro also has one with both a heated head and platten, though I may be wrong?

In my mind this is what I see, two steel plates of desired diameter, bottom plate is 1/2-inch thick and top plate is 3/8-inch thick. Top plate has two sturdy handles welded onto it to allow it to be evenly pressed with full upper body weight down onto the bottom plate (with the dough trapped between then), after the dwell time the top plate is lifted off of the dough and the skin is manually lifted from the bottom plate. Will it work? Only one way to find out.

Tom Lehmann/The Dough Doctor

1044

[/ Re: Mimicing whole-sale cracker thin-crust dough](#)

When the crusts are commercially made on a wholesale basis the entire skin is subjected to the heat of the hot press (about 300F bottom and 250F top). The dough will need to be very soft and extensible, remember that it has to go from a ball to a fully formed skin in something between 1 and 2-seconds. Better than your cast iron pan approach might be to try a couple of Pyrex pie plates, using a rolling pin, open the dough ball to about the diameter of the bottom of the pie plate, then place the top plate on the dough and carefully press the dough between the two how pie plates, leave it set for a minute or so (commercially the dwell time is only about 5-seconds) but you're not holding it under 800 p.s.i. pressure under heat so you need to work outside of the box, when the dough has been pressed between the two plates (dwell time) long enough it will release from the plates without too much difficulty and have a slightly glossy appearance, then it goes directly to the oven for par-baking.

I think you might be plowing a virgin field so please keep us posted on your progress.

Tom Lehmann/The Dough Doctor

1045

[/ Re: Mimicing whole-sale cracker thin-crust dough](#)

TNT Crusts makes their own hot presses but they are copied after the AM Manufacturing commercial hot presses, if you want to see how the crusts are formed just Google (Am Manufacturing dough presses), there are a number of links to look at but one has a video that you might be interested in seeing. I won't go into much detail but these dough receive almost no fermentation and they do use a reducing agent (RS-190) aka dead yeast to facilitate pressing, after pressing the shins are par-baked to set the structure, it is then important to allow the crusts to age for at least 24-hours before using.

The chemical leavening (SALP and SODA) are in the form of a fat encapsulated chemical leavening system which we have previously discussed here and I've written an article or two on it also. The commercial name for this product is "Wrise", manufactured by Wright Enrichment Company.

Tom Lehmann/The Dough Doctor

1046

[/ Re: Problem of yeast donut - many bubbles](#)

You want the frying fat at 365F and the donuts will look better after the frying fat has some age on it. New/fresh frying fat doesn't do much for the appearance of the donuts. This is why those in the business of making donuts always seed their new frying fat with 15% of the old fat.

Tom Lehmann/The Dough Doctor

1047

/ Re: Complications with dough management

There are some good charts here that will allow you to predict the amount of yeast needed for specific room temperature fermentation, if you cannot control the room temperature your only other option, in this case, is to adjust the yeast level based on the room temperature. But be aware that there are short comings to this too in that a reduced yeast level can affect the oven spring, especially if your pizzas tend to be heavily loaded.

Tom Lehmann/The Dough Doctor

1048

/ Re: Large Pizza Party - prebaking pies?

Try par-baking with 1/2 of the sauce, then remove from oven and place on screens in a wire tree rack to cool. Does not need refrigeration. At the event all you need to do is to apply the remainder of the sauce and dress to the order, you can do that faster then the pizzas will bake and you will get the freshest pizza. Reheating a par-baked pizza is OK at best.

Tom Lehmann/The Dough Doctor

1049

/ Re: Starter with ADY trouble

Your salt level is low too at just 1.368%. A better salt level would be something in the 2 to 2.5% range. Since salt helps to control the fermentation rate as well as strengthen the dough this would be a step in the right direction too.

Tom Lehmann/The Dough Doctor

1050

/ Re: Diastatic malt vs sugar

In loaf bread bleached flour produces a brighter, whiter crumb color, but in pizza the crumb structure doesn't lend itself to seeing this since it is so thin and more open/porous as well as most of the time being smeared with sauce and/or toppings due to cutting. So for all practical purposes it can be said that bleaching has no impact on pizza dough or the finished crust.

Tom Lehmann/The Dough Doctor

1051

/ Re: Opinions regarding cornicione of the pizza

That's the best part of making your own pizzas at home, you can make them the way YOU like them, and remember, if YOU don't like it you know who to blame. :-D

Tom Lehmann/The Dough Doctor

1052

/ Re: Percentages

Here is a working example:

Flour weight: 800-grams

Ingredient percent: 0.375%

The math using your calculator: 800×0.375 (press the "%" key and read the ingredient weight in the display (3-grams) NOTE: Ingredient weight will ALWAYS be in the same weight units (pounds, grams, kilograms, etc.) that the flour is shown in.

To find the total dough weight:

Find the sum of all of the ingredient percentages, then divide by 100. Multiply the flour weight by this number.

Example: Flour: 100% (800-grams), Salt: 2%, IDY: 0.375%, Water 60%, Oil 2%

The sum is: 164.375% divided by 100 = 1.64375

Multiple flour weight by 1.64375. $800 \times 1.64375 = 1315\text{-grams}/1.315\text{-Kg}$.

If you want to put a dough formula based on weight measures into bakers percent. Flour is ALWAYS 100%.

Divide the weight of each ingredient by the weight of the flour and multiply by 100.

Example: 800-grams flour weight and 450-grams ingredient weight. $450 \text{ divided by } 800 \times 100 = 56.25\%$ do this for each ingredient and you will have put your dough formula into bakers percent.

Ain't math great!

Tom Lehmann/The Dough Doctor

1053

/ [Re: Switching from Grande cheese](#)

I'd suggest that you also post this on the PMQ web site (Think Tank).

<www.pmq.com>.

Tom Lehmann/The Dough Doctor

1054

/ [Re: Starter with ADY trouble](#)

I agree with Craig, also the ADY should be activated in 100F water with just a small amount of sugar (actually, a pinch is sufficient), put the rest of it in the dough. What is the finished dough temperature? Ideally, it should be around 75F, if the dough is warmer than this it will further accelerate the rate of fermentation making matters even worse. Can you provide the weights for your salt, sugar and ADY as opposed to volumetric portions?

Tom Lehmann/The Dough Doctor

1055

/ [Re: Hidden dangers of old starters?](#)

Don't worry about clostridium, the environment is too acidic, about the only thing to worry about is a change in the micro-flora resulting in a different flavor profile, if

smells OK go ahead and proceed to activate it and make some dough with it, if the dough is OK and there is nothing strange about the flavor of the finished crust you're good to go.

Tom Lehmann/The Dough Doctor

1056

[/ Re: Diastatic malt vs sugar](#)

A malted flour will always provide more crust color development with a fermented dough and since protein is a participant in the browning reaction the higher the protein content of the flour the more it will contribute to crust color development. It can safely be said that the impact of flour protein content is significantly less than that of a malted v/s non-malted flour, or inclusion of sugar in the dough formulation.

Tom Lehmann/The Dough Doctor

1057

[/ Re: Dough Management Problem](#)

I was referencing the 20-grams of yeast in the dough formula shown so 80% of 20-grams would make it 16-grams in 4-Kg of flour or 8-grams in 2-kg. flour.

Tom Lehmann/The Dough Doctor

1058

[/ Re: Diastatic malt vs sugar](#)

It wasn't in this thread was it? I think in that particular instance the individual had both flours and the KABF was more readily available, otherwise 100% of either flour would be just fine.

Tom Lehmann/The Dough Doctor

1059

[/ Re: Putting a Deck Oven in a Food Truck?](#)

The rule is to allow at least 1.5 X the oven depth as free/open space in front of the oven for the oven tended to work in. Failure to do this typically leads to wishing you had.

Tom Lehmann/The Dough Doctor

1060

[/ Re: Dough Management Problem](#)

The addition of sugar in this case is for crust color, so if you are satisfied with the finished crust color continue using sugar as you are.

I also suggest that you get the balled dough into the cooler within 20-minutes from the time the dough is finished mixing.

Keep us posted on the results.

Tom Lehmann/The Dough Doctor

1061

/ [**Re: Big amount of recipes**](#)

Once you remove the dough balls from the cooler you will need to allow them to warm to an internal temperature of 50F/10C (about 90-minutes) before opening them into skins, once the dough balls reach 50F/10C they will remain good to use for up to 3-hours at room temperature. Any dough balls not use in that period of time should be slightly flattened, placed on a lightly floured pan, covered to prevent drying (or you can place back into the dough box), then remove them from the cooler and allow to warm for only 30-minutes before you open them into skins.
Tom Lehmann/The Dough Doctor

1062

/ [**Re: Rubber band dough**](#)

Using that kind of water temperature the dough was very warm and most likely over fermented becoming what is commonly referred to as "bucky". This is a condition where the dough is VERY elastic and difficult to impossible to open into a skin without the dough tearing.
Try making the dough again but use only 70F water. Use only a very small amount of water at 100F to hydrate the IDY in.
Tom Lehmann/The Dough Doctor

1063

/ [**Re: Diastatic malt vs sugar**](#)

Fahrenheit (F).
Tom Lehmann/The Dough Doctor

1064

/ [**Re: Big amount of recipes**](#)

If you are in a restaurant you will have access to a cooler? Why not just stagger the times that you remove dough balls from the cooler so as to have a continuous supply of dough balls to work with during the entire 12-hour day?
I'm not sure I can help you with a dough that is fermented for 16-hours at ambient and then still be able to provide a consistent quality pizza over an additional 12-hour period of time during which the pizzas will be made. A lot of changes can/will take place in a yeast leavened dough over that 12-hour period at ambient.
Tom Lehmann/The Dough Doctor

1065

/ [**Re: First Margherita**](#)

The next time you make it try making one with sliced fresh (RIPE) tomato rather

than sauce, it really makes the red pop and contrast with the white and green. If you can't get fresh ripe tomatoes try Stanislaus 74/40 Tomato Filets (drained for 20-minutes), they're superb!
Tom Lehmann/The Dough Doctor

1066

/ [Re: Diastatic malt vs sugar](#)

Too hot for sugar in the crust!
Tom Lehmann/The Dough Doctor

1067

/ [Re: Oregano before or after bake?](#)

We did a study on herbs as it pertains to the flavor of pizza some years ago and what we found was very interesting. Oregano (dried) is the most over used herb on pizza, it also has the most dominant and identifying flavor, and is also responsible for the heart burn many older individuals complain about after eating pizza. In an effort to increase the flavor of their pizzas many operators just keep pouring on the dried oregano, then in short order they begin asking if anyone else has noticed the lack of flavor in the mozzarella cheese lately. Our tests showed that the dried oregano was over powering the delicate flavor of the cheese (mozzarella cheese by definition has a VERY mild flavor). We also found that our sensory panelists consistently associated the basil flavor with pizza. We then looked at the difference between fresh and dried basil. The fresh oregano (micro-leaf) was consistently preferred over the dried oregano by our panelists and when presented to individuals who limited their consumption of pizza due to the heart burn issue they reported back to us that they didn't suffer the usual heartburn. At the time we were doing two major pizza shows a year so we presented our finding at the shows for two years in a row, the results were always the same, there was a much greater preference for fresh oregano over dried oregano and as a side study we began reducing the amount of cheese used on the pizzas in conjunction with the use of fresh oregano. We asked our audience what they thought of the pizza they were given (we did not prompt them in any way), the most frequently asked question was "What brand of cheese did you use?" "This pizza has a great cheese flavor". The pizzas were made using 3.75-ounces of shredded Grande WM mozzarella on a 12-inch pizza. The oregano used was fresh micro-leaf oregano adjusted to give a very mild but yet readily identified oregano flavor. The audience had a hard time believing that we got that level of cheese flavor from just 3.75-ounces of just mozzarella cheese. This led us back to our sensory panel for another look at dried oregano, we presented them with samples of pizza made with dried oregano at levels which were typical to that being used by the industry and then asked them to identify the flavor used in other pizza samples, what we found was that the dried oregano appeared to "wipe out"/over power their taste buds to the point where they were not able to readily distinguish different flavors which led us to think about the cheese comments as well as a growing trend in the industry to use ever increasing amounts of cheese to get a decent cheese flavor in the pizzas, it's not a change in the cheese, in my opinion, it's the excessive use of dried oregano that's at fault here.

Tom Lehmann/The Dough Doctor

1068

/ [Re: Diastatic malt vs sugar](#)

Yes, omit the sugar, what temperature are you baking at?

Tom Lehmann/The Dough Doctor

1069

/ [Re: Diastatic malt vs sugar](#)

With short fermentation time the sucrose wins with longer fermentation time the diastatic malt powder wins.

Tom Lehmann/The Dough Doctor

1070

/ [Re: Check my method please](#)

For IDY I would go with 0.4%, because the dough is mixed by hand it has to be hydrated by suspending it in a small amount of warm (100F) water before addition to the dough water. As for finished dough temperature I would suggest targeting 75F, which will put the dough water temperature at about 70F.

When I was teaching pizza making to local families I found that I could take almost any pizza dough formula and plug it into this procedure and get decent results, not spectacular, but everyone reported that it was an easy procedure to follow, didn't take a lot of attention (farm families have other things to do too) and always allowed them to make pizza as well as bread that their family really enjoyed. This is why I always revert to this procedure for someone just learning to make their first pizza, when you can sit at the table with your family and enjoy the fruits of your labor the incentive is pretty great to go on and make more and even better pizzas.

:chef:

Tom Lehmann/The Dough Doctor

1071

/ [Re: Big amount of recipes](#)

Vertical wire tree racks are wire racks designed to hold pizza pans, screens and disks stacked vertically, some racks are designed to be free standing, like on a counter top while others are designed to be suspended from a wall, still others are constructed on wheels so as to be able to be easily moved about you can see these if you Google "wire pan pizza support racks". If you go to American Metalcraft at [<www.amnow.com>](http://www.amnow.com) and search "Pizza Racks" you can see pictures of the free standing racks that many stores use.

Tom Lehmann/The Dough Doctor

1072

[/ Re: Check my method please](#)

May I suggest an improved procedure?

Put water in mixing bowl first, add the yeast suspension, then add the salt and sugar immediately followed by the flour. Using a wooden spoon, mix the dough until it can no longer be mixed without fear of breaking the spoon, remove the spoon, add the oil and mix by hand until the oil is incorporated into the dough, turn the dough out of the bowl onto a lightly oiled surface, scrape the bowl clean and lightly oil it, knead the dough a few times (1 or 2-minutes), form into a ball and place back into the oiled bowl, lightly oil the top of the dough ball and cover with a piece of plastic (DO NOT SEAL OR COVER TIGHTLY), allow the dough to ferment at room temperature for about 3-hours, then turn the dough out of the bowl onto a floured surface and knead the dough for about 5-minutes or until it begins to look somewhat smooth. Lightly oil the bowl again and place the dough ball back into the bowl for 30-minutes, turn the dough out of the bowl and scale to desired weight pieces, form each piece into a ball, lightly oil each dough ball and place into individual plastic bread type 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. Allow dough balls to cold ferment in the fridge for 24 to 48-hours. To use, remove dough balls from fridge and allow to warm AT (NOT TO)room temperature until the internal dough ball temperature is in the 50 to 60F range (about 60 to 90-minutes, then roll the bag down around the dough ball and invert the bag over a floured surface allowing the dough ball to fall free from the bag, flour both sides of the dough ball and open into a skin by your preferred method. We have recently had discussion on this vert topic.

Tom Lehmann/The Dough Doctor

1073

[/ Re: Diastatic malt vs sugar](#)

If you are referencing sucrose then the answer is sucrose.

Tom Lehmann/The Dough Doctor

1074

[/ Re: Big amount of recipes](#)

Sure, on the morning of the event open all of the dough balls into skins, place on pizza screens and store in a vertical wire tree rack(s) in the fridge, they will keep all day this way, to use just remove from the cooler 20-minutes prior to dressing and baking, turn off of the screen and re-stretch a little then dress to the order and bake. This is a similar method as used by many of the fast casual pizza places. You're still going to need a cooler of some type, as holding dough between 27 and 34C for what essentially amounts to all day is going to result in more than just a little change from the first to the last of the pizzas.

Tom Lehmann/The Dough Doctor

1075

[/ Re: Big amount of recipes](#)

When you remove the dough balls from the cooler BE SURE to allow them to warm to 50F/9.9C internal dough ball temperature (not higher than this), this will give you a full 3-hour window of time to open all of the dough balls into skins without too much/excessive difference in quality between the finished pizzas. This is what essentially all of the big U.S. box chains and a good many pizzerias do.

Tom Lehmann/The Dough Doctor

1076

/ [Re: Made a few pies with Tom Lehman dough recipe in my home oven](#)

You did well! Great lookin' pizza! :drool:

Tom Lehmann/The Dough Doctor

1077

/ [Re: Delayed egg method](#)

No, none at all. Whole egg = 35% solids + 65% water, of the 35% solids about 12% is yolk which is 33% fat so the total fat being contributed by the whole egg is (10% (35% o 10% = 3.5% and 12% of 3.5% = 0.42% and 33% of 0.42% = 0.1386% total fat contribution in bakers percent from the 10% added whole eggs.

Tom Lehmann/The Dough Doctor

1078

/ [Re: Dough Management Problem](#)

I forgot to add that the salt level is 1.9% not 0.019% as indicated (76 divided by 4,000 X 100 = 1.9%) In view of the potentially weak dough you have it might be beneficial to increase the salt level to 2.5% (4000 X 2.5 (press the "%" key) and read the new salt weight in the display window. (100-grams is the new salt weight).

Tom Lehmann/The Dough Doctor

1079

/ [Re: Dough Management Problem](#)

From what you have described and from the appearance of the dough balls, especially the last picture, I'm guessing that the dough is over fermented. Is there any chance that you can use it after 24-hours rather than 48-hours? The other option is to try reducing the yeast level 20-grams in 4Kg. of flour is 20 divided 4,000 X 100 = 0.5% Note: All of your percentages shown are incorrect. You don't say what kind of yeast you are using so I can't add anything more about the yeast except that you might try reducing it by 20% to see if that helps. Additionally, you say you are adding an "improver" can you provide a list of the ingredients in that improver, many times these improvers are a cocktail of ingredients, all of which may not be compatible with long fermentation times as they were designed and intended for use in bread formulas incorporating much shorter fermentation times, usually only just a couple of hours as opposed to days for a pizza dough.

Tom Lehmann/The Dough Doctor

1080

[/ Re: Torn dough surface question gt](#)

Don't worry, that's perfectly normal. The dough will become smoother and stronger as it's worked and given more fermentation.

Tom Lehmann/The Dough Doctor

1081

[/ Re: Jewelry and Food Preparation????](#)

When we did our pizza seminars at AIB we told our students that proper attire was required of ALL persons in the shop. No open toe shoes, aprons or lab coats had to be worn, ALL jewelry that was worn and visible above the waist had to be removed (the rest we didn't want to know about) ;D regarding rings, a plain band was OK but if it was more than just a plain band it either had to be removed or covered with a plastic glove, everyone was also required to wear a hair net too and while on the topic of hair, if hair was worn below the collar it had to be restrained under the hair net (above the collar). It totally gives me the shivers when I see someone with unrestrained long hair working close to a mixer or a dough sheeter.

Regarding those TV personalities, don't you just love to watch them constantly wiping their hands on the towel they wear at their waist? It's a petri dish of bacteria! The mystery to me is why a chef's coat has a breast pocket or arm pocket designed to hold a pen or thermometer? It violates EVERY food safety rule in existence!

Tom Lehmann/The Dough Doctor

1082

[/ Re: How to combine/reportion dough balls after some cold ferment](#)

Been there, done that many times!

Scenario:

I have four dough balls that are all under scaled/too light in weight and they are ready to be opened.

Corrective Action:

- 1) Determine how much additional weight has to be added to each dough ball.
- 2) Set aside one dough ball as a sacrificial dough ball which will be used to provide the additional dough needed to bring the other three dough ball up to desired weight.
- 3) Cut a piece of dough from the sacrificial dough ball slightly larger/heavier than needed, using your scale trim the weight of the dough piece back to the target weight.
- 4) With MINIMAL handling add the trimmed dough piece to the bottom of one of the under weight dough balls (cut side facing the bottom of the dough ball) thus bringing it up to the desired weight.
- 5) When adding the trimmed dough piece just place it on the bottom (under) the dough ball, it will meld into the dough ball within a few minutes and nobody will be any the wiser of your error.

Note: The dough remaining as the sacrificial dough ball can be used to make a smaller pizza or it can be further subdivided to make bread sticks. If you plan on

making another pizza from it cut the dough pieces from it around the sides of the dough ball thus retaining a somewhat round shape to it. Oh yes, those cut pieces that you trimmed off of the piece cut from the dough ball, just gather them up and place under the sacrificial dough ball, then open that dough ball last as this will allow more time for all of those scrap pieces to meld into the dough ball.

This was one of the things we used to demonstrate to our students in our pizza seminars.

Tip: A scissors is a great specialized tool for trimming those cut dough pieces to exact weight. Place the cut dough piece on the scale pan and cut to weight on the scale pan using the scissors, works like a charm! :chef:

Tom Lehmann/The Dough Doctor

1083

/ [Re: Need help with biga dough](#)

Does your mixer have a reverse spiral dough arm? If not sure please include a picture of it. If it does have a reverse spiral dough arm you will need to reduce the total dough size/weight which will allow you to mix the dough at a higher speed for improved development/mixing action.

Tom Lehmann/The Dough Doctor

1084

/ [Re: purpose of oil](#)

It can/will both inhibit and prevent gluten development if added too soon. It prevents it by soaking into the flour before the flour hydrates, once the flour absorbs oil before water that portion of the flour which has become oil soaked cannot form gluten, we found that this is what led to everyone thinking that the weather influenced how much water the dough would absorb. This was when everyone was putting the water and oil in the bowl at the same time, the oil would float to the top of the water, then the flour was added and the oil soaked into a portion of the flour, this impacted how the dough felt (when more flour was oil soaked the dough felt soft (less gluten development) so flour was added to the dough, is less flour was oil soaked the dough felt firmer due to more gluten being developed sometimes leading to more water being added to the dough. This was blamed on the outside weather, now you know the truth, Mother Nature was found innocent. By using the delayed oil mixing method the flour is allowed to hydrate prior to the addition of the oil and dough consistency is restored.

Tom Lehmann/The Dough Doctor

1085

/ [Re: Complications with dough management](#)

Remember, change only one thing at a time!

Tom Lehmann/The Dough Doctor

1086

/ [Re: Complications with dough management](#)

A higher dough absorption will make for a softer dough consistency which will expand even more in the bowl than your present dough, I thought that was what you were trying to control. If you want to add some tenderness to the finished crust you can also add some fat to it.

Tom Lehmann/The Dough Doctor

1087

/ Re: Basil and olive oil

Always remember though that those wonderful aromas coming from the oven while the pizzas are being baked will never be enjoyed by those eating the pizza, they are lost forever, it's only the less volatile aromas that the consumer gets to enjoy, sorta like comparing EVOO to Pomace grade olive oil. In the final end though you are absolutely correct, whatever YOU like the best is the way for YOU to go.

Tom Lehmann/The Dough Doctor

1088

/ Re: Help me with a hybrid dough

Bags will be much better for this application.

A lower temperature will allow for a longer bake, a longer bake is conducive to a crispier crust as well as a crust that retains its crispiness.

Yes, if you bake at your proposed temperature or above 550F you will want to reduce or eliminate the added sugar.

Tom Lehmann/The Dough Doctor

1089

/ Re: Complications with dough management

Why more dough absorption?

Tom Lehmann/The Dough Doctor

1090

/ Re: When to add the oil

Amen to that! When we love what we do it shows in our work. I'd rather spend 50-years doing what I love to do than 1-hour doing something that I don't like doing.

Tom Lehmann/The Dough Doctor

1091

/ Re: East Coasters Mock Chicago Square Cut Pizzas

I haven't see that for a long time now. Just something different to be sure.

Tom Lehmann/The Dough Doctor

1092

/ Re: Complications with dough management

Your pizza looks great! :drool:

If you want to do some experimenting now you might try reducing the yeast level, maybe in 0.1% increments to see that improves the dough prior to opening (you indicated that it was getting big, but that's a pretty subjective term).

Tom Lehmann/The Dough Doctor

1093

/ Re: Cold prove leading to loss of elasticity

Doktah;

I'm not exactly sure what you mean in your second paragraph about re-balling the dough.

Tom Lehmann/The Dough Doctor

1094

/ Re: New pivetti flour

It sounds as if they might also be including the wheat germ too, if this is the case I would highly recommend keeping the flour refrigerated or frozen as germ oil will rancidify rather quickly. This can also be true for whole-wheat flours too.

Tom Lehmann/The Dough Doctor

1095

/ Re: Basil and olive oil

Assuming you mean fresh basil leaves. Wilted they are great, charred, not do great, so I always put mine on IMMEDIATELY after removing the pizza from the oven and let the latent heat of the pizza wilt the basil and release the wonderful aroma, in some cases I may pull the pizza out but leave it on the peel, apply the basil leaves and put the pizza back in the oven holding it towards the top of the oven to quickly wilt the basil, then apply a drizzle of EVOO to the pizza, slice and serve.

With some more heavily topped pizza I've been known to add the basil leaves on top of the sauce so they are covered by the cheese and other toppings thus protecting them from the high oven heat.

Tom Lehmann/The Dough Doctor

1096

/ Re: Cold fermenting in plastic bags.

The procedure is very simple, immediately after mixing scale and ball the dough, lightly oil each dough ball and drop into individual plastic bread/bread type bags (DO NOT USE ZIP LOCK BAGS), pull the bag snug to the dough ball, 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. When ready to use, remove from fridge and allow to warm AT, repeat AT, NOT TO, room temperature until the internal ball temperature reaches 50 to 60F, then roll the bag down around the dough ball and invert it over a floured

surface, the dough ball will fall free from the bag inverting the bag as it does so. Flour the entire dough ball and open by your preferred method. Used bags can be stored in a container or another bag in the fridge and reused many times if desired.
Tom Lehmann/The Dough Doctor

1097

/ [Re: All Trumps High Gluten, bromated v unbromated dough diffs](#)

Failure to cross-stack or allowing the dough to warm up too long after CF can also result in bubbles like that but those aren't too bad so I really wouldn't worry about them unless they were part of a bigger or different problem.
Tom Lehmann/The Dough Doctor

1098

/ [Re: New pivetti flour](#)

No, I have not worked with that particular flour. I have never heard of a semi-whole-wheat flour. When the outer layer of the wheat berry is removed (that is what we call bran) the remainder is endosperm aka white flour after milling. There is such a thing as long extraction flour which contains a bit more bran as well as ash content but it is a long call from being "semi-whole-wheat". Whole wheat flour contains roughly 20% bran, do you have any idea of the bran content of this flour? Since they say it contains bran it will require a higher dough absorption, my guess might be in the 70 to 72% range? To allow for hydration of the bran I would advise using an autolyse with this flour. Just all of the flour + all of the water, mix together and allow to hydrate for 1-hour, then add remainder of ingredients and mix together as a dough, be sure to mix it JUST until it starts to smooth out, DO NOT OVER MIX THE DOUGH as doughs containing high levels of bran do not tolerate over mixing well at all.
Tom Lehmann/The Dough Doctor

1099

/ [Re: When to add the oil](#)

Peter;

It didn't used to be that way. I made a very good living when I went to work for Jewel Tea Bakery in Melrose Park, Illinois in 1962, by 1964 I had worked up to a line supervisor on the second shift and I was making about \$11,000.00 a year with full benefits. Like I said, today nobody really wants to work, much less go the extra effort so the baking industry has gravitated to the position that everyone is expendable and that position is now reflected in the pay scale. To give you an idea of how much that \$11,000.00 yearly income was, when I took my first position at the AIB in 1965 my salary was \$6,200.00 a year. During those first few years I went to night school and took every opportunity to learn as much as possible, I started my first group in 1967 and continued to grow it right up to the time when AIB made the move from Chicago to Manhattan, Kansas (1976/77). I continued to grow the Experimental Baking Group in Manhattan and finally split myself off from it to allow me time to teach classes and develop the Bakery Assistance activity which I was Director of when I finally retired 5-years ago.

In the end I can say that I was blessed with good decision making and a desire to succeed, I was rewarded with a job (I don't like to call it that, it was really participation in a very professional family of true experts in all subjects related to food and baking). I ALWAYS looked forward to the challenges each day would bring and I was rewarded well for my efforts. Here's a stat you don't hear much of, during my nearly 50-years at AIB I only took 7 sick leave days, total! (I could have taken 14 each year). Four of those days were used when I got my pacemaker and three were used when I almost died from food poisoning in St. George, Utah. Granted, there were days when I probably should have stayed home but I didn't. Point is, most of us have the opportunity to make our lot in life, one just has to "work" to find it.

Tom Lehmann/The Dough Doctor

1100

[/ Re: All Trumps High Gluten, bromated v unbromated dough diffs](#)

Those bubbles are perfectly normal. When your flour has been over fermented it will begin to break down and become sticky, very extensible and oven spring will be reduced, after that it just keeps getting worse until you can pour the dough. No chance of reviving it either as the gluten has been severely degraded. You won't get any "off" flavors or aromas, just a more intense fermentation flavor and aroma which some might call "off". At some point you will get off flavors and aromas but that point will be after the dough breaks down and is unmanageable so it's kind of a moot issue.

Typically, the higher the protein content the more fermentation the dough will tolerate before breaking down (assuming U.S./Canadian flours).

Tom Lehmann/The Dough Doctor

1101

[/ Re: Help me with a hybrid dough](#)

How about this;
50% Power Flour
50% KABF Flour
2% Salt
1% Sugar
0.375% IDY
62% Water (65F)
2% Oil

Mix just until smooth using delayed oil addition mixing method.

Immediately after mixing scale and ball.

Lightly oil dough balls and place into individual plastic bread type bags (follow normal procedure for cold fermenting in plastic bags).

Remove bagged dough balls from fridge about 90-minutes prior to opening into skins.

Roll bag down around dough ball, invert over a floured surface, flour dough ball on both sides and open into a skin.

Dress and bake.

Note: For a crispier pizza bake at 550F.

Tom Lehmann/The Dough Doctor

1102

[/ Re: When to add the oil](#)

It sounds like your dad was the last of a breed, they don't make real bakers anymore. Those working in bakeries today are seldom, if ever educated in the trade, they're human robots just doing what they're told to do without any knowledge of why they're doing it. It used to be that when I went into a bakery and asked people how long they had been in the baking industry I'd get answers with two digits, now if I get two years I've found an "old timer", most are measured in months. Sadly, It's JUST a job anymore. Now with the closing of AIB there isn't anyplace for the baking industry to send people for formal training anymore either, and the price is being paid in high employee turnover just like many other industrial companies.

Tom Lehmann/The Dough Doctor

1103

[/ Re: Cold prove leading to loss of elasticity](#)

The only time you proof the dough after opening it into a skin is if you want to make a thicker finished crust (like a thick crust pizza), otherwise, for a thin crust pizza you open the dough ball into a skin, dress it and bake it.

As to those high absorption doughs, they usually use an autolyse to help the flour absorb the water, they also require specialized handling (we recently had a good video here showing how it's done, maybe Peter can find it for you). Save those high absorption doughs for making AFTER you gain good proficiency making lower (60 to 65%) absorption doughs for now. As for opening the dough while still cold, I can't say if that will work for you or not, you will need to try it to find what works best for YOU with YOUR dough made with YOUR dough management procedure.

Tom Lehmann/The Dough Doctor

1104

[/ Re: All Trumps High Gluten, bromated v unbromated dough diffs](#)

Mike;

Yes, to the best of my knowledge, bromated flour is still the flour of choice in NY and NJ pizzerias. Bromate (a carcinogen) is converted to bromide (not a carcinogen) during the baking process and as long as the residual bromate is at 20ppb (parts per billion) or less it is deemed to be safe. At one time (back in the 60's and early 70's it was thought that all of the bromate was converted to bromide during the baking process as tests of the time couldn't detect levels as low as 20-ppb. The Japanese developed a test that could detect such low levels and the newspaper headlines were "Bromate found in baked bread" OMG! We're all going to die of cancer! The amounts being detected were in the single digit ppb range. Because of this bromate was taken off of the approved food ingredient list in many countries. The truth is that the air you breathe or the water you drink is more dangerous than the small amount of bromate residual in bread products. The U.S. set a limit of 20-ppb for residual bromate with a maximum limit

of 50-ppm in bromated flour. Most bromated flours made today incorporate bromate at less than 15-ppm (BUT it COULD be as high as 50-ppm). At the commonly accepted <15-ppm level you probably won't see much difference in flour performance until you really begin to stress the flour out at around 4 to 5-days (CF) or 2 to 3-days RF. NOW, if the level used is higher, all bets are off the table as bromate is a VERY EFFECTIVE DOUGH STRENGTHENER. As for flavor, the tests that we did at AIB many years ago showed no impact on finished product flavor until the bromate level exceeded 75-ppm. As for crumb structure, bromate tends to promote a closer/tighter crumb structure, especially at higher levels >20-ppm. Unless the dough is subjected to very long fermentation times or the flour is weak or a composite flour (multi-grain) bromate levels much above 40-ppm will restrict dough expansion during baking leading to a condition known as "scalping" in white pan bread production where the top crust separates from the loaf and is then pulled off at the vacuum depanner.

We used to refer to bromate as a "crutch", it was seldom ever really needed and it was used more as a precautionary measure than as an essential ingredient, with the consumer health safety concerns over potassium bromate new dough strengtheners were developed aka bromate replacers, these for all practical purposes, are just as effective as bromate but without any of the health safety implications associated with bromate and are commonly used today to help strengthen otherwise weak or highly stressed doughs.

Probably more than you wanted to know.

Tom Lehmann/The Dough Doctor

1105

/ [Re: Cold prove leading to loss of elasticity](#)

Absolutely! This is why I encourage those not as skilled at opening a dough ball to open the dough at a colder temperature. Also, the type of flour can have a great impact, a weak flour may be very soft and extensible at anything but a cold temperature, but for most folks, using a "typical" U.S. pizza type/bread type flour, a cold dough right out of the fridge will be excessively tough and elastic to open easily, in addition, there is also a possibility that the dough will be cold as it goes into the oven which dramatically increases the probability of severe bubbling or in some cases taking on more of the appearance of pita than pizza in the oven. :(

Tom Lehmann/The Dough Doctor

1106

/ [Re: Cold prove leading to loss of elasticity](#)

By "cross-stacking" you will also prevent the development of excessive condensation in the individual containers which results in a wet dough. The biggest benefit to cross-stacking is that it is conducive to achieving a consistent fermentation rate which results in more consistent finished dough performance.

Tom Lehmann/The Dough Doctor

1107

/ [Re: Cold prove leading to loss of elasticity](#)

Here is what I'm suggesting;

Lightly oil each dough piece as you place it into the individual dough boxes, leave the box(es) open until the internal dough ball temperature reaches 50F, then lid the boxes for the duration of cold fermentation. When you want to use the dough, remove from the fridge and KEEP COVERED/LIDDED, allow the dough to set AT room temperature until the internal dough ball temperature rises to 50 to 60F (anything in that temperature range will work OK), then remove the dough from the container and proceed to open into a skin by your usual manner. DO NOT RE-BALL the dough.

Tom Lehmann/The Dough Doctor

1108

[/ Re: Cold prove leading to loss of elasticity](#)

Unless you're making bread, ditch the "window pane" test for gluten development, instead, just mix until the dough "just" takes on a smooth appearance. Your mixer will think kindly of you and you will get a finished crust with a more open crumb structure with better bake-out properties. You don't mention anything about your finished dough temperature or how you are cold fermenting your dough, but you should be looking for a finished dough temperature in the 70 to 75F range and either cross-stacking/leaving containers open until dough reaches 50F internal dough ball temperature or plastic bagging (preferred). Failure to do any of these can lead to a weak dough condition, especially after 3 to 5-days in the fridge. Also, you don't mention which "00" flour you are using but do be aware that some of the Caputo flours are not designed for more than about 12-hours of fermentation time while others are designed for longer fermentation times and might be better suited to your application.

More information would be helpful.

Tom Lehmann/The Dough Doctor

1109

[/ Re: All Trumps Unbromated/Unbleached - Inconsistencies?](#)

In your dough formula, what type of yeast are you using and how are you adding it.

Tom Lehmann/The Dough Doctor

1110

[/ Re: All Trumps Unbromated/Unbleached - Inconsistencies?](#)

Which A.T. flour are you using: #50143; #50121; or #50111?

Tom Lehmann/The Dough Doctor

1111

[/ Re: Different Stages of a Par Baked Crust](#)

No, DO NOT EVER vacuum package pizza crusts or tortillas! Both are prone to clostridium which can be (usually is) deadly. There is a track record for clostridium growth in tortillas (two cases that I'm aware of) out of Canada. Gas flush packaging

uses either carbon dioxide or nitrogen with about 0.5% oxygen to prevent growth of clostridium. The material you are thinking of is a marine colloid such as Xanthan or Carageenan gum for increasing moisture retention in baked products. Balchem is a company specializing in these ingredients and they have a product that they call Ticaloid Lite which I've personally used in this application and it works very well.

Tom Lehmann/The Dough Doctor

1112

/ Re: Different Stages of a Par Baked Crust

Mo;

The shelf life of par-baked pizza crusts stored at ambient room temperature (70 to 85F) will depend to some extent upon the method by which it was made (the dough that is). A crust that was made from a dough that was cold fermented for 24 to 48-hours will typically have a shelf life of about 4-days before mold rears its ugly head, if the fermentation period is more along the lines of 5-days you can add another 12 to 24-hours to this but if it was made using a sourdough method where the pH of the finished crust is down around 4.2 or lower you might get an additional 2 to 3-days (possibly more). With refrigerated storage (34 to 38F) it's entirely possible to double these numbers and with frozen storage mold is no longer the issue, instead we are now concerned over things such as oxidative rancidity, freezer burn (a MAJOR issue in home freezers with automatic defrost cycles), with frozen storage periods of more than 45-days there can also be oxidative flavor changes which can render the crust bland/tasteless, even when reheated. In most home freezers with auto defrost we see moisture migration from the crust (freezer burn) within the first two to 3-weeks with it becoming progressively worse as time progresses. By the time the crust has been in the freezer for 60-days or less it is so bad that the crust warps and checks or cracks, because of these potential issues with frozen storage we don't recommend storing crusts or other yeast leavened baked foods for that matter, more than 3 to 4-weeks.

Note:

With the above cited mold issues the appearance of mold will also be influenced by the level of inoculation/amount of exposure to mold.

The issues related to frozen storage are largely related to the crust temperature at time of freezing, the rate at which the crust is frozen and the characteristics of the packaging material used to package the crusts in. Commercial manufacturers also use a gas flush packaging to address the oxidative issues.

Tom Lehmann/The Dough Doctor

1113

/ Re: Sauce filled calzone problem

Try this;

DO NOT brush the skin with oil, instead just brush the bottom and two side edges with water, then apply your filling, fold the top half of the skin down over the bottom half aligning the edges, crimp the edges using finger pressure, transfer the calzones to a baking sheet, cut or tear a vent hole in each calzone, brush with melted butter and bake at 450/ 232C until golden brown. Because of the moisture content of the fillings calzones do not fry well at all. The only exception to this is

when the calzones are fried and then finished in the oven.
Tom Lehmann/The Dough Doctor

1114

/ [Re: adding yeast to dough, does order really matter?](#)

Peter;
Your second reference is EXCELLENT! That's a good one for the "LIBRARY".
You never fail!
Tom Lehmann/The Dough Doctor

1115

/ [Re: Can I swap out a dough for a different type of pizza](#)

What you will get will most likely be more like a thin crispy style of pizza, go ahead and do it, I promise you nothing bad will come of it and it will serve as a learning experience for you too.
Tom Lehmann/The Dough Doctor

1116

/ [Re: Bulk ferment in big ball or unshaped?](#)

Agreed, with small amounts of dough it matters not.
Tom Lehmann/The Dough Doctor

1117

/ [Re: adding yeast to dough, does order really matter?](#)

Sourdough starters are not yeast based, instead they are bacteria based and we all know, or should know how rapidly bacteria can multiply under a myriad of conditions. Yeast requires a lot of oxygen to get it to reproduce but once you get it reproducing it multiplies very fast.
Tom Lehmann/The Dough Doctor

1118

/ [Re: Tiny Bubbles on the crust](#)

Thank you for the picture, those aren't the tiny bubbles I was at first thinking of but those are the result of baking at a very high temperature, above 850F.
Tom Lehmann/The Dough Doctor

1119

/ [Re: Newbie looking for a basic beginner recipe for home oven](#)

Hummm, I must have been side tracked, didn't know you were looking for second level dough formulas.

You might give this one a try:

Flour: 100% (Strong bread type flour)

Salt: 1.75%

Sugar: 2% (optional)

Oil: 2%

IDY: 0.375%

Water: 62% (70F/approx.)

Target finished dough temperature: 75 to 80F

Procedure:

- 1) Put water in mixing bowl.
- 2) Add salt and sugar (if used).
- 3) Add flour then add the IDY on top of the flour.
- 4) Mix at low speed just until you don't see any dry flour in the bottom of the mixing bowl.
- 5) Add the oil and mix another minute at low speed.
- 6) Mix at the highest speed possible just until the dough takes on a smooth appearance.
- 7) Take the dough directly to the bench for scaling and balling.
- 8) Lightly oil each dough ball and place into individual plastic bread type bags (NOT Zip Lock type bags).
- 9) Twist the open end into a pony tail to close and tuck it under the dough ball as you place it into the cooler/fridge.
- 10) Allow the dough to cold ferment for a minimum of 24-hours (48-hours is the "sweet spot") but dough can CF for 72-hours.
- 11) Remove dough ball(s) from fridge and allow to warm AT room temperature until the internal temperature reaches 50 to 60F.
- 12) Roll bag down around the dough ball and invert over a floured surface allowing the dough ball to fall free from the bag.
- 13) Flour both sides of the dough and open into a skin by your preferred method.
- 14) The pizzas can be baked on a stone, steel or in a pan/disk.
- 15) Baking temperature in a home oven is 500F.

Many readers here have used this dough formula and procedure with good success. The formula and procedure are designed to mimic that used by many pizzerias as well as some of the larger pizza chains. Once mastered, it can be modified to provide whatever characteristics you desire in your finished pizzas.

Tom Lehmann/The Dough Doctor

1120

/ [Re: adding yeast to dough, does order really matter?](#)

Almost NONE of the yeast cells reproduce during dough fermentation, if they did we would have what is known as run away fermentation, think of it like a nuclear explosion of yeast cells, 1 becomes 2, 2 becomes 4, 4 becomes 8, 8 becomes 16, 16 becomes 32, you see the trend. Yeast cells divide by a process known as budding, within the yeast that we add there are mature cells as well as budded cells (cells partially budded with "daughter cells") as well as recently divided cells. During the fermentation process the mature cells DO NOT bud, some of the already budded cells will mature and divide but neither will reproduce, the recently budded cells may mature but they will not reproduce. Any damage done to the yeast cells due to improper hydrating will actually impact the number of cells capable of

participating in what we call fermentation.
Tom Lehmann/The Dough Doctor

1121

/ [Re: Newbie looking for a basic beginner recipe for home oven](#)

If you will go to the PMQ web site at <www.pmq.com> and go to the Recipe Bank, and use "pizza dough" for your search words you will find a home made pizza dough "recipe" that I have posted there. This is a well proven dough formula and procedure and will serve to get you started making pizzas from which you can build upon.

Tom Lehmann/The Dough Doctor

1122

/ [Re: Complications with dough management](#)

Give it a try and let's see how it works out for you.

Tom Lehmann/The Dough Doctor

1123

/ [Re: Complications with dough management](#)

I see your problem already. A 10 to 20-minute rest (fermentation period) after mixing is WWAAYY too short. Change your 10 to 20-minutes to 2-hours (or more) and I think you will find you will get a smoother dough. You need to allow time for biochemical gluten development to develop some of the gluten before the kneading process, or if you want to develop biceps like the village blacksmith you can develop the gluten through energy input (like a mechanical dough mixer does) but it will take an hour or more of continuous dough kneading to do so. I don't know about you but my biceps are just fine and I've got better things to do with my time so I always opt to let biochemical gluten development do the hard work of gluten development for me, allowing me to save my strength for dressing, baking and eating those pizzas :-D

Tom Lehmann/The Dough Doctor

1124

/ [Re: adding yeast to dough, does order really matter?](#)

Scott;

Once the IDY has been hydrated or the ADY has been hydrated and activated either one can be added directly into cold water without any problem (remember, it's the hydration process that causes the problems here), once hydrated they are both just like compressed yeast/CY.

Compressed yeast/CY, since it is already hydrated, can be put directly into cold water without any problems at all.

Note:

ADY takes about 10-minutes to fully hydrate, during that time it will also activate. IDY only takes about 3 to 5-minutes to fully hydrate so you will not see any

activation during that time. This is why we say that ADY is both hydrated and activated prior to addition but IDY only needs to be suspended. When the IDY is added in this manner its performance is essentially identical to that of CY, however if you are replacing ADY with IDY you might want to both hydrate and activate the IDY prior to addition to retain the same performance/fermentation characteristics. This is really not much of an issue with regular doughs but it can be an issue with very short time doughs such as no-time dough or emergency dough.

Tom Lehmann/The Dough Doctor

Tom Lehmann/The Dough Doctor

1125

/ Re: Complications with dough management

You will want to use a dial aka stem type thermometer to measure the internal dough ball temperature. Yes, a cold dough can/will promote sticking to the peel as a small amount of condensation can form at the interface of the peel and the dough while the skin is being dressed. If your dough is still lumpy/knotty after kneading it sounds as if you may not be kneading the dough enough, yes, this can result in holes in the skin during opening. Cold dough is definitely harder to open than warm dough. As for your dough weight, it's actually a little more than what I personally use for a 10" skin, I use 7-ounces/roughly 200-grams.

Tom Lehmann/The Dough Doctor

1126

/ Re: adding yeast to dough, does order really matter?

The "I" in IDY stands for INSTANT as in instant hydrating (actually just fast/rapid hydrating), so if you put the IDY in cold water the water will enter into the yeast cells and remove the glutathione from the cells before the cell walls can swell to seal in the glutathione. The 100F water promotes rapid swelling of the cell wall to limit loss of glutathione from the yeast cell(s). When glutathione is flushed from the cells the yeast isn't killed but its ability to ferment is seriously impaired PLUS glutathione is a serious reducing agent which will make a dough soft and extensible to the point where it's difficult to handle (think "dead yeast" which is used as a more consumer friendly form of L-cysteine/PZ-44).

Tom Lehmann/The Dough Doctor

1127

/ Re: Doughmate Dough Trays

Allow the boxes to remain cross-stacked until the internal dough ball temperature reaches 50 to 55F. If targeting a 3-day C.F. you can go with 55F but if targeting a longer C.F. go with 50F. Once the targeted dough ball temperature is reached you can apply the lid/down-stack. After the C.F. period remove the box from the cooler and place at room temperature and allow the dough to warm to 50F but not more than 60F (internal temperature) before using the dough. Note: Most pizzerias use 50F as it allows for a longer window of time to use the dough. One other thing, be sure to lightly oil the top of the dough balls as you place the box in the cooler, this will prevent excessive drying of the dough during the cross-stack period. DO NOT

oil the box.

Tom Lehmann/The Dough Doctor

1128

/ Re: Complications with dough management

First of, after the CF period you should allow the dough to warm to 50 to 60F (internal dough ball temperature, NOT external). Since you are getting a lot of sweating in the fermentation containers I'm guessing that your finished dough temperature might be excessively high, you don't mention what it is but I'd suggest targeting 70 to 75F for the finished dough temperature (after mixing). As you are having some issues with opening the dough I's also suggest reducing the dough absorption from your present 66% to possibly 62% as this will make the dough easier to handle both during opening and on the peel, then as you become more proficient you can begin to increase the absorption incrementally (66% may be too high for your specific flour, dough management procedure or skill level).

Remember that the ideal absorption is that which provides the best dough handling properties for YOU. It is NOT recommended that you oil your wood peel, this only makes the dough more difficult to slide off, instead, just use it as it is after lightly sanding and NEVER wash a wood peel, just wipe it down with a damp towel. Lastly, you don't say what the dough weight is for the size pizza you are making so we can't determine if your dough weight is correct or not. If you are not using sufficient dough weight you might be stretching the skin too thin which will significantly increase the tendency for the skin to adhere or exhibit poor release properties from the peel.

Tom Lehmann/The Dough Doctor

1129

/ Re: Cinnamon rolls

For cinnamon rolls we want a sweet tasting roll not necessarily a well fermented flavor so for this reason I normally like to target a finished dough temperature between 70 and 75F/21.1 and 23.9C, in some cases I will target a finished dough temperature of 80F/26.7C and ferment the dough at room temperature for only 2 to 3-hours before using it to make my cinnamon rolls.

The reason why I am A.R. on temperature is because it is the temperature of the dough that drives fermentation and as I've always said "Without temperature control you cannot have effective dough management" Without effective dough management you cannot have consistency from one dough to the next.

By far, the best way to judge a pizza dough to determine if it has been sufficient mixed is by its appearance. If you stop your mixer after each minute of mixing you will be able to see the dough progressively becoming smoother. As soon as the dough has taken on a smooth (not lumpy) appearance, it has be sufficiently mixed. With just a little time you will be able to look at the dough as it is mixing and see it take on the desired smoothness, once you see that, you're done mixing. As a rule, with pizza doughs as well as pastry doughs it is better to error on the under mixed side of the equation than to over mix the dough. The reason for under mixing a pastry dough is because it will receive significant gluten development during the following rolling and/or folding/forming procedures.

It is impossible to answer your question regarding your mixer as all mixers are

different but suffice it to say that low speed should only be used to combine the ingredients together prior to mixing the dough at a higher speed where gluten development will actually take place, with most home type mixers I'm guessing that this will be either speed #2 or #3 but in the end it will be the highest speed at which the mixer will mix the dough without showing strain or overheating the motor.

If you don't have a spiral design dough arm on your mixer you will most likely need to periodically stop the mixer to pull the dough down off of the top of the "C" hook aka "J" hook. If your mixer has a spiral design dough arm you will not need to do this as the design of the arm pushes the dough down to the bottom of the bowl rather than allowing it to climb up the hook.

Tom Lehmann/The Dough Doctor

1130

[/ Re: East Coasters Mock Chicago Square Cut Pizzas](#)

And I remember very well back in the late 1970's and early 80's when Chicago pizza patrons were sending pizzas back to the kitchen from some of the new pizza places because the pizzas were "burnt". It was kind of a culinary shock to Chicagoans that anyone would actually eat a burnt pizza! One has to remember that it's the huge amount of variation/difference between pizzas made in different regions, even cities and towns across this great country (and now you can add "the world") that has driven pizza to the pinnacle of culinary enjoyment that it has achieved. All of the things that make those pizzas different are the very things that have driven and continue to drive the popularity of pizza. Long Live Pizza!

Tom Lehmann/The Dough Doctor

1131

[/ Re: Doughmate Dough Trays](#)

For bulk fermentation it is generally considered better to use a fermentation container that is smaller in diameter and deeper in depth than a rectangular shaped shallow box. The reason for this is because the smaller diameter X deeper container allows less surface area for evaporative cooling and drying which means the dough ferments at a more constant rate (as a bulk dough) ASSUMING WE ARE TALKING ABOUT A REAL "BULK" DOUGH SIZE. If you are referencing 20-ounces of dough as a bulk dough for all practical purposes it is really nothing more than a large size dough ball and it acts as such during fermentation. For home bulk dough fermentation I've found that a pasta pot works extremely well when I'm fermenting several pounds of dough. Save the dough boxes for cold fermenting your dough balls (be sure to follow the cross-stack procedure) to avoid disappointment when you open the boxes to use the dough balls.

Tom Lehmann/The Dough Doctor

1132

[/ Re: Using all purpose flour when shaping dough](#)

Not to worry, even though your dusting/bench flour might be malted the malt will not convert any starch to sugar as there is not sufficient time for that to happen

when used as a dusting flour.
Tom Lehmann/The Dough Doctor

1133

/ [Re: adding yeast to dough, does order really matter?](#)

JD;

Well, it all depends if you are mixing your dough by hand or using a mechanical mixing device. If you are mixing the dough by hand the IDY must be suspended in warm (100F) water prior to addition. The best way is to add it to the dough water in the mixing bowl, however, if you are using a mechanical mixing device where the total mixing time will be 5-minutes or more the preferred way to add the IDY is to just add it (dry) right on top of the flour when you begin mixing. If the total mixing time will be less than 5-minutes it is recommended that the IDY be first suspended in 100F water and mixed into the dough water prior to beginning the mixing process.

Tom Lehmann/The Dough Doctor

1134

/ [Re: Over fermentation issues \(CY or Flour issue?\)](#)

If your dough rises and then collapses this is what is referred to in the bread making circles as the first full rise which represents about 60% of the total amount of fermentation the flour used in the dough will tolerate before complete break down. In a case like that all you need to do is to re-ball the dough and wait for the dough balls to ferment sufficient to be opened into skins, which depending upon temperature, amount of yeast, amount of salt and flour strength can take anything from 90-minutes to several hours.

Tom Lehmann/The Dough Doctor

1135

/ [Re: When to add the oil](#)

Your dad should have known Don Kinstrand?

Tom Lehmann/The Dough Doctor

1136

/ [Re: Living in Japan forces the necessity to learn to make NY Pizza](#)

Bruce;

Welcome to the site!

The next time you make your N.Y. style pizza take some pictures, top, bottom, and a cut slice showing the internal crumb structure and send it over with a list of what you like and dislike about the pizza, also be sure to give us your dough formula as well as the entire dough management procedure including all temperatures and times. Baking conditions will also help. With this information there are many of us here who can help you achieve the characteristics you are trying to get in your pizza. You might go to my web site <www.doughdoctor.com> and view some of the

videos I have posted there on making New York style pizza.
Tom Lehmann/The Dough Doctor

1137

[/ Re: 20" \(50cm Pies\) im up to 24oz \(700g\) dough balls to get up to size](#)

John;

From the looks of the pizzas in your pictures I'd say your pizzas are somewhat thicker than a typical New York pizza, however it's YOUR pizza and YOUR version of a New York pizza so it is what it is. If your customers like it....go for it. Case in point, we have AJ's New York Pizza, Google: AJ's New York Pizza, Manhattan, Kansas. As the name indicates we sell a New York style pizza (by the slice) but the pizza is different from a true New York slice in that it is crispy (more of a New Haven style pizza), so crispy that one can pick a slice up by holding just the edge (something you could NEVER do with a true New York slice) but yet people just love it (five awards for best pizza in 10-years) and three stores, so Adam is doing something right. You HAVE to play to the preferences of YOUR audience! A true N.Y. slice would never sell here as it is much too soft, so we made it crispy and people HERE love it. If 700 or 750 grams of dough works for whatever size you are making and people like it.....go for it!!!! Never over think success, just accept it.
Tom Lehmann/The Dough Doctor

1138

[/ Re: Blitz Pastry method?](#)

But puff pastry dough doesn't contain any yeast.
Tom Lehmann/The Dough Doctor

1139

[/ Re: Blitz Pastry method?](#)

Rolls is correct with the name of the butter "LURPAK". I am sure that there are other butter brands that will work equally as well. You want to have a butter that will NOT be incorporated into the dough during mixing, shredded butter should work OK if it is a coarse shred. As for dough absorption I think 50% is too low, I'd go with 55% or a little more. If you cut the finished dough with a sharp knife you MUST be able to see the pieces of intact butter in the dough. The larger the pieces of butter the more predominant the flake will be.
Tom Lehmann/The Dough Doctor

1140

[/ Re: Dough ball questions](#)

Dough that is opened and used at a temperature under 50F exhibits a strong propensity to bubble during baking and dough that is much above 60F is beginning to ferment at a faster rate so it is becoming increasingly gassy which can also result in large bubbles in the finished crust as well as the fact that the dough as it ferments becomes increasingly more difficult to open and shape into a pizza skin.

Tom Lehmann/The Dough Doctor

1141

/ [Re: Dough ball questions](#)

Actually, after you take the dough out of the fridge you are not proofing it, instead you are tempering it. The ideal temperature to allow the dough ball to come to before you begin opening it into a skin is in the 50 to 60F range. As a newbie you may not be very proficient at opening the dough so you may find it a bit easier to open the the lower end of the temperature range (50 to 55F), remember, this is the INTERNAL dough ball temperature so you will need to have a dial aka stem type thermometer to measure the temperature.

Tom Lehmann/The Dough Doctor

1142

/ [Re: Opening a NY Style Sliceshop](#)

When we did the work on gas v/s electric ovens we had identical ovens of gas and electric. There was a Blodgette deck (gas and electric as well as an XLT (gas and electric) and the gas always gave a faster bake. We even went so far as to work with XLT to modify the electric air impingement oven to see if we could get it on par with its gas counterpart, we changed finger configurations to and bottom and worked with the fan speed then replaced the fan with new ones having moving more air, when all the dust had settled we couldn't get the electric oven to bake the same as the gas oven.

Tom Lehmann/The Dough Doctor

1143

/ [Re: Opening a NY Style Sliceshop](#)

Most shops will use a separate oven for reheating since the oven will be opened constantly as slices are reheated. Also, it's not very efficient to have the oven reheating the slices "out back" in the kitchen. Most shops have it right in front of the customer. Remember, the reheat time will likely only be a minute or so.

Tom Lehmann/The Dough Doctor

1144

/ [Re: Humidity in oven.](#)

Your idea is sound but your timing is off, instead of pouring the water when you place the pizza in the oven you should do it several minutes prior to placing the pizza in the oven. You should not be trying to flood the oven with steam as you would when making certain types of breads, instead you just want to add a little moisture/humidity to the oven. The amount of water added needs to be measured so it is all evaporated at about the same time the pizza is done baking. I'm not sure the use of lava rocks is the best idea either as it increases the surface area for evaporation which puts a lot of moisture in the oven all at once (this is called "flooding" the oven with steam, instead you want as little area for surface

evaporation as possible. Think a 2" diameter piece of pipe, 6-inches long (automotive tailpipe comes to mind) with a flat piece of steel welded to one end so it will hold water and stand upright in the oven, experiment with the amount of water added to the pipe. The issue that you will need to work out is when you add the water to the pipe it will be very hot thus releasing steam rapidly into the oven (not what you are looking for). Maybe pour boiling water into the room temperature pipe and place it into the oven a minute or so prior to placing the pizza in the oven would work better? Like I said, this will be the challenge.
Tom Lehmann/The Dough Doctor

1145

/ [Re: Joe Heffernan/The Independent, Seattle/ChefSteps dough recipe](#)

Hang with us and you'll be making great pizzas in short order. Parallei's advice is spot-on. I have a Dough Management Procedure posted here that you might try, it's easy to follow and makes a good pizza too, then once you have mastered that you can begin experimenting with variations to the formula or dough management procedure to satisfy your curiosity or make a pizza that is more specific to your likes.

The most important thing is to have fun of your pizza journey!
Tom Lehmann/The Dough Doctor

1146

/ [Re: Are American Pizzas \(New York etc\) made with hard or soft wheat?](#)

Your assumptions about refrigerating the dough are absolutely correct. In addition to allowing the dough to be held for days rather than hours it also provides for much improved dough consistency and financial return, just ask Papa John's if it's any cheaper to provide refrigerated dough from a commissary once a week as opposed to making fresh dough every day at each store.
Tom Lehmann/The Dough Doctor

1147

/ [Re: Pizza aerobics](#)

Optimum dough fermentation for a straight dough is best defined as first full rise + 25% of first full rise time. However since the straight dough procedure is seldom used when making pizza and instead a hybrid procedure is more commonly used employing different fermentation conditions there is no hard and fast rule for determining optimum fermentation, the best definition I can give you is optimum fermentation is that fermentation time which provides the best overall dough handling properties at the time of opening the dough balls into skins by whatever method you opt to use. Forget bread dough technology, it doesn't apply to pizza dough. The only real way to determine optimum fermentation is through experimenting under CONTROLLED conditions, this means that you will need to strive to maintain those factors which affect the fermentation rate as a constant, think finished dough temperature, dough absorption, type, amount and freshness of the yeast, room temperature, refrigeration temperature, internal dough ball temperature at the time of opening (50 to 60F). In other words, Effective Dough

Management.
Tom Lehmann/The Dough Doctor

1148

/ [Re: Joe Heffernan/The Independent, Seattle/ChefSteps dough recipe](#)

I can't say much about your dough process as you don't include the finished dough temperature, but I can say that 20-minutes for the dough to warm to 50 to 60F (NOT ROOM TEMPERATURE) is mmuucchh too short, instead use a thermometer to measure the internal dough ball temperature to determine the time for your specific conditions.

To replace your bread flour with Caputo "00" flour is totally possible but I would advise you to select a flour with a long fermentation tolerance if you plan on following your present procedure. Any oven that will bake at 700F or higher will handle the "00" flours just fine.

Also, be aware that all flours are different so you may need to adjust the dough absorption with the new flour.

Tom Lehmann/The Dough Doctor

1149

/ [Re: Biga - so many questions and so many things to learn!](#)

A biga is nothing more than a pre-ferment for use when making dough. In the baking industry a plastic biga is referred to as a "sponge" to be used with the sponge and dough process of making bread, if the biga has sufficient water to make it a liquid it is referred to as a brew in the baking industry. The purpose of these is to condition the gluten in a portion of the flour and to develop a level of flavor through fermentation in that flour.

A biga will usually contain from 30 to 50% (though sometimes more) of the total formula flour with an absorption of between 50 and 60% (again, it can be greater than this).

The fermentation time for a biga is usually in the 12 to 24-hour range with yeast levels (as compressed yeast, though any type of yeast can be used at correct substitution levels) of 1% for the shorter times and 0.25% for the longer time, but this should only be used as a guide as the amount can/will change with factors such as flour strength and temperature in the fermentation area.

To start a biga place the water (75F) in an appropriate size container, add the yeast and stir to suspend the yeast, then add the flour and mix in until the flour has been fully hydrated, that's all the mixing that is required. Note the temperature of the biga as well as the room temperature. lightly cover the biga (I just drape a piece of plastic over the container) and allow to ferment for the desired time. Then transfer to a mixing bowl, add the remainder of the flour and the other ingredients as well as the water (cold/45F), mix the dough in your normal manner just until it takes on a smooth appearance. At this point some prefer to bulk ferment the dough, my own preference is to scale and ball it at this time, and cold ferment for 24-hours or allow the dough balls to ferment at room temperature for about 6-hours for use on the same day as the dough was mixed. You can adjust the amount of flour in the biga, the amount of yeast or the fermentation time to vary the flavor of the crust.

Tom Lehmann/The Dough Doctor

1150

/ Re: Opening a NY Style Sliceshop

By us the code requires that ALL ovens be totally under a hood, gas, electric or otherwise! Best to check with your codes department AND be sure to get their opinion in WRITING prior to purchasing your oven/ovens. Gas ovens will exhibit superior and faster baking properties due to the higher concentration of moisture in the air within the baking chamber due to moisture/water being a byproduct of combustion, in an electric oven the air is much drier so heat transfer is not as good and baking/reheat times are longer (about 20%). If you opt to go electric be sure to get an estimate of operating cost from your local utility company. I'd still opt for a full size electric deck over a couple of the smaller ovens if space permitted.

Tom Lehmann/The Dough Doctor

1151

/ Re: Are American Pizzas (New York etc) made with hard or soft wheat?

While I can't prove it, my thoughts have always been that the Italian "00" flours probably contained a portion of U.S. or Canadian hard wheat to give it the longer fermentation tolerance that we see in some of the newer flours. I don't follow the Italian wheat varieties or the wheat breeding programs associated with developing their wheat so I have to plead total ignorance but I have seen what the breeders can and have done with U.S. wheat varieties so it wouldn't surprise me at all if they have developed soft wheat varieties with decent fermentation tolerance. To give you an example, wwaayy back in the 70's it was said that hard red winter wheat could not be developed with much more than about 16% protein content, the breeders proved that to be wrong, very wrong as then developed a couple of varieties with protein contents approaching 25%, yes! 25% protein content! I was able to test some of the flour from those super high protein content wheat varieties and boy were they ever STRONG! They were so strong that we couldn't over mix them in our mixers and fermentation tolerance was through the roof! Those characteristics were so diametrically opposed to what was desired that further work on those varieties was stopped and needless to say seed was never released for planting, no one wanted to run a risk of any of that stuff getting mixed into the normal HRW crop, and there was a fear that the DNA of the protein might be different too which could potentially open a Pandora's Box with all other wheat varieties. Moral of the story: Never challenge a wheat breeder, and never tell them that it can't be done!

Tom Lehmann/The Dough Doctor

1152

/ Re: Need help with biga dough

I believe that I've mentioned this before that high absorption doughs are the one weakness of spiral mixers, they just don't handle them quite as well as planetary mixers do. Holding back a portion of the water is the only realistic way to mix high absorption doughs in a spiral mixer. When we did it we used to add 70% absorption to the dough right up front and then gradually add the remainder of the water after the dough was partially developed. This worked well for us too.

Tom Lehmann/The Dough Doctor

1153

/ Re: Are American Pizzas (New York etc) made with hard or soft wheat?

In the U.S. as well as Canada durum wheat is a different type of wheat than the hard red wheats used for making strong flours. The durum wheat produces gluten that is very tough and elastic which is excellent for pasta production which is why we typically reserve durum for use in making pasta, it is also widely used in making oriental noodles. The types of wheat used for milling into flour for bread and roll production are varieties of hard red winter, hard red spring, or hard white wheat. We also have varieties of soft wheat which can be either soft red or soft white wheat varieties. The soft wheats are typically lower in gluten forming proteins which also produce a softer, more extensible gluten characteristic. In the U.S. and Canada soft wheat flours are reserved for use in making pastries, cookies and biscuits which is why they are referred to as "pastry flours".

Tom Lehmann/The Dough Doctor

1154

/ Re: Need help with biga dough

A huge risk that is run by following the above "edit" note is that of washing (separating) the gluten from the starch (this is how we "wash" gluten from the flour). If the gluten is even partially separated from the flour it is impossible to re-incorporate it thoroughly and the end result is a dough that has a lumpy appearance which is somewhat weaker too. We ran into this very issue in the bread and bun industry when using the brew process (essentially a biga) where the gluten would be separated during agitation (only 1-r.p.m. sweep agitation) resulting in dough weakness, this eventually lead to the industry, for the most part reverting back to the sponge and dough process (the sponge is essentially a 50 to 55% absorption biga) which after the fermentation period is placed into the mixer and mixed with all of the other ingredients at the same time to produce the desired dough characteristics.

Tom Lehmann/The Dough Doctor

1155

/ Re: Opening a NY Style Sliceshop

Why not just place a full size deck oven right behind the counter, you will have greater capacity, more consistent temperature and in my opinion it will look more "professional". I've seen this done many times with great success.

By the way, Marsall deck ovens would be a an option to look at for this application as they have a thick deck for storing a lot of latent heat which you will need for quick reheating of the slices. I'd also go with gas if at all possible, as it's much more efficient and actually gives a better bake.

Tom Lehmann/The Dough Doctor

1156

/ Re: Pizza aerobics

However, if you are asking about how the factors involved in making dough for consumption which can be tossed as seen in the video, the factors are:
2 to 2.5% salt.

Flour with a high protein content.

Optimum dough absorption, NOT MAXIMUM, probably in the 58 to 60% range.

Optimum dough fermentation for the yeast level employed.

It is interesting to note that in the video we see the dough balls being partially opened using a pastry pin prior to hand tossing, this is important as it provides a more uniform thickness dough skin, without thin spots, which makes it MUCH easier to toss without tearing. You have heard me advocate this many times for those who might be "toss challenged".

The real key here is to mix the dough just until it develops a smooth appearance and then allow biochemical gluten development to develop the gluten for you. This results in a strong and extensible gluten structure as opposed to mixing which develops a more elastic gluten structure.

Tom Lehmann/The Dough Doctor

1157

/ Re: Need help with biga dough

The dough looks like it can take another 2 to 3-minutes of mixing, but what you have is indeed much improved.

Tom Lehmann/The Dough Doctor

1158

/ Re: Refurb Commercial KitchenAid 8Qt

That metal clicking, like "tink, tink, tink" is the agitator hitting the bottom of the bowl. With the bowl in the fully raised position run the mixer through each of the gears, if you get the same tinking sound you will need to adjust the bowl to agitator clearance, if you don't get the tinking sound with an empty bowl but only when there is dough in the bowl the bowl tabs aka "ears" are worn and not locking the bowl down securely allowing the pull of the dough to lift the bowl slightly which allows the agitator to contact the bowl bottom. Try holding the bowl down securely in place while mixing a dough, if the tinking sound goes away you know what the problem is. A little bit of this isn't a big issue for now, but over time the bowl locking pins will wear and the problem will get worse eventually leading to the bowl jumping off of the arms while a dough is being mixed. I've seen this on any number of mixers over the years, the only real solution to the issue is to either replace the pins or get a new bowl, or both. Some of the smaller mixers (N-50) used to be equipped with a locking mechanism to lock the bowl onto the pins (all of the large mixers have them but many of the smaller mixers don't). The locking mechanism used on the small mixers differs from those used on the large mixers in that it is shaped like a flat hook which is fastened to the bowl arms and moves laterally so as to swing over the top of the bowl tabs thus locking the bowl down. Your mixer may have once had them or it may be possible to retrofit these locks onto your mixer thus preventing further wear.

Tom Lehmann/The Dough Doctor

1159

[/ Re: In cold fermentation, does it matter when I ball the dough?](#)

I'd go with 0.15 to 0.2% IDY with your dough management process. Using my dough management process I normally use 0.3%.

Tom Lehmann/The Dough Doctor

1160

[/ Re: Over fermentation issues \(CY or Flour issue?\)](#)

With regard to weighing the yeast, if your scale will not weigh 1-gram then try this, weigh 5-grams and put it into 50-grams of water, stir well to suspend the yeast in the water and then weigh 11-grams of the suspension. Within that 11-grams of yeast suspension will be 1-gram of yeast. Discard the remainder of the suspension or make some bread with it.

Tom Lehmann/The Dough Doctor

1161

[/ Re: Over fermentation issues \(CY or Flour issue?\)](#)

Are you saying that the dough balls represented in the picture are over fermented?

Tom Lehmann/The Dough Doctor

1162

[/ Re: Almost same formula, 5 times the amount of yeast. Am I missing something ?](#)

Not too shabby! :chef:

Now you can begin experimenting with the dough formula to achieve the characteristics you're looking for which will make it "YOUR" pizza.

Tom Lehmann/The Dough Doctor

1163

[/ Re: Can I fix a dough with too much yeast?](#)

We need to know what your finished dough temperature was, and yes 1% IDY was too much yeast. I would have suggested using 0.25 to not more than 0.3% IDY for a 72-hour fermentation period. You also want to use the SAF (RED LABEL) yeast, NOT the GOLD LABEL, as stated, the gold label is a high sugar tolerant form of IDY BUT it also has a very low tolerance to salt. Typically we see a slowing of fermentation rate when salt levels above 1% are used with this type of yeast. My guess is that your finished dough temperature was too high which would explain the fermentation rate which you were experiencing, a good finished dough temperature to target is 70 to 75F/21.1 to 23.8C.

Tom Lehmann/The Dough Doctor

1164

/ Re: Almost same formula, 5 times the amount of yeast. Am I missing something ?

Can you provide us with a photo of the over proofed dough balls? Too bad the video didn't show a fast forward of the dough balls after 6 to 8-hours.

Tom Lehmann/The Dough Doctor

1165

/ Re: Mini lightbulb question

Matt;

Go to Bulbtown@bulbtown.com/<www.bulbtown.com> to see what they have in their very vast inventory of bulbs. In addition to a huge selection their prices are very good too, we buy all of our landscape light bulbs from them.

Tom Lehmann/The Dough Doctor

1166

/ Re: Over fermentation issues (CY or Flour issue?)

With 0.5% CY and 60% dough absorption and less than 24-hours total fermentation time the dough should not be over fermented however that doesn't mean that the flour/flours that you are using have sufficient fermentation tolerance to allow the dough to be fermented for more than about 12-hours. A quick way to test for this is to replace your existing flour blend with 100% bread type flour, if the dough performs better you will know what the issue is. This is based on the assumption that you have the finished dough temperature under control in the 75 to 85F range, if the dough is any warmer than this it can accelerate the fermentation rate resulting in the potential for dough collapse.

Tom Lehmann/The Dough Doctor

1167

/ Re: In cold fermentation, does it matter when I ball the dough?

Only if the total dough weight is 20-ounces or more.

Tom Lehmann/The Dough Doctor

1168

/ Re: Sicilian, Detroit and Chicago deep dish pans in Germany

The non-stick finish on the Lloyd's Pans WILL NOT come off. We used them for MANY years and never had a problem with the finish, I used to demonstrate the durability of the finish (you can do this yourself) by rubbing the edge of a quarter briskly across the pan, the quarter would be abraded as demonstrated by a flat spot where it was rubbed on the pan but absolutely NO damage to the pan or its finish. I can also show you pans that have been in commercial (pizzeria) use daily for over 10-years and the finish is still intact. If you want some pans without any finish on them you might look into cake pans, these are usually available in steel or aluminum, remember though that you will need to season these pans prior to use and you will need to be highly protective of the seasoning by never soaking the

pans in soapy water or allowing them to remain wet for any length of time, failure to do this will result in the seasoning coming off of the pans like a bad sunburn, you will then need to strip all of the seasoning off of the pan and start all over again. One last thing, with the Lloyd's pan, it will need to be washed (soapy water will not harm it) prior to the first use, it should then be lightly oil for the first bake, after that the use of oil in the pan is optional. We always use a light application of oil for the deep-dish pizzas but never oil the Lloyd's disks for thin crust pizzas. To clean the pans and disks just wipe them off using a clean towel and they're ready for the next use.

Tom Lehmann/The Dough Doctor

1169

[**/ Re: Your favorite Instant Pot recipes**](#)

From the title of the post I was expecting this to go in a totally different direction.
:-D

Tom Lehmann/The Dough Doctor

1170

[**/ Re: In cold fermentation, does it matter when I ball the dough?**](#)

The benefits of bulk fermentation are essentially non-existent with such a small size dough. You could just as easily scale and ball the dough right after mixing and I'm betting you would get the same results. Your IDY percent is OK for up to about 3-days cold fermentation. Try this, after mixing, scale and ball the dough, cold ferment for 3-days, remove from the fridge and allow to warm until the internal temperature of the dough ball reaches 60F/15.5C before you begin opening it into a skin.

Tom Lehmann/The Dough Doctor

1171

[**/ Re: In cold fermentation, does it matter when I ball the dough?**](#)

Please refer back to my above post.

Tom Lehmann/The Dough Doctor

1172

[**/ Re: Correlation between hydration and cook temp and time**](#)

The research that we did at AIB indicated that a dough which expands more during baking (increased oven spring), for whatever reason (including increased dough absorption) will produce a crispier finished crust. In a deck oven or stone hearth oven the crust is being baked at a much higher temperature than the toppings due to the evaporative cooling effect of moisture in the sauce and toppings.

Tom Lehmann/The Dough Doctor

1173

/ Re: Cant Decide between rocker knives

From personal experience I personally like the Rocker Knife (PKR20) because it seems to work better with deep-dish pizzas than the (PPK17) and it cuts all the way through the edge crust better on thin crust pizzas but in the end I think it all comes down to personal preference.

Tom Lehmann/The Dough Doctor

1174

/ Re: When to add the oil

JPChicago;

The delayed oil mixing method was not used in bread production during the time your father was employed in the baking industry as the type of fat used in wholesale bread making at the time was either a plastic fat (shortening) or liquid bread shortening both of which really don't require a delayed addition like vegetable oil does. Today vegetable oil is much more commonly used and it is metered into the horizontal mixer at the end of the first minute of mixing.

As a side note, I'm also from Chicago (far south side) Tinley Park. During the very early 60's I worked in the Jewel Tea Bakery, 1955 W. North Avenue, Melrose Park, IL. There was also Burney Bros. Bakery, Sara Lee Bakery, Gonella Bakery and a sweet goods/pastry bakery whose name I don't remember anymore as well as two bun plants which made buns for McDonalds. Just out of curiosity, can you share with me what years and which bakery your father worked at?

Tom Lehmann/The Dough Doctor

1175

/ Re: In cold fermentation, does it matter when I ball the dough?

It is impossible to fully answer your question without knowing a lot more about the dough in question which is probably why you have had a problem finding a definitive answer, and even then the answer will be specific only to YOUR dough. The factors which would influence the answer to your question would include such things as;

Dough formulation.

How and how much the dough has been mixed.

The finished dough temperature.

Size/weight of the total dough as well as the weight of the individual dough balls.

Type of container(s) used to ferment the dough as well as the dough balls in.

The strength of the flour.

Actual room temperature.

Tom Lehmann/The Dough Doctor

1176

/ Re: Blitz Pastry method?

Whereas Danish butter is relatively pliable even when taken right out of the fridge and it doesn't melt like our regular domestic butter does. The Lakpur brand is what we have available to us here in Manhattan, KS. Once you try it in pastries you will

never use domestic butter again.
Tom Lehmann/The Dough Doctor

1177

/ [Re: Using oil to intentionally weaken dough](#)

But, keep in mind that when using the delayed oil addition method of mixing the gluten development isn't impaired.
Tom Lehmann/The Dough Doctor

1178

/ [Re: Need help with biga dough](#)

Try this, after allowing the biga to ferment overnight add the remainder of the water to the mixing bowl along with the salt (no need to mix), then add the remainder of the flour (all of it), and mix at low speed until the biga and flour are incorporated, then mix at a higher speed for at least 5-minutes. Let me know what the dough looks like.
Tom Lehmann/The Dough Doctor

1179

/ [Re: Pizza Hut pan specifications](#)

I just checked my pans, you are correct. The pans are tapered.
Tom Lehmann/The Dough Doctor

1180

/ [Re: Using oil to intentionally weaken dough](#)

The purpose of adding oil is not to hinder gluten formation but instead to provide flavor both directly (flavor of the oil) and indirectly (oil holds/retains flavors). It also lubricates the dough for improved expansion properties as well as coating the cell structure for improved gas retention both of which result in better oven spring. Oil also exerts a tenderizing effect upon the crumb resulting in a less chewy finished crust which is achieved through the lubricating effect as mentioned above. Old school is to add the oil to the water and mix together (why?) it will not form an emulsion. The oil immediately separates from the water and floats to the top of the water, when the flour is added the oil is absorbed into the flour rendering a portion of the flour incapable of forming gluten which leads to perceived inconsistencies in dough absorption and very real differences in dough handling properties. By using the delayed oil addition mixing method the water is added first (salt and sugar can be added to the water if desired) and then the flour is added along with the yeast, it is then mixed until no dry flour is observed in the bottom of the mixing bowl, the oil is then added and incorporated while mixing at low speed, once the oil is incorporated at low speed the dough is mixed at a higher speed to develop the gluten to a point where the dough takes on a smooth, somewhat satiny appearance. This is all the gluten development needed or desired for pizza dough production that will be further subjected to a period of fermentation. Putting oil into an

autolyze is, in my opinion counter productive since the function of an autolyze is the achieve better hydration of the flour, this is especially so when high dough absorptions are employed.

Tom Lehmann/The Dough Doctor

81

[**/ Re: Question about cutting the pizza**](#)

If you REALLY want to see what the crumb structure looks like do as we did when we did our research on pizza, turn it over and cut it from the bottom up using a razor knife or a VERY SHARP serrated knife. This way you do not drag the sauce and cheese down over the crumb as you do when you cut the pizza from the top.

Tom Lehmann/The Dough Doctor

82

[**/ Re: Bottom not cooked?**](#)

It sounds like you are not allowing sufficient time between bakes to allow the stone to fully recover its latent heat (in short, the stone is cooling off). If your oven has bottom heating elements you will need to move the stone closer to the heating element to speed up the recovery time or get a thicker stone, maybe a baking steel. It looks like you are using a "00" flour so you may find that you will need to increase the sugar level to achieve top crust color after moving the pizza stone closer to the bottom heating element. Assuming that you are allowing at least an hour for the stone to fully heat up?

Tom Lehmann/The Dough Doctor

83

[**/ Re: Low amylose flour?**](#)

The only work that I've been involved in with amylose, not high amylose (starch) flour was in research on low calorie bread back in the days of low calorie breads in the early 1970's. Since amylose is a resistant (non-digestible) starch we were looking at it as a possible substitute for micro-crystalline alpha cellulose in making bread similar to the then popular New Horizons low calorie bread. We don't fully understand the bread staling phenomenon even today. It has been shown to be at least partially due to retro-gradation (crystallizing) of the starch while other studies have implicated the protein fraction of the flour more than the starch fraction. Some of the more effective enzyme anti-staling agents used in white pan bread production are based on the starch model. These use a heat resistant amylase enzyme to hydrolize a portion of the starch in the baked bread, thus releasing its bound water making for a softer, more moist crumb structure which the consumer perceives as being less stale. Since a resistant starch would resist being hydrolized it would remain intact, acting more like a fiber than a starch, hence, there is less starch present to participate in the staling process. I would guess if it's a softer pizza that you're after this might be something to look at in greater depth. I've never looked at staling as an obstacle to be over come with pizza since many of the characteristics of staling are the same characteristics that we are trying to achieve in pizza. Take par-baked crusts for example, most would

agree that they make pretty decent pizza (both thick and thin crust), a crust can't get much more stale than a par-baked one and yet we still think it's pretty good in many cases.

Tom Lehmann/the Dough Doctor

84

[/ Re: Rounder and divders](#)

Scott;

Not that I'm aware of, by design they all round a pretty tight ball. The rounding bar is the only truly adjustable rounder but when getting a lose ball you also get a poorly rounded ball.

Tom Lehmann/The Dough Doctor

85

[/ Re: Which are the factors that affect digestibility?](#)

That's correct, there is indeed calcium in the mozzarella cheese too but it doesn't interact with the sauce in the same manner as a fine powdered cheese does, just like swallowing a piece of chalk doesn't work as well as drinking the milk. Which is probably why they don't say to eat a piece of cheese to counter the effects of ingesting an acid or alkali as much as we might like to it just doesn't work as well :-D.

I use Parmesan and/or Romano as I'm always trying to up the flavor profile of the mozzarella cheese. If I'm not worrying about the acidity of the sauce my preference is to use shredded Parm and/or Romano in addition to the mozzarella.

Tom Lehmann/The Dough Doctor

86

[/ Re: Newbie with a sauce question](#)

My all time favorite is just Stanislaus 7/11 Ground Tomatoes (with peel). Use it straight from the can with nothing added, then add a little fresh basil (sliced into strips) and maybe a little crushed garlic over the top of the sauce, add the cheese and dress to the order. DO NOT add any garlic or onion product to the sauce! This will act as a catalyst resulting in gelling of the tomato pectin within 24-hours. If you JUST GOTTA have garlic or onion in the sauce put it in a small amount of oil and nuke it to over 190F to deactivate the enzymes responsible for the gelling of the tomato pectin, then add it. I don't like doing this as it potentially reduces the flavor impact of the onion/garlic.

Tom Lehmann/The Dough Doctor

87

[/ Re: Which are the factors that affect digestibility?](#)

I got the idea to pursue this about 25-years ago when I was reading an article on what to do if someone ingests different poisonous/harmful materials. One of the things mentioned in the article for acids or caustics was to drink milk as the

calcium content works to buffer the acid or alkali, this got me to thinking about the acidity of the tomatoes, and sure enough it appears that the calcium content of the cheese works in a similar manner to that of whole milk as it also seems to buffer the acidity of the tomato in the sauce and the flavor is right at home on a pizza too. Just goes to show ya, answers to problems can often be found in the darnedest places.

Tom Lehmann/The Dough Doctor

88

/ [**Re: New member from Arkansas**](#)

Does Combs, St. Paul or Pettigrew ring a bell with you? Just wondering (they're in N.W. Arkansas).

Tom Lehmann/The Dough Doctor

89

/ [**Re: Dough is out of control!!**](#)

My guess is that the dough was over fermented to the point where it was becoming "bucky", when it's like that the dough will exhibit very elastic properties with any work put into it, like trying to open the dough into a skin. Best thing to do in a case like that is to re-ball and play the waiting game until the dough relaxes again which will allow it to be opened into a skin relatively easy.

Tom Lehmann/The Dough Doctor

90

/ [**Re: Which are the factors that affect digestibility?**](#)

If the pizza has a crispy crust it has to be somewhat dry resulting in some thirst....hence its popularity as a bar food. Eat pizza = drink more beer! ;D

If you use a tomato based sauce it's always going to be a bit acidic as tomato is an acidic fruit. You can tone this down a little by adding a powdered cheese (Parmesan & Romano) to the sauce. The calcium content of the cheese helps to balance the acidity of the tomato.

Tom Lehmann/The Dough Doctor

91

/ [**Re: Rounder and divders**](#)

The Dutchess divider/rounder machines aka "shaker machines" are great machines and have been around for a very long time. ^^ I see you have the steel plattens (as they are called), these are (in my opinion) better than the plastic ones. When set-up to do a 36-piece divide& round they are the industry standard for making small scale hamburger and hot dog bun production runs. :chef:

Tom Lehmann/The Dough Doctor

92

/ Re: Effect of hydration; is there a simple answer?

With those conditions the dough will not be properly baked out, so in that case I would expect to find that it has an alcohol aroma, the same would be said for raw dough which the dough that you've described is just half a bubble off of.

Tom Lehmann/The Dough Doctor

93

/ Re: Higher hydration doughs

No, not always. Flour characteristics, dough formulation, fermentation and bake will be the major contributors to chewier eating characteristics.

Tom Lehmann/The Dough Doctor

94

/ Re: Dough is out of control!!

While you're at it get yourself a dial/stem type thermometer too as you will want to have one so you can measure the water and dough temperatures. Additionally, do you have an oven that gets hot enough to bake a pizza made with "00" flour? The oven needs to be able to reach temperatures north of 750F, if not, you would be better served using a domestic bread type flour.

Tom Lehmann/The Dough Doctor

95

/ Re: Effect of hydration; is there a simple answer?

Even when alcohol is added to the dough, such as in the case of making a beer crust, there is no additional residual alcohol in the finished crust....it's that volatile.

Tom Lehmann/The Dough Doctor

96

/ Re: Yeast donuts recipe?

You're going to have to experiment to find out. The key is in having sufficient R.H. to prevent a skin/crust formation on the dough. A good way to do this at home is to place a wet towel in the area where the donuts will be proofed (an insulated ice chest works well) and prevent exposure to drafts.

Tom Lehmann/The Dough Doctor

97

/ Re: New member from Arkansas

Welcome!

Whereabouts in Arkansas?

Tom Lehmann/The Dough Doctor

[/ Re: Advice on the moment of balling and delayed oil](#)

Sandruz;

Just confirming that you are pre-hydrating/activating the ADY prior to addition and not just adding it dry as you would IDY. You can save yourself some work by doing the following:

- 1) Add the ADY suspension to the dough water and mix into all of the flour.
- 2) Add the salt directly into the flour in step #1 above.
- 3) Mix the dough at this point until it just until all of the flour has been whetted, then add the oil and mix for 1 additional minute at low speed, then mix at medium speed just until a smooth dough appearance is achieved.
- 4) You're not going to see much, if any difference between "bulk" and ball fermenting with such a small dough size so you could ball and CF after 50-minutes room temperature fermentation if you wish.

Note: This all based on the assumption that you are machine mixing.

Tom Lehmann/The Dough Doctor

[/ Re: Autolyze experiments](#)

The preferred way to add IDY is to add it to the dough after a few minutes of mixing providing that the dough will be machine mixed for a minimum of 5-minutes after the IDY has been added. The second preferred method, and possibly the most used, is to add it directly into the flour. By design, IDY hydrates very quickly (that's where the "I" comes from), so it is easily damaged if not properly hydrated (95 to 100F water). Yeast will exhibit about a 20-minute lag phase after addition before it begins to actively ferment in a dough environment at a temperature between 70 and 85F.

Tom Lehmann/The Dough Doctor

[/ Re: Autolyze experiments](#)

An autolyze is necessary when using whole-wheat flour or any type of multi-grain blend (lots of discussion on this), and it is also useful when working with high absorption doughs (over 70%), as well as when mixing the dough entirely by hand. When machine mixing I've never found any great advantage to using an autolyze. In my world an autolyze is what the old time bakers used to refer to as a "soaker" consisting of just flour and water. As soon as you put yeast into the picture you no longer have an autolyze, but instead you now have what's called a biga, a sponge or a brew. It has a very different effect on the flour than an autolyze.

Tom Lehmann/The Dough Doctor

[/ Re: Need help with biga dough](#)

Please share your entire dough mixing process.

Tom Lehmann/The Dough Doctor

1182

/ [Re: Pizza Hut pan specifications](#)

It's a straight sided pan. The deeper pan allows for better protection of the toppings from getting scorched during baking. You might also want to get a deep pan gripper while you're at it too. A 1-inch wide flexible blade cake decorating spatula is the preferred tool to use for running around the side of the pizza and to help glide the pizza out of the pan. DO NOT USE A KNIFE!

Tom Lehmann/The Dough Doctor

1183

/ [Re: Recipe for dough with 100% biga](#)

You have a biga and you have a dough, I will assume that you want to use all of the flour in the biga and none in the dough side. I will also assume that you want to ferment the biga for 24-hours at room temperature/ambient (whatever that might be), based on these assumptions I would suggest using 0.25% CY in biga #1; 0.15% in biga #2 and 0.1% in biga #3. For IDY use only 40% as much IDY as you did CY.

Tom Lehmann/The Dough Doctor

1184

/ [Re: Need help with biga dough](#)

Nothing if the picture is of the biga, if it is of your dough its under mixed.

Tom Lehmann/The Dough Doctor

1185

/ [Re: Grande Cheese \\$25 for 5lbs? Is it worth it?](#)

As a reference most pizzerias are paying around \$3.00 plus change per pound for Grande shredded.

Tom Lehmann/The Dough Doctor

1186

/ [Re: Pizza Hut pan specifications](#)

We used to have a bunch of old P.H. pans at AIB. They were nesting pans with a horizontal line indented in the pan about 5/8-inch above the bottom of the pan, this was the height to which they would proof the dough to.

Tom Lehmann/The Dough Doctor

1187

/ [Re: Considerations when adding chia, flax, other seeds to dough?](#)

No, it's not just in your head. You are spot-on. Anytime non-gluten forming flours are added we always use a sufficiently strong flour to make up for the dilution of the gluten by the non gluten forming flour(s).

Tom Lehmann/The Dough Doctor

1188

[**/ Re: Recipe for dough with 100% biga**](#)

Please excuse me for my confusion, but a "biga" made with 45% absorption, wouldn't it be a sponge rather than a biga? I normally think of a biga as being made with 60% absorption or more.

You mention adding water until the dough is 65% hydrated but what is the total dough absorption? For example, if the total dough absorption is 68% and you add water until it is 65% hydrated wouldn't you be adding just 65% of 68 or 44.2% absorption? Or maybe the use of the word "hydrated" is incorrect in this instance and maybe you mean 65% absorption? To answer your question regarding the yeast amounts we would need to know at what temperature you plan on fermenting the biga at.

Tom Lehmann/The Dough Doctor

1189

[**/ Re: Is my dough still good**](#)

It certainly can as the diastatic malt will convert starch into fermentable sugars but 2% is a high dose of diastatic malt, if you are experiencing stickiness of the dough it is most likely due to the high malt level, in that case just begin backing it down to eliminate the stickiness.

Tom Lehmann/The Dough Doctor

1190

[**/ Re: Mixing Times**](#)

Measure the internal dough ball temperature at the time of opening, by doing this you will be able to temper the dough ball to this same temperature any time of the year, regardless of room temperature and the dough will always perform/handle in a similar manner. Most pizzerias allow the dough ball to reach 50F before opening but many home pizza makers will allow it to reach a higher temperature with 60F being a pretty common temperature, just remember that the higher the dough temperature the more difficult it can be to open if you are not proficient at opening a dough ball into a skin.

Tom Lehmann/The Dough Doctor

1191

[**/ Re: Is my dough still good**](#)

3 to 4-days is what one might refer to as the suggested optimum, it can still be good to use for some time after that. It all depends upon how well the dough was refrigerated as well as the freshness of the CY and the strength of the flour.

Tom Lehmann/The Dough Doctor

1192

[**/ Re: Considerations when adding chia, flax, other seeds to dough?**](#)

For bread you are going to have a tough time with a 50/50 mix, I suggest starting with a 65/35 blend (35% being the seeds). You will need to pre-hydrate the seeds prior to addition to the dough. If you will go back into the archives you will find where I've provided instructions on how to find the optimum absorption for the multi-grain blend of a multi-grain dough. It's important to get this right as it will have a huge impact upon the finished bread quality as well as the quantity of seed that can ultimately be incorporated into your dough. Remember to develop your seed blend first, then do the absorption determination, if you change the seed blend composition the absorption will change and you will need to find the absorption of the new blend.

You will also want to keep your total dough fermentation time on the short side (6-hours?) and is adding a sour don't get too heavy handed as both fermentation and the sourdough starter will weaken the dough making it more difficult to carry the seeds without collapse.

Tom Lehmann/The Dough Doctor

1193

[**/ Re: Blitz Pastry method?**](#)

Sure, Any regular dough formula will work for this WITH the following changes;
1) Increase fat content to 10% in the form of butter or margarine (Danish butter works far better than any other type of butter).

2) Freeze the butter and cut into peanut size pieces (keep frozen).

3) Mix the dough as you normally would (just until smooth), then add the butter and mix in just until the butter pieces are incorporated into the dough). In don't mean as a part of the dough, you just want to have the butter pieces incorporated as pieces in the the dough).

4) After mixing, turn the dough out of the bowl and sheet the dough using a rolling or pastry pin to about 1/2 to 3/4-inch thickness and give it a 4-fold (Google it if you don't know how), then cover with a sheet of plastic for 20-minutes and give it a 3-fold and wrap in plastic and refrigerate for 24-hours.

Remove dough from fridge and allow to warm to 55F, then sheet out to desired thickness (3/16 to not more than 1/4-inch thick, unless you're making a pan style pizza, then sheet it to 1/2-inch thickness) cut to desired diameter, dock with a blunt dough docker, dress and bake.

This will give you a crust similar to the old Tony's Italian Pastry Style Crust (frozen pizza).

Tom Lehmann/The Dough Doctor

1194

[**/ Re: Is my dough still good**](#)

That's my kinda pizza! Looks GREAT!

Tom Lrhmann/The Dough Doctor

/ Re: Local opinion piece, bleached vs unbleached

I was in charge of the Experimental Baking Group at AIB when the bromate thing hit the fan and we all had a good idea of what was to follow so we embarked on a rather lengthy study both in-house and through collaboration with the baking and allied industries to find an acceptable substitute for potassium bromate. The study continued for several years and during that time we all learned a lot about how different dough strengtheners work both by themselves and when used in combination with other dough strengtheners. Today we (the baking industry) have some excellent oxidative enzyme type dough strengtheners to work with as a replacement for potassium bromate but for the most part they are only used in very specific applications such as frozen dough and some specialty breads and are not generally in wide use for a couple of reasons such as:

1) We found that bromate really wasn't needed except in continuous mix bread aka batter whipped bread (common in the 50's and 60's), instead it was being used as a crutch to help maintain product quality with less than stellar performing flours available at the time.

2) Wheat breeders were developing new and stronger wheat varieties for the then popular continuous mix bread processes BUT as continuous mix bread fell from popularity (rightfully so) by the early to mid 70's the baking industry had flour being supplied to it by the millers that was too strong for the bread making process which replaced continuous mix bread, the sponge and dough bread making process. In some bakery plants they used a flour brew process where 30 to 40% of the flour was fermented in the liquid brew (think biga), in this case the new flour created even more issues as the brew flour could not be increased above 40% due to gluten separation so the finished breads were always showing signs of excessive strength (too much volume/height and wild break and shred) were critical issues as the faults interfered with high speed bagging of the bread.

3) Issue #2 above was of the highest critical nature to the baking industry at the time (we also worked on that too as we began researching ingredients known as "reducing agents") which included things like L-cysteine, glutathione aka dead yeast, various vegetable powders (onion and garlic), potassium sorbate and a few others). With #3 resolved, the baking industry seemed to settle down and began making decent bread once again and with the stronger flours available they soon learned that bromate really wasn't all that necessary so when the bromate replacers became available they were pretty well met with a yawn except for a few specialized applications like the frozen dough previously mentioned.

4) Due to the growing consumer concerns over the use of bromate most bakeries readily deleted bromate from their dough formulas with no ill affects to finished product quality.

Today flour can still be had that is bromated but there are strict Federal guidelines limiting how much bromate (in total) can be used. For the most part we can buy flour in 50# bags that is either bromated or non-bromated, your choice. As a side note, Interstate Brands Corporation Bakeries began producing a white pan bread which they called "Grandma's Bread" this bread was unique for the time in that it was made with a non-bleached flour, this means the flour had a natural creamy/yellowish color and the finished bread had a corresponding yellowish crumb color, they opened the gap on their sheeting rolls at the moulder for a

slightly more open crumb structure and a whole new direction was created for white pan bread, that was one of "old fashion", like grandma used to make. From that point on most flour being shipped to bakeries was now un-bleached. This still exists to this day.

It's really fun and interesting to see all of this unfold especially when you're in the thick of it and in some way you realize that history is being made before your very eyes and you're a part of it.

How sad to see AIB go the way of the DODO BIRD as no one will ever be able to have such great exposure in the future.

That's our trivia lesson for the day.

Tom Lehmann/The Dough Doctor

1196

/ [**Re: Describing the feeling of finished Dough**](#)

So? where did the numbers come from?

The formula of 140 minus flour temperature = water temperature is correct for doughs having a targeted finished dough temperature in the 82 to 88F range. It comes from the Red Star "Directions for Use Guide doe Instant Yeast".

The 130 minus flour temperature = water temperature is correct for use with doughs having a targeted finished dough temperature in the 70 to 78F range.

As there are so many variables involved with mixing a dough one has to keep in mind that these formulas are not precise but they will get you close to the temperature range you want your finished dough temperature at. This will allow you to easily adjust the water temperature (in 5F increments) for following doughs to zero in on the exact water temperature needed to give you the desired/targeted finished dough temperature you want for YOUR specific dough formula mixed in YOUR mixer in YOUR kitchen/shop.

Tom Lehmann/The Dough Doctor

1197

/ [**Re: Is my dough still good**](#)

Don't worry about the black spots, if anything the dough actually looks to be a bit under fermented.

Tom Lehmann/The Dough Doctor

1198

/ [**Re: Sourdough Bread Machine Flour Mix**](#)

Just guessing, 0.375% IDY and 62% dough absorption.

Tom Lehmann/The Dough Doctor

1199

/ [**Re: Describing the feeling of finished Dough**](#)

How in the world do you come up with 130F water temperature? 145 minus flour temperature (45F) = 100F water temperature. If you are using flour right out of

the fridge you might be better off bringing it out the day before you plan on using it and putting it in a bowl to warm to room temperature. The warmer flour will hydrate much better and more quickly during the mixing process which is better suited to the high speed mixing of a food processor.

Tom Lehmann/The Dough Doctor

1200

/ Re: Local opinion piece, bleached vs unbleached

It would read better if he/she knew what the hXll he/she was talking about!

1) Need to study up on why bleached flour became popular in the U.S.

2) KBRO3 is indeed a known carcinogen but but it is converted to bromide (which is safe) during the baking process and KBRO3 was never detected, then in the 1970's the Japanese perfected a test procedure that could detect KBRO3 in ppb (parts per billion) not ppm (parts per million) as previous tests could detect. They found trace amounts (ppb) of residual KBRO3 and it was immediately banned in many countries. Today the legal limit for KBRO3 is 15-ppm at which level residual even at ppb cannot be detected.....argument: "but that doesn't mean it isn't there". By that logic I guess we should stop eating eggs and ground meat since both are assumed to be E-coli positive (now you know why you should not eat raw/under cooked hamburger or eggs, yes that includes cake and cookie batter too (no more licking the bowl). But wait, doesn't cooking kill the bacteria? Yes it does, but does it kill 100% of it? You won't know for sure unless you test what you are about to eat, so lets just avoid eating ground meat and eggs as well as anything made with them. This seems absurd to me, in view of what is in our drinking water, in the pure city air which we breathe, in the city swimming pool (speak of chlorine), how about the mercury in the ocean fish that we eat? It just goes on and on and on, I for one, decided a long time ago to cut my losses and stop worrying about the foods that I eat, I believe in redeeming social value, by this I mean I select foods that are known to be more nutritious such as whole wheat breads/flours, etc. and I really don't care much about the "additives" in them, I eat potatoes but always order with the skin on if possible, I never peel an apple (not even when making apple pie), I drink juices with the pulp (fiber is good for us). Worrying about too many things will give you high blood pressure or an ulcer and in my world those are also dangerous and should be avoided too.

Eat and drink in moderation and be merry!

Tom Lehmann/The Dough Doctor

As for being banned in Europe, true, it is, but then so is aluminum as it pertains to any kind of food. Why? Because a researcher found aluminum in the brains of persons who had died with Dementia so aluminum (yes pots and pans too) were immediately banned. We've all seen pock marked aluminum pots and pans, now you know where all that aluminum went! False! It doesn't quite work that way, and the aluminum found in the brain matter was discovered to be normal

1201

/ Re: Describing the feeling of finished Dough

John;

Do you mix to temperature or time?

Tom Lehmann/The Dough Doctor

1202

/ Re: Describing the feeling of finished Dough

If the dough is over fermented you will find that the dough is too extensible, it may also be sticky and it can collapse under the weight of the topping ingredients resulting in a tough, chewy finished crust. If the dough is REALLY over fermented it will become "bucky" (difficult to stretch without it tearing), it may also exhibit excessive memory characteristics at opening resulting in the dough continually snapping back, note that under fermentation will impart a lot of the same characteristics as excessively over fermented, the main difference being that the under fermented dough generally doesn't tear as readily.

Tom Lehmann/The Dough Doctor

1203

/ Re: Sourdough Bread Machine Flour Mix

It appears to be an inactive sour which is designed to provide a flavor only (hence the need to add yeast). We recently had some discussion here on a similar product from Red Star.

Tom Lehmann/The Dough Doctor

1204

/ Re: Dough Doctor's Basic Dough Recipe

I think your problem stems from the use of a sheeter to open the dough. The sheeter at least partially degasses the dough and at the very best creates a small, bread like cell structure in the dough (in fact, this is exactly how we get that nice, small/fine crumb structure in white sandwich bread). There are a few things that you can do to achieve the characteristics that you are looking for, first is to optimize the dough absorption. To do this begin increasing the dough absorption by 5% (from the appearance of your dough it appears to be a bit low in absorption for what you are trying to achieve) then make 2% adjustments after that if necessary. The softer dough will more readily expand during the proofing period and during the oven spring phase of baking. If your final proofing time is still too long (more than 75-minutes) increase the amount of IDY to 0.4%. I don't know what you are looking for in the finished crust but for a pan style pizza your dough looks to be kinda thin in the pan so you might also want to experiment with trying a heavier dough weight in combination with the above recommendations. I'd suggest trying a couple pizzas each with a dough weight of 18, 20 and 22-ounces. With the heavier dough weight you will get a more pronounced raised edge during the baking process if that's what you are looking for.

By the way, when I make deep-dish pizza my dough scaling weight for a 12-inch pan is 16-ounces which is a dough loading of 0.14159 (ounces of dough per square inch of pan surface area), based on this I would use 21.8-ounces of dough in a 14-inch pan.

Tom Lehmann/The Dough Doctor

1205

[/ Re: Dough Doctor's Basic Dough Recipe](#)

What is the dough weight that you're using for that pizza and what is the diameter? After the CF period are you allowing the dough balls to come up to at least 50F before opening them?

It appears that you are opening the dough using a sheeter, is this correct?

The pan shown appears to be a 1-inch deep pan, what is the target thickness for the finished crust?

I have an idea of what the issue is but I just need a little more information.

Tom Lehmann/The Dough Doctor

1206

[/ Re: Dough Doctor's Basic Dough Recipe](#)

Your problem could be due to insufficient yeast, excessive salt, insufficient sugar for the dough management procedure being used and probably a few other things too but I could do a much better job of answering your question if I could see your entire dough formula as well as dough management procedure.

By the way, when mixing large doughs like that we typically have to use 65 to 70F water temperature. A quick and easy way to find the desired water temperature is as follows: 145 minus flour temperature = water temperature for a finished dough temperature in the 80 to 85F range.

Tom Lehmann/The Dough Doctor

1207

[/ Re: Mixing Times](#)

Josh;

Many home type mixers are actually pretty efficient at mixing dough so don't count them out as inefficient, also we can make up the difference in time by mixing at a higher speed (more r.p.m.). While mixing is important from a commercial point of view in that it allows for faster, easier handling of the dough (a sticky dough really bogs things down in a pizzeria when we're trying to scale and ball the dough) it is not nearly as critical when making pizzas at home as we are dealing with only a few pizzas at a time. Remember, the main reason for mixing to get that dry, smooth skin is to facilitate dough handling only. If you don't mind putting up with a sticky or tacky dough you could actually stop mixing as soon as the dough forms a ball that doesn't look like "brain matter" about 5-minutes into the mixing process after adding the oil.

We teach a true no-knead mixing process to home bakers and it involves mixing with a wood spoon, no kneading or anything else. The resulting dough looks like oatmeal, it is transferred to an oiled bowl, the dough itself is lightly oiled, it is then covered with a piece of plastic and allowed to room ferment for 2 to 3-hours, it's turned out of the bowl, kneaded a few times and balled then placed back into the oiled bowl for another 3-hours. It is then turned out of the bowl and divided into multiple pieces for our pizzas or made into a single pizza depending upon the dough size. The resulting crust eats quite tender and has an open, porous crumb structure. Not too shabby for pizza made at home from a dough that didn't need any kneading. The process also makes great bread too, I normally make round loaves from this dough.

Your proposed method for measuring the temperature in the refrigerator is the same that we used except that we used oil instead of water since it doesn't support microbial growth.

Tom Lehmann/The Dough Doctor

1208

[/ Re: Describing the feeling of finished Dough](#)

Peter;

I'd almost forgotten about that video. What a trip down memory lane! That's an excellent video on the entire dough mixing process as well as dividing and balling/rounding the dough. Can you put the video into the "tool box" for easy future reference? I'm really glad that we got all of our pizza research done when we did, AIB is no more, and I don't know of any research facility that is doing or has interest in doing both basic and applied research on pizza.

Tom Lehmann/The Dough Doctor

1209

[/ Re: Describing the feeling of finished Dough](#)

As soon as the dough has a smooth appearance you're done with the mixing process. Biochemical gluten development will take care of the rest for you during the fermentation process.

Tom Lehmann/The Dough Doctor

1210

[/ Re: stretching and lurching methods](#)

Your pizzas are not round? Nothing wrong with this but it might be indicative of an underlying dough or formulation issue? Is your dough soft and extensible at opening, or does it tend to fight you (too elastic)?

Tom Lehmann/The Dough Doctor

1211

[/ Re: Mixing Times](#)

No, because you are just pushing the top of the dough down so you're still reading the temperature at the top of the dough, plus the area that the IR thermometer is reading (collecting data from) is larger in diameter than a finger poke thus leading to an incorrect reading. The only way we were able to get consistently accurate internal ball temperature using an IR thermometer was to actually cut the dough ball in half and measure the temperature of the center portion. This was the only way we could get meaningful data on frozen dough balls too when we were doing studies on freezing of different type of dough and had to accurately measure the internal ball (core) temperature. The solidly frozen outer shell of the dough ball prohibited us from using a dial/stem type thermometer. We once used a drill to drill an entry hole to insert the stem into, this worked but it was a real pain. Ultimately we used a meat cleaver and a chopping block to split the dough balls in half

allowing us to measure the temperature more quickly using the IR thermometer.
Tom Lehmann/The Dough Doctor

1212

/ [Re: Correlation between hydration and cook temp and time](#)

While not technically the same (Absorption is a characteristic of flour to take up and retain water or other liquid, expressed as a percent of the flour weight) while (Hydration is the ability of flour to absorb water or other liquid, there are two aspects to hydration, 1) Total amount of liquid absorbed and 2) The rate at which it is absorbed) the two terms are used interchangeably by home bakers.

Tom Lehmann/The Dough Doctor

1213

/ [Re: Sauce running through dough](#)

I also just "crunched" your numbers. Your 10-inch skin has 2.80-grams of dough for each square inch of surface area while the 12-inch skin has 2.74-grams. So, if the 10-inch is OK your dough weight for the 12-inch should be 316-grams + change (I'd call it 320-grams), not a big deal, but possibly a contributing factor.

Tom Lehmann/The Dough Doctor

1214

/ [Re: Mixing Times](#)

An IR works fine at the mixer but you will need to use a dial/stem type thermometer to measure the internal dough ball temperature prior to opening.

Tom Lehmann/The Dough Doctor

1215

/ [Re: Mixing Times](#)

CT;

An autolyse probably won't help much if any in this case.

Do Not Mix To Temperature! Instead, mix the dough just until it becomes smooth, then measure the dough temperature. Adjust the finished dough temperature of following doughs by manipulating the water temperature up or down as needed to give you a finished dough temperature in the 70 to 75F range. When adjusting the water temperature move it in 5F increments.

DO NOT allow the dough to warm to room temperature, instead, allow it to warm AT room temperature until it reaches 50 to 60F. If you allow the dough to warm to a higher temperature (like room temperature) the dough will easily become almost too soft to easily work with, sound familiar?

Tom Lehmann/The Dough Doctor

1216

/ [Re: Sauce running through dough](#)

I think your problem is due to the way you are opening the skin. You are opening it with thin spots rather than a relatively uniform thickness across the entire diameter of the skin. You might try partially opening the skin using a rolling pin or pastry pin, open the skin to within about 2-inches of full diameter and then finish opening the skin to full diameter by table stretching. Not knowing your dough weight there is also a possibility that your dough weight is too light for the 12-inch pizza. Typically we see dough weights of 10 to 12-ounces used for 12-inch thin crust pizza skins. Remember, thinner does NOT make for a crispier finished crust. You might try using 12-ounces dough weight just to see if it helps resolve the issue, if it does you can fine tune the dough weight for the type of pizza you're making.
Tom Lehmann/The Dough Doctor

1217

/ [**Re: Is it right formula??**](#)

Wow! With an 18-inch pizza being 26% larger than a 16-inch pizza an 18-inch pizza selling for only a dollar more than the 16-inch is quite buy! Better keep that one under your hat. ;D
Tom Lehmann/The Dough Doctor

1218

/ [**Re: Air Bubbles**](#)

And when you bake your pizzas remember to prevent any char on the crust as that has been shown to have some potential health issues too. Might as well stop breathing the air too or move to a mountain top home where the air is cleaner. Moderation, everything in moderation.
Tom Lehmann/The Dough Doctor

1219

/ [**Re: Dough Doctor's Basic Dough Recipe**](#)

Sure, that's how you optimize the dough absorption for a specific dough formula and management procedure.
Tom Lehmann/The Dough Doctor

1220

/ [**Re: Air Bubbles**](#)

Is the bubble formed inside the crust or under it? What does the bottom of the pizza look like?
Tom Lehmann/The Dough Doctor

1221

/ [**Re: How do you know a dough recipe will be good?**](#)

Steve;

Much of what you are asking can be found in the function of ingredients located in another section of this web site. As you have probably already noticed we don't like to deal with "recipes" more than we have to since a recipe is based on volumetric portions and as such are rather imprecise, whereas "formulas" are based on weight measures and are very precise and repeatable, additionally formulas are usually expressed in "bakers percent" where flour is always expressed as 100% and each ingredient is expressed as a percent of the flour weight. This allows for easy checking of the formula to determine if it is in correct balance and to see if any ingredient might be sufficiently high to impact the dough, dough handling or any of the finished product quality characteristics. Bakers percent also allows for very simple manipulation of the size of the dough while keeping all of the ingredients in correct proportion to the flour weight.

As to why we "tweak" formulas, it can be for a number of reasons such as, to better fit into our specific dough management procedure, to achieve a specific end product (crust) characteristic, to allow the dough to be better opened by a particular method, or to be better baked in a specific type of oven or specific oven conditions.

When I was teaching pizza classes I always told my students that knowing the function of ingredients allows you to effectively steer the dough or finished pizza to the characteristics that you are looking for. Take salt, for example, if the amount shown in bakers percent is less than 1.5% and the complaint is that the pizza crust has a bland or starchy taste the first action to take would be to increase the salt to at least 1.75% and probably not more than 2.5% (this is the normal range for salt addition in a pizza dough). On the other hand, if the yeast level is low and the salt level is high (3 to 3.5%) and the complaint is that the dough is difficult to open (too elastic) the problem is most likely due to the high salt level slowing the rate of fermentation so in the end the dough is not getting sufficient fermentation to properly condition the dough/gluten for easy opening into skins. It's just like steering a car, you know that turning the steering wheel changes the direction of travel we do the same thing with our doughs only in this case our knowledge of the function of ingredients is the steering wheel while the dough and finished crust characteristics are the direction of travel.

If I remember correctly, I believe it was Pizza Today Magazine in which I wrote an entire article devoted to the function of ingredients, maybe Peter can find it in the Way Back Machine?

Tom Lehmann/The Dough Doctor

1222

/ [Re: Is it right formula??](#)

This is precisely why I always tell people to use the "difference" in diameter as a percentage when pricing their pizzas. For example, a 12-inch pizza has 113-square inches of surface area and a 14-inch pizza has roughly 154-square inches, the difference being 41-square inches. If you divide 41 by 113 and multiply by 100 you get 36.28% which simple means that the 14-inch pizza is 36.28% larger than the 12-inch pizza. If you follow this simple math you won't fall victim to the size v/s cost issue shown in the video, remember that the underlying reason for being in business is to make money. Many of my followers have heard me ask a very basic question: "Why do you want to make different size pizzas?" The correct answer to this question is "so my customers can have more of the same pizza by ordering it in a larger format". If you can buy one 12-inch pizza pan for \$10.00 but want two, the

cost will be \$20.00, it should be the same when buying pizza, unless you opt to make the classic blunder of discounting the price of your pizzas, that's a whole different story though.

Tom Lehmann/The Dough Doctor

1223

[/ Re: Dough Doctor's Basic Dough Recipe](#)

Visually, the dough balls look pretty good to me. The question is, do they open easily? Do they provide you with the finished crust you are looking for?

Tom Lehmann/The Dough Doctor

1224

[/ Re: CF Bulk vrs Balled](#)

Travis;

We've had a fair amount of discussion here on fermentation in ball form v/s bulk. A big piece of the puzzle is how big of a dough are we talking about. Look at it like this, if the bulk dough weighs 600-grams and the dough ball weighs 600-grams there will be little to no difference in the amount of fermentation the dough receives, assuming all things equal. If we have a 10-pound dough ball and bulk ferment it heat of fermentation/metabolism will increase the temperature by approximately 1F per hour of fermentation time but if you were to divide that dough into 1-pound pieces and ferment as dough balls the heat of fermentation/metabolism would be more easily dissipated in the smaller dough mass, plus it would show a greater response to the environment, warming faster in a warm room or cooling faster in a cold room. So, as you can see you need to know all of the details of the scenario in order to fully answer your question.

Tom Lehmann/The Dough Doctor

1225

[/ Re: Dough Doctor's Basic Dough Recipe](#)

You "might" be able to push the 40 to 50% mark but keep in mind that vital wheat gluten is very tough and rubbery so it has to be used judiciously. For each 1% VWG you add you will increase the protein content of the flour by 0.6%. It is generally accepted that 10% VWG is about the maximum you will want to add, and at that level you want to make sure the dough receives plenty of fermentation to help mellow the gluten making opening the dough a lot easier. One other thing, for each 1% VWG added you will need to increase the dough absorption by about 1.25%. ALWAYS be sure to disperse the VWG into the dry flour before allowing it to come into contact with any water.

Tom Lehmann/The Dough Doctor

1226

[/ Re: Dough Doctor's Basic Dough Recipe](#)

While Kamut flour is similar to wheat flour and it has a high protein content but it

is lacking in the ability to produce a strong gluten matrix like wheat flour. For this reason it is almost always included in a blend with wheat flour usually at 25% or less of the wheat flour.

It typically exhibits a higher absorption value than many wheat flours due to its high protein content (it is the protein which carries a great deal of the water, however as this type of flour is usually more like a whole grain flour the presence of the bran (fiber) also exerts a great influence on the absorption properties. Defatted soy flour, which has roughly 51% protein content, will typically carry its weight in water (100% absorption) is great for supplementing something with protein but it has no gluten forming proteins in its composition so it is also used in much the same manner where the amount used does not exceed much over 25 or 30% of the total wheat flour weight.

Tom Lehmann/The Dough Doctor

1227

[/ Re: When to add the oil](#)

Probably either the #4 or #6 speed, but in the end it will be the fastest that your mixer will easily handle the dough at.

Tom Lehmann/The Dough Doctor

1228

[/ Re: Flour, sourdough loaves v. pizza](#)

Most breads and rolls are going to be moulded/shaped by a rolling or folding process and any excess flour on the outside of the dough ball will be incorporated into the shaped dough piece resulting in large, undesirable holes and tunnels, pizza crusts, on the other hand, are formed by flattening the dough through a stretching process so no flour gets incorporated into the shaped dough so there is no issue with excess dusting flour on the dough and during the shaping process most of the dusting flour that is applied to the dough ball is removed by handling of the dough during the shaping process.

Tom Lehmann/The Dough Doctor

1229

[/ Re: Dough Doctor's Basic Dough Recipe](#)

A strong bread type flour will be best for that application.

Tom Lehmann/The Dough Doctor

1230

[/ Re: Tough cornicione/pizza](#)

Some flours exhibit a slow hydration rate (this is also common to coarse ground flours too) which would explain why the dough seems to dry up as it ferments. You can easily get around this by using an autolyse as part of your dough making process, this is also beneficial if you are hand mixing your doughs too.

Tom Lehmann/The Dough Doctor

1231

/ Re: Is it safe to put dough back on the fridge?

Depending upon the dough formulation it may or may not survive. Don't worry, it'll be safe to eat but it may not turn out as well as you hope. Just putting the dough back into the fridge will not quickly stop the fermentation process, it may continue for days in some home refrigerators. What to do? What to do? On the morning that you plan to make pizza later in the day re-ball the dough. Don't try to ball it tight, just get it into a ball shape, lightly oil it and place it back into the fermentation container. Pull the dough out of the fridge about 3-hours before plan to open it into a skin.

Some issues you may face:

- 1) The yeast ran out of nutrient and began cannibalizing itself resulting in a wet, sticky dough with little oven spring.
- 2) The dough has become excessively acidic making the pizza difficult to bake properly.
- 3) The yeast has consumed all of the sugar normally used for crust color development making the pizza difficult to bake properly.
- 4) The dough becomes over fermented with all of the good things associated with an over fermented dough such as a dough that feels like putty, difficult to open without tearing, sticky, lacking oven spring, etc.

Tom Lehmann/The Dough Doctor

1232

/ Re: When to add the oil

Most of the time the "stir" speed is slower than necessary when mixing just to hydrate the flour prior to the addition of the oil.

Tom Lehmann/The Dough Doctor

1233

/ Re: Naughty words - dough roller...and hydration rates...

Partially opening the dough using a sheeter or rolling/pastry pin and then finishing the opening process by hand to full diameter is a procedure which we developed a good number of years ago as a teaching aid for those who were deemed to be "toss challenged". The process is now used in a number of pizzerias. I have a video on the process. If you would like to view the video just send me an e-mail at <thedoughdoctor@hotmail.com> requesting the video and I'll be glad to send it to you. The procedure is also very useful when one is having a problem opening the dough by hand and continually getting a very thin center section to the opened skin. We've discussed this procedure many time here in the past.

Tom Lehmann/The Dough Doctor

1234

/ Re: Dough Doctor's Basic Dough Recipe

Actually, the dough really doesn't look to be all that bad. The reason for the dough being soft and a bit sticky is most likely due to the use of an all purpose flour. There is no standard to which all purpose flour is held such as there is for bread and pizza type flours. All purpose flours can contain anything from a low of 9.2 to as much as 11% protein content, even worse we have found that some all purpose flours are made from varieties of soft wheats as opposed to the more commonly used hard wheat varieties. My standard (go to) flour is a strong bread type flour with 12 to 12.8% protein content. You are correct in assuming that vegetable oil can be substituted for the olive oil with the only difference being in flavor.

Tom Lehmann/The Dough Doctor

1235

/ [Re: poor oven spring/texture after 3 day ferment](#)

Just an observation, 0.3% IDY and 3% salt is a bit of a mismatch for optimum yeast performance. There is a distinct possibility that the high salt level is suppressing the yeast activity/fermentation enough to affect the oven spring characteristics of the dough. A quick test for this would be to re-run the dough but reduce the salt to 2% to see if that improves the oven spring characteristics.

Tom Lehmann/The Dough Doctor

1236

/ [Re: King Arthur Whole Wheat Flour Dough](#)

Whole-wheat dough = 100% whole-wheat flour.

Wheat dough = any blend of whole-wheat flour and white flour.

Most people find it a lot easier to make a wheat crust than a whole-wheat crust but you can make a pretty decent whole-wheat crust if you want to go to the effort of finding the correct dough absorption to use for your specific whole-wheat flour.

Tom Lehmann/The Dough Doctor

1237

/ [Re: Tough cornicione/pizza](#)

The addition of any kind of fat to the dough formula will go a long ways towards making for a more tender eating crust, but what struck my interest was your comment on how the dough just gets more sticky as you allow it to rest/ferment (did I read this correctly?). If this is indeed the case you might be dealing with a flour with a high level of starch damage. There is just no way you can ferment a dough made with a high starch damage flour for more than an hour or so. You might look around to see if you can find a similar flour to that which is being used by Greenwich Pizza/Jolibee Foods Corp. The flour they had been using was made from U.S. hard red spring wheat milled there in the Philippines.

Tom Lehmann/The Dough Doctor

1238

/ [Re: Neopolitan with Stoneground](#)

The stickiness you noted is not due to damaged starch, instead it is due to unabsorbed water in the dough. The bran is slow and difficult to get fully hydrated and until it absorbs its share of the water the dough will be sticky. The best way to get around this is to use an autolyse (whole-wheat flour + all of the water) and allow this to set for at least 1-hour. If you do this in the mixing bowl all you need to do is to add the remaining dough ingredients and carefully incorporate at low speed for a minute or so, then complete the mixing process at a higher (medium) speed. The finished/mixed dough SHOULD feel tacky but not overly sticky. I think your observation on the fermentation of your dough was due to the dough becoming stiffer as the bran continued to hydrate during the fermentation process. If you are planning to allow the dough to ferment much more than 1-day you might want to think about providing some nutrient for the yeast in the form of added sugar (1 or 2%) or 0.25% of a 20L diastatic malt powder). If your yeast is running out of nutrient to feed upon adding more yeast will just make matters worse.

Tom Lehmann/The Dough Doctor

1239

[/ Re: King Arthur Whole Wheat Flour Dough](#)

We have had significant discussion here on how to determine the absorption of whole-wheat flours, if you read back in the archives you should be able to find the procedure. Just a tip, the dough absorption of a whole-wheat dough will be close to 75% due to the delayed absorption properties of the bran.

Tom Lehmann/The Dough Doctor

1240

[/ Re: Mixing Times](#)

The reason for developing the dough until it develops a smooth skin is to reduce the stickiness and amount of dusting flour required during the scaling and balling (rounding) process. Even at that level of gluten development the dough is still far from fully developed so there is little or nothing to be gained from mixing it any less. If you want to optimize an open cell structure you should concentrate on optimizing the dough absorption for the type of pizza you're making as well as the baking characteristics of your oven. For a less chewy finished crust I suggest using a lower protein, bread type flour with a protein content in the 12 to 12.8% range in conjunction with 48 to 72-hours cold fermentation time.

Tom Lehmann/The Dough Doctor

1241

[/ Re: Mixing Times](#)

Your question is impossible for me to answer as I don't know anything about your flour, type of dough agitator, dough size/amount of flour used or dough formulation all of which will impact dough mixing time, and then for good measure let's add ability of the mixer to mix whatever the dough size is at a sufficiently high R.P.M. (stir) is not it, so I'm guessing you're either mixing at too slow of a speed or the mixer doesn't have enough Oomph to do the job at a higher speed with your dough size. All of that aside, you should be mixing your dough at something between 115

and 125 R.P.M. if you are trying to develop the gluten mechanically, at that speed it should take 8 to 10-minutes to achieve the desired smooth appearance (this is assuming you have a reverse spiral dough arm, if you have a straight "J" hook or "C" hook you will need to go to about 150 R.P.M. to get the dough to come off of the hook for decent mixing action.

May I suggest an easier mixing method?

Put water in mixing bowl.

Add salt and sugar (no need to mix).

Add flour and yeast (yeast on top of the flour unless ADY).

Mix at low speed just until you don't see any dry flour in the bowl, then add the oil.

Mix one more minute at low speed after adding the oil.

Mix at the highest speed possible (see above) until a smooth skin is developed on the dough.

Measure the dough temperature (70 to 75F).

Scale and ball.

Lightly oil.

Refrigerate 24 to 72 or more hours.

Tom Lehmann/The Dough Doctor

1242

[/ Re: Brine percentage](#)

Yes, but the perceived saltiness is greater due to the "pretzel effect".

Tom Lehmann/The Dough Doctor

1243

[/ Re: Cake yeast ?](#)

ADY, IDY and CY all smell the same after the ADY and IDY have been hydrated BUT keep in mind that it is perfectly NORMAL for CY to have the aroma of a very well use diaper pail (think of the wonderful aroma of ammonia), this can happen if the yeast hasn't been sufficiently washed prior to centrifuging and packaging. The manufactures seem to pay a little more attention to this with their home consumer packages than they do with their 1-pound packages intended for the commercial baking industry. And above all, don't forget that it isn't the aroma of the yeast that provides those wonderful aromas and flavors in our baked goods, it's the by-products of the fermentation process combined with the baking process that are truly responsible for all that good stuff.

Tom Lehmann/The Dough Doctor

1244

[/ Re: Flour, water, salt, yeast - Quick question](#)

Very high absorption doughs are better hand mixed than machine mixed, the reason being that the high absorption doughs are so slack (soft/fluid) that it is difficult to get consistent gluten development unless special mixing attachments are used. Some home bakers will use a flat beater aka paddle to mix the dough until a reverse spiral dough arm can be use to complete the mixing process. As for

incorporation of air during the mixing process it's about the same for both hand kneading and machine mixing. The reason why we often see those large bubbles in the hand kneaded dough is because the dough is actively fermenting during the kneading process, it's not the air that's being incorporated. Many home bakers of both bread and pizza like to machine mix the dough to a point where it comes together and then finish by removing the dough from the mixing bowl and hand kneading.

Tom Lehmann/The Dough Doctor

1245

/ Re: Basic hydration calculation

All ingredients are calculated as a percent of the total flour weight.

Here's how its done:

using your calculator;

1) Enter the flour weight.

2) Press "X".

3) Then enter the ingredient percent you want the weight for.

4) Then press the "%" key.

5) Read the weight of the ingredient in the display. The ingredient weight will always be given in the same weight measures that the flour was shown in.

Tom Lehmann/The Dough Doctor

1246

/ Re: Brine percentage

I use 1.75% salt in the dough (bakers %) and all of the brine solution goes onto the fully proofed dough after making a series of finger pockets to hold little puddles of the brine, then very lightly sprinkle with a little flake salt or sesame seeds.

Tom Lehmann/The Dough Doctor

1247

/ Re: Correlation between hydration and cook temp and time

If you have ever made bread at home and had it collapse, even partially collapse in the oven, you might have noticed that the finished bread had a crumb structure that was similar to some form of an art gum eraser in the making. The open porous crumb structure allows for effective moisture migration towards the heat (the oven air) while a more dense crumb structure restricts the migration of moisture resulting in a higher moisture content in the finished product. So when the bread dough cited above collapses it becomes more dense and retains more water/moisture in the finished product, in many cases this can dramatically change the entire character of the crumb structure. This is also one of the reasons why when a dough is opened 100% by sheeting, be it by machine or rolling/pastry pin, it is more difficult to obtain a finished crust that is as crispy as that from a dough that was opened by hand, and in many cases the crust formed by the sheeting process may not retain its crispiness as well as a hand opened dough. This is why in many cases we allow a skin formed by the sheeting process to proof for a few minutes after forming as this allows the dough to develop a better internal cell structure

which is more conducive to removing moisture during the baking process.
Tom Lehmann/The Dough Doctor

1248

/ [Re: Brine percentage](#)

It was applied to 500-grams of focaccia dough.
Tom Lehmann/The Dough Doctor

1249

/ [Re: Equipment from AIB is now for sale online.](#)

The auction closed this evening, Hobart N-50 mixers went for just over \$500.00 each and Hobart A-120 mixers went for just a tad more. The Hobart HL-200 mixers went for around \$3,000.00 each. Attachments for all sizes of mixers went REAL cheap as did stacks of Lloyd Pans (many were brand new) which sell for \$25 to \$40.00 each. Hobart M-820 mixers went for about \$5,000.00 each which is a real deal considering they were like new and that's what a used one (a well used one) was selling for 10-years ago. The Marsal deck oven went for about \$1,800.00 and an XLT and Middleby-Marshall WoW (both air impingement ovens) went for a little over \$3,000.00, not a bad price for low mileage ovens. Pizza tools like dockers, cutters, Equalizers, etc. were nearly give aways as they were sold in groups. The end of a 100-year era! :(
Tom Lehmann/The Dough Doctor

1250

/ [Re: Missing link?](#)

With doughs in the 56 to 68% absorption range it is all done as a single step but with high absorption doughs (over 70%) allowing the dough to rest for about 10-minutes usually helps in shaping the dough. In most references where they mention "rolling the dough" they are actually referring to the balling of the dough so depending upon a host of factors the rest period between rolling and opening can be anywhere from something measured in minutes to hours. In bread production this rest period is commonly referred to as "intermediate proofing". When making pita or Barbari the rest period is usually around 20-minutes.
Tom Lehmann/The Dough Doctor

1251

/ [Re: Brick oven temp?](#)

Peter;
You found it! It's the May, 2011 article.
I'm looking for the location of the Lost Dutchman's Gold Mine, can you see if you can find it for me? :-D
Man! You're good!

Tom Lehmann/The Dough Doctor

1252

/ [**Re: Correlation between hydration and cook temp and time**](#)

Nope, doesn't work that way, the lower the absorption the denser the dough is during baking due to restricted oven spring so it doesn't bake out as well hence requiring a longer baking time at a lower temperature.

Tom Lehmann/The Dough Doctor

1253

/ [**Re: Brick oven temp?**](#)

Peter;

That's not the article I was referencing but it's still a good article ^^^

I wrote that one after I had been contacted by a number of new operators who had bought used ovens and couldn't get them to bake a decent pizza (hence my closing comments). In one case the individual had an oven that was sold to him as a "pizza" oven but tracing the serial number back to the manufacturer showed that it had been built for a major seafood chain and it was still equipped with the proprietary seafood finger profile which looked nothing like a pizza profile. If I remember correctly I think I wrote the article for my column in Pizza Today Magazine.

Tom Lehmann/The Dough Doctor

1254

/ [**Re: Brick oven temp?**](#)

Andy;

I wrote an entire article on this very topic some time ago as too many people don't choose the oven based on their store concept.

DELCO (delivery/carry out) pizzas need to be as dry as possible to reduce deterioration in the box due to excess moisture from the pizza toppings. Deck ovens are very poor at removing excess moisture from the top of the pizza as they have no forced airflow, air impingement ovens, on the other hand, can be set up/top profiled to provide the maximum amount of airflow to the top of the pizza for maximum/optimum dryness thus reducing the amount of steaming the pizza is exposed to in the box. Additionally, there is no chance of short baking a pizza during busy periods which can result in a tough, chewy pizza. To further address the chewy issue we have found that the use of a lower protein content flour (11.8 to 12.4% range) is also helpful in reducing the perceived toughness when the customer receives their pizza.

Tom Lehmann/The Dough Doctor

1255

/ [**Equipment from AIB is now for sale online.**](#)

Take note: There is still some time left to bid on auction items, I was just there

<www.equip-bid.com/auction/6096> and there are scads of pizza pans and screens, the pans are mostly Lloyd Pans with an average value of \$25.00 each right now bids are in at less than the cost of a single pan!!! Looks like Hobart 20-qt, bench top mixers went for around \$2,000.00 each and 12-qt mixers for around \$500.00 each.

Some really sweet deals there.

Tom Lehmann/The Dough Doctor

1256

/ [Re: Brick oven temp?](#)

What do you hope to achieve by a faster bake time? Remember that longer baking times help to develop a crispier pizza crust and also help to develop more crust flavor. If you want to have a buttery flavor why not use Butter Flavored Crisco? Works great!

Let's streamline your process:

Put water in mixing bowl, add salt and sugar, add the flour and Butter Flavored Crisco then add the yeast (you didn't mention it but I'll assume you using it).

Mix at low speed for 2-minutes then at medium speed for about 8-minutes or JUST until a smooth dough is formed.

Your desired finished dough temperature range should be 75 to 80F.

Take the dough immediately from the mixer to the bench for scaling and balling.

Place dough balls into dough boxes and lightly oil the top of each dough ball.

Immediately place in cooler cross-stacked for 2-hours or until the INTERNAL ball temperature reaches 50F, then down-stack and place a lid on the top box.

Allow to cold ferment for at least 24-hours (48-hours is better).

If dough is properly managed it will be good for up to 72-hours in the cooler.

To use, remove dough from cooler, allow to temper AT room temperature until the INTERNAL dough ball temperature reaches 50F, the dough balls are then ready to be opened into skins by your preferred method. Once you begin opening the dough balls they will remain good to use for up to 3-hours so be sure to pull only what you will need out of the cooler for not more than a 3-hour period.

Any dough not used in the 3-hour period should be opened, put onto wire pizza screens and placed into a wire tree rack in the cooler (cover with a plastic bag to prevent drying) and used during the next busy period. To use the pre-opened skins, remove from the cooler 20-minutes prior to use, remove from screen, re-stretch if necessary, dress to the order and bake. Do not save the opened skins from one day to the next.

Any unused opened skins can be added back to fresh dough at a rate not to exceed 15% of the fresh dough weight.

Tom Lehmann/The Dough Doctor

1257

/ [Re: 80% HD question](#)

At anything above 70% I always use an autolyse (1-hour) and due to the very fluid nature of the dough the mixing time will be relatively long to get any gluten development in the mixer. With all of this being said, you should really be posting to Craig as he is the one most familiar with his dough formula and procedure.

Tom Lehmann/The Dough Doctor

1258

/ Re: 80% HD question

I have personally never made a Detroit style pizza with more than 68% absorption, more typically I will use something closed to 65% depending upon the absorption characteristics of the flour I'm using at the time. I'm not familiar with Craig's Detroit dough formula but I see your notation regarding the flour. How does the KAAP flour differ from what Craig's formula calls for using? Flour is usually not one of those "one size fits all" things so using a different flour can really upset the apple cart. I don't know if that the case here or not.

Also, did you take into account the water content in the starter when calculating the dough absorption, if not that would have added about another 7% water.

Tom Lehmann/The Dough Doctor

1259

/ Re: Brine percentage

We used to use 5-grams of salt in 90-ml of 100F/38C water, so your proportions are very close to what I've used in the past. We used to also sprinkle the dough with flake salt too.

Tom Lehmann/The Dough Doctor

1260

/ Re: Brick oven temp?

Something between 500 and 550F should work well for you. All ovens are a bit different so you will need to experiment a little to see what temperature works best for your specific dough formula and dough management procedure. Hopefully you are planning on a dine-in with some DELCO as opposed to a DELCO store only in which case an air impingement oven would be a much better oven choice.

Tom Lehmann/The Dough Doctor

1261

/ Re: Correlation between hydration and cook temp and time

Generally speaking, higher dough absorption performs better with higher baking temperatures and there comes a point where it's essentially mandatory or the dough will collapse in the oven when it should be experiencing oven spring. Lower absorption doughs are usually best baked at lower oven temperatures. Dealing with deck ovens a lower temperature means 450 to 525F and a higher temperature means 550 to 650F and more. Many deck ovens will not reach a sufficiently high temperature to effectively handle the truly high absorption doughs which will require a baking temperature of 700 to 900F. As the dough absorption rises the dough becomes softer and more extensible so it rises faster and a little sooner during the oven spring stage of baking, this is why you are seeing a more open cell structure, you should also get a more tender eating crust which is more crispy too. As opposed to many home ovens, any commercial oven should bake a better pizza

at comparable temperatures due to the greater heat/temperature recovery of the commercial oven resulting in the pizza baking at a more constant temperature than non-commercial ovens which in many cases lack decent heat recovery, this is especially evident when baking multiple pizzas back to back.

Tom Lehmann/The Dough Doctor

1262

/ [Re: Cook times and temps](#)

Yes, using a malted flour would allow him to reduce or eliminate the sugar but since he is using so much sugar I'm assuming he likes the sweetness imparted by the sugar and he'd lose that if he reduced or eliminated the sugar. The "00" flour and 460F are not an issue due to the sugar helping with the browning reaction.

Tom Lehmann/The Dough Doctor

1263

/ [Equipment from AIB is now for sale online.](#)

The AIB On-Line Auction is still in progress. In anyone is located within a reasonable driving distance to Manhattan, Kansas you might want to take a look at the equipment which is for sale which includes mixers (right now there is a Artofex Twin Arm Dough Mixer which emulates hand mixing with a \$250.00 bid on it).

There are also MANY 12 AND 20-quart Hobart mixers as well as larger mixers too. It looks like much of the pizza equipment is on pages 12 and 13 of the listing. To view the auction go to <www.equip-bid.com/auction 6096 (you may need to go into the current auctions to find it as I did). The auction closes on 11/25.

Tom Lehmann/The Dough Doctor

1264

/ [Re: Putting pizzas in the oven without a peel or screen in a pizzeria?](#)

Pizza dough should not be sticky, it can be soft, very soft but not sticky. I have no problem peeling a pizza made on a 72% absorption dough into the oven using fine grind corn meal under it, I've done higher but seldom do I venture into that territory anymore. A common cause of a sticky dough is excessive diastatic malt or in some cases excessive fermentation, if neither of these seems to apply in your case try using an autolyse (1-hour) in your dough mixing procedure, it can help a lot.

Tom Lehmann/The Dough Doctor

1265

/ [Re: Cook times and temps](#)

OK, let's start at the beginning, first you will need to WEIGH all of your ingredients, no more portion amounts (cups) as different individuals portion your ingredients differently, but 100-grams is ALWAYS 100-grams, regardless of who might weigh it.

Next, you're using the delayed oil addition mixing method but you are adding the oil way too late in the mixing stage, instead, mix the dough for just 2-minutes at low speed and then add the oil, mix one more minute in low speed and then mix 8-6-minutes in medium speed. Forget the window pane test, it's used only for bread making, not pizza as it is used to determine gluten development and we really want to MINIMIZE gluten development when making pizza dough. As soon as the dough has a smooth appearance it is done mixing.

Measure and record the finished dough temperature.

Take the dough directly to the bench and immediately begin scaling and balling the dough (this must be accomplished within 20-minutes or less of completion of dough mixing).

Lightly oil each dough ball and place into the fermentation container, take it IMMEDIATELY to the cooler (uncovered for 3-hours), then cover for the duration of time in the cooler.

When ready to use the dough remove from the cooler 2-hours before you open the dough balls into skins using your dough sheeter/roller.

Prepare the pans by greasing with Crisco.

Fit the sheeter dough piece into the greased pan(s).

Allow the pans of dough to rest at room temperature for 30-minutes (this time may be varied depending upon desired final crust thickness).

Cover the pans of dough and place in the cooler for storage until needed.

Give this process a try, it should provide a much greater level of consistency to your product.

Tom Lehmann/The Dough Doctor

1266

/ Re: Putting pizzas in the oven without a peel or screen in a pizzeria?

Peter;

I was once told that "perception is reality and reality is just a perception", perception and reality don't always go hand in hand though. You're right, blowing under a pizza to help release it from the peel is perceived as one thing (almost like coughing on the pizza to some) while blowing out birthday candles on a cake is yet another thing entirely (in this case the cake is more dangerous than the pizza due to lack of a post "blowing" kill step which the pizza will receive. Then too, how many times have you seen someone wipe their hands on an apron or towel tucked into the apron ties (think Emeril Legasse), and then handle your food? BAD IDEA! Most people never give it a second thought but if you're in food safety it makes you cringe. Fifty years at AIB taught me a lot about food safety, but reality has taught me if it doesn't kill me it will only make me stronger, now if we can just convince our customers of that.

Tom Lehmann/The Dough Doctor

1267

/ Re: Cottage industry question

In reviewing your attached material I'd venture a guess and say that pizza might not be permitted. However it should be very easy to get a final word on this, just contact the authorities and ask them about how they view pizza. While a plain

cheese pizza is one thing that they might allow without refrigeration one with meat and or vegetable toppings is yet another. If you were to have an oven in which you would heat the pizza slice to a temperature above 160F (minimum temperature for a "kill" step) this might influence their opinion in a positive way for you.

Tom Lehmann/The Dough Doctor

1268

[/ Re: Putting pizzas in the oven without a peel or screen in a pizzeria?](#)

The "blowing trick" while effective, doesn't always set too well with the customers in a pizzeria operation.

Tom Lehmann/The Dough Doctor

1269

[/ Re: Baking powder dough?](#)

Peter;

It's interesting to note that the reason why I mentioned the Calumet brand baking powder is because it is one of the few that is based on soda and SALP (sodium aluminum phosphate). This is important as SALP has a slower reaction rate than the other food acids so it functions more like yeast in reaction rate rather than reacting very fast as many of the two stage baking powders do. It's also interesting to note that the residual acid component has a significant impact on finished crust flavor, SALP imparts what we call a "biscuit" like flavor (due to the use of SALP based leavening systems in biscuit mixes) that's why we associate the flavor with biscuits, then there is GDL (glucano delts lactone), the residual GDL imparts a decided sweet taste to the crust, and SAPP (sodium acid pyro phosphate) is the leavening system of choice for use in cake donuts, in fact the flavor of a cake donut is that of SAPP. The next time you eat a cake donut run your tongue across the back of your teeth and you'll feel a roughness, this is a phosphate coating from the SAPP. Due to health concerns in Europe SALP is not on the approved food ingredient listing (it doesn't have an "E" number), so CAPP (calcium acid pyro phosphate) is used as a replacement. Aluminum is the issue, at one time aluminum was thought to be associated with Alzheimer's Disease but that was disproved many years ago. CAPP has not been widely available in the U.S. due to the availability of SALP and since they both perform in a similar manner why have two products? We are beginning to see more applications of CAPP though in specialized products where the biscuit like flavor is not desired so if you happen to see CAPP in the ingredient declaration this is the reason. We use SALP in the WRISE product because the biscuit like flavor imparted by any residual SALP is the least offensive in a yeast leavened product. With that said, some refrigerated doughs are made using GDL with the reason being the superior stability offered by the GDL over all of the other food acids. When you have a dough system that is 100% chemically leavened and the chemical leavening system is based on GDL and soda it is incredibly stable until it goes into the oven, the biggest down side to GDL is its low neutralizing value so you need to use significantly more of it to get the same performance you get from SALP and SAPP which in the end means a higher formula cost. In short, when you see GDL being used there has to be a very good reason for using it.

Tom Lehmann/The Dough Doctor

1270

/ Re: Baking powder dough?

That article sure brings back memories. :)
Tom Lehmann/The Dough Doctor

1271

/ Re: Properly cleaning a spiral mixer with non-removable tub?

If you are making doughs infrequently during the day and have concerns over any dough in the bowl drying out (your 5-minute time limit doesn't suggest this though) all you need to do is to use a flexible plastic bowl scraper to scrape down the bowl after each dough.
Tom Lehmann/The Dough Doctor

1272

/ Re: Baking powder dough?

One of the biggest problems with using baking powder along with yeast is that the soda portion of the baking powder (BP) is neutralized by the acids formed during the fermentation period which results in the acid component being left without any alkali (soda) to work with. This results in a lighter finished crust color and depending upon the food acid used in the baking powder a "different" finished crust taste. In commercial practice a combination of both yeast and chemical leavening can/are used (examples include DiGiorno Frozen Pizza as well as many popular take and bake pizzas) BUT plain BP is not used, instead a coated/encapsulated chemical leavening is used. The trade name for this product is "Wrise" manufactured by Wright Enrichment Company. For home pizza makers you can make a version of this product by using Calumet Brand baking powder and regular Crisco. Use 2% BP and an equal weight of Crisco and work together VERY WELL in a small bowl using a table fork. The fat encapsulates the soda portion of the BP and prevents it from going into solution thus preventing it from reacting with the acids formed during fermentation until the fat is melted in the oven at which time it reacts to give enhanced oven spring. I've got a number of dough formulas for these combination leavened doughs posted in the RECIPE BANK at the PMQ web site <www.pmq.com>.

Flavor wise, 100% chemical/BP leavened crusts leave a whole lot to be desired flavor wise, reminds me of the old Chef Boyardee Pizza kits that we had when I was a kid back in the early 50's, empty the bag of dough mix into a bowl, add warm water and mix, allow to rest a few minutes, spread onto a cookie sheet, add the sauce and cheese and into the oven it went.

Tom Lehmann/The Dough Doctor

1273

/ Re: Properly cleaning a spiral mixer with non-removable tub?

Huh? Unless you're making VERY different doughs there is absolutely NO need to wash a mixing bowl between doughs. What is the reasoning behind this?

Tom Lehmann/The Dough Doctor

1274

/ [Re: Properly cleaning a spiral mixer with non-removable tub?](#)

Just pour in some very hot water (amount will vary with size of your mixer) no soap is needed. Cover bowl with a sheet of plastic and allow to steam for 15 to 30-minutes, then scrub using a plastic bristle pot brush, bail out the water and add clean warm water (100F+/-) to rinse, then add some sanitizer and wipe down.

Tom Lehmann/The Dough Doctor

1275

/ [Re: Putting pizzas in the oven without a peel or screen in a pizzeria?](#)

If you are using your regular flour for a peel dust you might try using fine corn meal, semolina flour, rice flour, my personal favorite is a blend of equal parts of fine corn meal, semolina flour and my regular pizza flour.

There is also a little "knack" to peeling pizzas into the oven. You will want to shake the peel just before dressing the skin to make sure it's still free from the peel, then shake it again after dressing the skin (better to know the skin is sticking to the peel before the oven surprise).

One more thing, it's common to open the skin on the table and then pick it up and transfer it to the peel for dressing and peeling it into the oven as opposed to opening the skin right on the peel.

There has been a lot of discussion on how to peel a pizza into the oven here.

Tom Lehmann/The Dough Doctor

1276

/ [Re: Biga percentages](#)

With that level of IDY in a biga that is fermented for 15-hours at 70F room temperature, plus the fact that the biga is increasing in temperature due to heat of metabolism the flour in the biga has been pretty well damaged by enzymatic activity as well as the acids formed by the fermentation process. For this reason I would not include the flour in the biga as part of the total flour. This is the same thing we do with a sour. It is impossible to tell just how much of the flour is still viable but my best guess would be 0 to 20% at the very most.

Tom Lehmann/The Dough Doctor

1277

/ [Re: Walmart meat](#)

Maybe she's of the opinion that only DEPLORABLES shop at Walmart? WM meats are what is referred to as "previously frozen" which some think of as not as good as fresh, Like you I see no difference. When we're shopping for steak (which is rare since we eat mostly venison), our "yum" factor doesn't even begin to kick in until we see a cut of meat that is over 1.25-inch in thickness. Many of the WM cuts are, in my opinion, too thin (to control the cost), my wife bought one of those 3/4-inch

thick steaks many years ago and it is still serving me well as a replacement sole on one of my hunting boots, needless to say we didn't shop WM for meats again for several years, then we found that WM also carries thick cuts too (just like our local supermarket) so we tried it and it was as good as what we were getting from the supermarket as fresh meat.

Tom Lehmann/The Dough Doctor

1278

/ [Re: Biga percentages](#)

The pivotal question is how long are you fermenting your biga?

Tom Lehmann/The Dough Doctor

1279

/ [Re: Large dough recipe:](#)

Here you go;

DOUGH: (In bakers percent)

Flour: 100%

Water: 65%

Poolish: 20%

Salt: 3%

Oil: 2.5%

IDY: 0.5%

POOLISH: (In true percent)

Flour: 49.76%

Water: 49.76%

IDY: 0.466

Note: While the above percentages should total 100% due to rounding the actual total is 99.986% (close enough for our work).

I have no idea of what your dough ball weight will be so you will need to do it yourself, here's how to do it.

- 1) $4 \times \text{desired dough ball weight} = \text{calculated dough weight}$.
- 2) Add 5% for dough loss = ACTUAL dough weight.
- 3) Add up the bakers percents in the dough and divide the sum by 100.
- 4) Divide the actual dough weight by #3 above. This will give you the new flour weight needed to make your 4 dough balls.
- 5) Calculate each ingredient weight using bakers percent and your new flour weight. (ingredient percent \times flour weight, press the "%" key and read the ingredient weight in the display. Note: Ingredient weight will be in the same weight units as the flour is shown in).
- 6) Repeat this for each ingredient and the dough has been completely resized.

Now for the POOLISH:

- 1) Using your calculator, enter the calculated poolish weight for the resized dough, then enter 49.76 and press the "%" key, read the amount of flour needed for the new poolish in the display.
- 2) Enter the calculated poolish weight for the resized dough, then enter 49.76 and

press the "%" key, read the amount of water weight for the new poolish in the display.

3) Enter the calculated poolish weight for the resized dough, then enter 0.466 and press the "%" key, read the amount of IDY to be added to the new poolish.

DONE!

Tom Lehmann/The Dough Doctor

1280

/ [Re: My biga dough ball is big and lumpy](#)

Try 2-hours before balling the next time, I think you'll get a better dough.

Tom Lehmann/The Dough Doctor

1281

/ [Re: Yeast enough?](#)

I don't understand your question about oiling the shells? Are you making par-baked shells too? Need more details on that one in order to answer.

The dough weights you are showing for the different size pizzas (are they all for the same type of pizza?) are all over the board weight wise for the sizes. Of the three sizes (10, 14 and 16-inch) and the weights shown for each 10, 18 and 23-ounces) which diameter and dough weight represents your best pizza? With this information I can calculate the dough weights for each of the other sizes.

To give you the desired dough temperature for YOUR dough I first need to see your entire dough management process, beginning to end, complete with all times and temperatures.

In view of your circumstances, I suggest that you please give me a call so that we can discuss some of this over the phone.

Please feel free to call me at 785-537-1037 (please e-mail me with date and time at <thedoughdoctor@hotmail.com> we are in the central time zone).

Tom Lehmann/The Dough Doctor

1282

/ [Re: Yeast enough?](#)

Here's what your dough formula looks like in bakers percent;

Flour 100% (800-ounces)

Yeast 0.625%

Sugar 2.125%

Salt 1.125%

Oil 1.625%

Water 57%

How it's done: Divide the ingredient weight by the total flour weight (800-ounces in this case) and multiply by 100.

Example: Yeast/ 5-ounces divided by 800 X 100 = 0.625 (0.625%)

Do this with the weight of each ingredient and you should get the same numbers

that I got.
See, wasn't that easy? :-D

What am I looking at here?

Yeast: Too high for IDY and too high for ADY and too low for CY. What kind of yeast are you using?

Sugar: The percentage looks OK if you're using a deck or air impingement oven.

Salt: At 1.125% the salt level is too low for optimum flavor in the finished crust and the low salt level might be working against you if you are using ADY or IDY because low salt and high yeast makes for fast, uncontrolled fermentation rate.

Oil: Typical range for oil is 1% up to 10% (more typically 2 or 3% at the high end) so the oil is OK.

Water: The dough absorption is 57% which would indicate that you are trying to make a thin crispy or pan style pizza. Typical dough absorption for this type of pizza ranges from 56 to 63% but there can be a lot of variability in dough absorption.

Possible issues experienced with a dough formulated such as shown;

Possibility of blown dough.

Once dough is ready to open it doesn't last very long due to over fermentation. The dough might feel sticky in the mixing bowl and during the scaling/balling process.

Finished crust lacks "something" in flavor. Some might describe the flavor as "starchy" which is common for a low salt product.

Note:

Are you measuring and recording the finished (mixed) dough temperature for each dough you make? This will have a great impact on how the dough ferments. Unless the inside temperature of your shop is varying with seasonal changes if you control the finished dough temperature you will get the same rate of fermentation all year long, and even if your shop is 10 to 15F cooler or warmer due to seasonal changes controlling the finished dough temperature will eliminate much if not all of the temperature variation. Lastly, you are making doughs based on 50# of flour weight which means you are scaling and balling upwards of 83# of dough at a time. You must be able to get the entire dough processed (scaled, balled, boxed or bagged, and in the cooler) within 20-minutes. Are you achieving this? If not you are introducing a level of variability that most pizzerias find unacceptable.

We can work with you to address these issues.

Tom Lehmann/The Dough Doctor

1283

[**/ Re: My biga dough ball is big and lumpy**](#)

The dough looks to be a bit under mixed. Did you mix it until it developed a smooth skin?

Tom Lehmann/The Dough Doctor

1284

[**/ Re: Air Bubbles**](#)

It looks like it was cut from the top down? Or was it cut when still very hot which

caused the cheese and toppings to draw down over the cut area obscuring much of the view of the crumb structure?

Also, see if you can get a picture up close.

Tom Lehmann/The Dough Doctor

1285

[/ Re: Flour vs Oil](#)

Fermentation is a very important aspect when it comes to the dough, it both directly and indirectly affects the flavor of the finished crust and it has a significant impact upon how the dough handles and bakes too. This is why short fermentation times are not all that popular when making pizzas, especially if a flavorful crust is desired. Fermentation times of 8 to 12-hours can and certainly are employed when making pizza crust but the flavor really isn't all that spectacular, but then again it all depends upon what you're looking for in the crust. If you just want "pizza" you can make an emergency dough and be eating pizza within two hours of starting the mixer but if you want something a bit better than a "belly stuffer" it's going to take a bit longer. Unless a dough reducing agent is used in the dough as an ingredient (PZ-44 or dead yeast) short fermentation time doughs will tend to be more elastic than those made using a longer (24-hours +) fermentation time.

When it comes to fermentation you can get different flavors from room temperature fermentation than what you get from cold fermentation so the two processes are not interchangeable from a flavor and aroma standpoint and which one you decide to use will be based on your own personal preferences. Because commercial bread is made using what might be described as a room temperature fermentation process many people equate the crust flavor obtained from a room temperature fermentation process as to being similar to that of "bread" while that from the cold fermentation process is best described as being more in-depth and complex and someplace down the road you might even want to try your hand at using a sourdough starter to develop a truly different/unique crust flavor profile resulting from the different micro-flora that are used to generate the leavening gas as well as the different acids, and quantity\of acids formed during the sourdough fermentation process.

Keep reading and learning and soon you'll be making truly great tasting pizzas and the best part of it is that you will not have to share any of them with your tight lipped "friend"! When he comes to askin" just remind him that "what goes around comes around", but by all means do suggest that he join the family here at Pizzamaking.com, we'll be glad to help him. :chef:

Tom Lehmann/The Dough Doctor

1286

[/ Re: Yeast enough?](#)

Do you have a scale or access to a scale that can weigh in ounces? If so, portion each ingredient and weigh it. Do this three times and write down the weight each time. I'll figure the average ingredient weight for you and convert your "recipe" into a dough formula based on bakers percent. It's a LOT easier to review a dough formula than a dough "recipe". You might have a hard time figuring out the amount to leave as a tip now but in short time we'll have you working in bakers percent like a math major. :chef:

Tom Lehmann/The Dough Doctor

1287

[/ Re: Air Bubbles](#)

Vertically, bottom to top.

Tom Lehmann/The Dough Doctor

1288

[/ Re: Air Bubbles](#)

Can you please provide us a picture of the bubbles?

The shape of the bubble is important to know. Since you are sheeting a rather cold dough (only 1-hours tempering after CF) this might be where the problem is stemming from, but I really need to see a picture of the cut surface to tell. Best way to cut the crust is to invert and cut using a razor knife or VERY SHARP serrated blade, then photograph the cut surface across the entire diameter of the pizza.

Tom Lehmann/The Dough Doctor

1289

[/ Re: Yeast enough?](#)

What is your finished dough temperature, dough formula and how are you managing the dough?

Just for the records, 1% CY is the typical CY level used in most pizza doughs.

Tom Lehmann/The Dough Doctor

1290

[/ Re: Sicilian Dough Chewy](#)

Yael:

Your advice is "spot-on"! ^^^

I would probably want to go to something in the 5 to 10% range for added fat to the dough formula. Try using something like Butter Flavored Crisco or Lard/ bacon fat for the flavor aspect.

Tom Lehmann/The Dough Doctor

1291

[/ Re: Equipment from AIB is now for sale online.](#)

About 100,000 square feet of it (that's the size of the baking labs) Cake & Pastry Lab, Bread Lab., and the Cookie, Cracker & Pizza Lab.

Some of the large scale equipment was special built and designed just for AIB.

Tom Lehmann/The Dough Doctor

1292

[/ Re: Flour vs Oil](#)

Steve;

The plastic bag approach is a good one and should work well for you in this application. If it were me, I'd put them into the freezer for the first two days then transfer to the fridge for the remainder of the time, bring out, allow to warm to 50 to 60F internal ball temperature, turn out of the bag onto a floured surface and begin opening into skins.

Tom Lehmann/The Dough Doctor

1293

[/ Re: Dual Arm / Diving Arm Mixer](#)

If you want to have a hand mixed dough without getting your hands doughy it's a good mixer but if the type of pizza you're making or the dough management procedure requires a more developed dough a spiral mixer would probably be a better choice.

Tom Lehmann/The Dough Doctor

1294

[/ Re: Flour vs Oil](#)

I've seen that too which makes one wonder why are you putting dusting flour on the dough balls? The answer was easy once I had an opportunity to really watch the process in real time. They were not taught the advantages to cross-stacking and they knew all too well that the dough balls get wet and sticky in the dough box (in view of the fact that they are not cross-stacking the boxes) so they put the dusting flour on to help absorb the condensation which forms on the dough balls, end result is still sticky, but not AS sticky. When you oil the tops of the dough balls and cross-stack properly the end result is not sticky.

You be the judge, which method do you want to use?

By the way, to help sway you a little, there are many significant benefits to being able to cool those dough balls quickly and consistently as is afforded by proper cross-stacking. There is a reason why it is so widely practiced in places where dough failure is not an option.

Tom Lehmann/The Dough Doctor

1295

[/ Re: Did i over work my dough?](#)

That my friend is a tell tale indication of an over mixed pizza dough! The more you mix the dough the more bread like the finished crust becomes, if you want a more open, porous crumb structure you must mix the dough just until it comes together and forms a smooth skin on the surface (the smooth skin eliminates much of the stickiness associated with an under mixed dough) but if you don't mind contending with a sticky dough you can remove the dough from the mixer as soon as it comes together and begins to ball up. Many home pizza makers don't mind dealing with a sticky dough, I do it all the time (at home), but in a commercial setting it's usually out of the question as it can take too long to process and then you will have the

enterprising employee(s) who will discover the benefits of copious amounts of dusting flour or oil in making the sticky dough handle better :(
Tom Lehmann/The Dough Doctor

1296

/ Re: Too much salt?

Steve;

What was the total flour weight you used?

You can do the math yourself, just divide the ingredient weight, salt in this case, (23.92) by the total flour weight and multiply by 100. If the resulting percent is over 3% the answer is yes. The typical range for salt in U.S. pizza dough is 1.75 to 2.5%, world wide it is 1 to 3%.

There are a number of things which influence the salt level used in pizza dough, here are a few of them;

- 1) Type of salt used. (It isn't the "salt" it's the sodium content).
- 2) Salt content of toppings (sauce is a topping).
- 3) Proximity to ocean/sea.
- 4) Local tastes.
- 5) Demographics of customer base.
- 6) Dough formulation, especially with regard to flour, yeast and sugar.
- 7) Environmental conditions. Think dough and fermentation temperature.
- 8) Personal tastes.

I could write a chapter in a book on this alone, probably should :-D

Tom Lehmann/The Dough Doctor

1297

/ Re: Did i over work my dough?

Mark;

An understanding of mixer types will tell you what went wrong.

Spiral dough mixers are designed to develop the gluten while mixing the dough, fork type mixers, on the other hand, are designed to incorporate the dough ingredients while imparting minimal gluten development, they were actually designed to replicate hand mixing of the dough in pastry dough applications. I would suggest that you look at pulling a dough as soon as it begins to come together in the spiral mixer, record that time, and then make a couple more doughs with incrementally longer mixing times, this should give you something closer to what you are looking for.

By the way, with your dough formulation the mixing time you used in the spiral mixer should have given a pretty well developed dough structure, nothing like I would have expected from a fork type mixer using a much shorter mixing time and different mixing action.

Tom Lehmann/The Dough Doctor

1298

/ Re: Opinions on Oiling Dough Balls and Proofing Boxes

With individual containers like that you will want to oil the container too which

makes removing the dough a lot easier as there isn't the room afforded by the larger dough boxes for getting a plastic dough scraper under the dough ball to facilitate lifting it out, and since there is only one dough piece in the container you don't need to worry about the dough balls clustering if the container is tipped or bumped.

Tom Lehmann/The Dough Doctor

1299

[/ Re: Flour specs like W, P/L and others](#)

Look for an ash content of 0.52 to 0.54% which is typical to North American high protein flours.

Tom Lehmann/The Dough Doctor

1300

[/ Re: Opinions on Oiling Dough Balls and Proofing Boxes](#)

Can you provide a picture of your pans?

Tom Lehmann/The Dough Doctor

1301

[/ Re: 70% hydration dough not coming together in Kitchen Aide Mixer](#)

I won't tell if you don't tell! :-D

Somebody once said "drastic times call for drastic measures", you do what ya gotta do sometimes. While you manual might have said not to use anything above speed #2 for bread or pizza dough I bet it didn't reference a 70% absorption dough in the sentence ;D

Tom Lehmann/The Dough Doctor

1302

[/ Re: Sealing dough ball](#)

It has nothing to do with time, it's all about optimizing fermentation for your specific flour. Too much fermentation results in weakening of the gluten film making it over soft and extensible and easily stretched too thin, insufficient fermentation will result in a dough that is difficult to open due to its memory characteristics (elasticity) which leads to over stretching in an attempt to get the skin to remain at the desired size after opening, this is where thin spots can again be formed. Dough which has been properly fermented will open easily with only enough elasticity to facilitate handling.

Tom Lehmann/The Dough Doctor

1303

[/ Re: 70% hydration dough not coming together in Kitchen Aide Mixer](#)

We normally see that happening with large capacity mixers when trying to mix

doughs that are sized too small for the bowl size. The only way to address the issue is to increase the speed of the mixer, this will allow centrifugal force to pull the dough off of the agitator allowing for effective interaction between the agitator and the dough rather than allowing the dough to just go for a free ride around the inside of the bowl while clinging onto the agitator.

Tom Lehmann/The Dough Doctor

1304

[/ Re: Flour specs like W, P/L and others](#)

When Googling "Manitoba wheat flour" this is what I got.

[Currently this term is used to refer to any flour that irrespective of the variety of wheat used or the production area, has resistant features similar to those of American flour. With an index of bread making capacity (W) greater than 350, the Manitoba flour is classified as a special flour]

To put it in simple terms, if you are buying Manitoba flour, you are buying someones version of an American bread type flour which will most likely be different from the domestic flours.

Kinda what we've been saying all along.

Tom Lehmann/The Dough Doctor

1305

[/ Re: Sealing dough ball](#)

You might try first reducing the dough absorption in 2% increments to see if that helps you open the balls without thin spots. Then try reducing the bulk fermentation to 18-hours before scaling and balling.

Tom Lehmann/The Dough Doctor

1306

[/ Re: 70% hydration dough not coming together in Kitchen Aide Mixer](#)

Enchant;

That sounds like the work of the hated "J" hook.

Tom Lehmann/The Dough Doctor

1307

[/ Re: Sealing dough ball](#)

Josh;

Too many people are A.R. over sealing the bottom of the dough ball. It's not necessary. The most important aspect of balling the dough is to be CONSISTENT in how you do it. I think I show it being done in one of my videos.

Tom Lehmann/The Dough Doctor

1308

[/ Re: starter and thermal shock](#)

That's pretty close to S.O.P. Here I thought you were going to ask if it would hurt a sourdough starter in if it was taken directly out of the freezer and put directly into boiling water :-D

Tom Lehmann/The Dough Doctor

1309

/ Re: Opinions on Oiling Dough Balls and Proofing Boxes

Just oil the top of the dough balls and you'll be just fine.

Tom Lehmann/The Dough Doctor

1310

/ Re: Doctor, where is the mistake

All other users combined, that's what made that statement so interesting to me. It's a lot like the DiGiorno brand of frozen pizzas, at the time of my retirement, the DiGiorno brand of frozen pizza had 23% of the ENTIRE frozen pizza market for their single brand, think Schwan's/Marshall Foods (Tony's, Red Baron, Freschetta) is big? They only had 19% of the market for their three flagship brands COMBINED.

Sometimes you have to take a step or two back to see just how big the picture really is.

Tom Lehmann/The Dough Doctor

1311

/ Re: Is there any problem with this dough and if yes, which?

To replace 0.5% ADY with CY use only twice as much CY as ADY.

To replace ADY with IDY use 75% as much IDY as you do ADY.

Tom Lehmann/The Dough Doctor

1312

/ Re: Opinions on Oiling Dough Balls and Proofing Boxes

Too much oil? Yes.

Do you need to oil the box? No.

The biggest issue with oiling the dough boxes is that should the box be tipped the dough balls will cluster to one side of the box and on the following day instead of finding a bunch of individual dough balls you will find just one big old ragged dough ball. :(

Tom Lehmann/The Dough Doctor

1313

/ Re: 70% hydration dough not coming together in Kitchen Aide Mixer

0.25% of 20L dry malt powder is the recommended dosage for an unmalted flour.

Tom Lehmann/The Dough Doctor

1314

[/ Re: Equipment from AIB is now for sale online.](#)

Thanks Craig, I'm familiar with essentially all of the equipment shown, you can safely consider it to be very lightly used and very well maintained (remember, AIB was a show place too). If anyone has a sincere interest in buying something and has any questions about it feel free to reference the item(s) in a PM to me and I'll try to answer any questions you might have.

Tom Lehmann/The Dough Doctor

1315

[/ Re: Doctor, where is the mistake](#)

Just to weigh in here, North American flours are tailored specific to the needs/demands of North American bakers, in general it might be said that they are designed specifically for use in high speed, automated bakery operations. If a lower protein flour option is selected such as one made from varieties of hard red winter wheat (typically 10.2 to 11.2% protein content) the flour becomes more applicable to both home and small scale bakery operations however it must be remembered that essentially all bread flours, regardless if they are made with hard red spring wheat, hard red winter wheat or hard white winter wheat or a blend of them, are genetically designed to have protein properties that are strong and elastic with excellent resistance to over mixing and over fermentation, that's just the nature of the beast. When McDonalds (hamburger chain) went International I was on the Bakery Products Task Team, our job was to show local bakers/bakeries how to make a "McDonalds Bun". These buns were at first brought in frozen from a bakery in the U.S. or some other location until a specific number of stores were opened, then a large automated bakery was built specifically for the dedicated production of McDonalds hamburger buns (France, U.K., Germany, Turkey, Russia, to name but a few). In most cases bakers didn't even know what a hamburger bun was, let alone a "McDonalds Bun", and in all cases their local flours were not suited for the production/high speed production of the buns. This meant that we also had to work with the local flour mills to arrange for the correct type of wheat to be imported and milled to U.S. specifications, we were then able to work with the individual bakeries to produce the desired quality "McDonalds Buns" which were then distributed to the local McDonalds stores. As we brought more commercial bakeries on-line we didn't need to bring in frozen buns from the States anymore (damned expensive to air-ship frozen hamburger buns half was around the world). Today there is a network of commercial bakeries producing McDonalds Buns around the world with most, of them using a flour that was not even available to them back in the 1980's. Since McDonalds is said to be the second largest user of wheat flour in the world (think of that, it's pretty impressive) some countries may have started planting North American wheat varieties while others, even today, I am sure are still importing wheat specifically for this application. By the way, Weber Bros. Bakeries was the first German bakery to produce McDonalds Buns. and France was the last country that we built a bakery in and trained their production personnel before the team was disbanded. Just for the record, Australia and New Zealand were the most challenging but also the most rewarding, and Panama was the funniest by far! Czechoslovakia and Slovenia were the most

interesting and scary but that's another story.
Tom Lehmann/The Dough Doctor

1316

/ Re: Difference on impact from stretch and fold

When we studied hand mixing techniques back in the 1980's we found that the critical aspect to stretch and folds was that sufficient time was allowed between stretch and fold session for the dough to sufficiently relax. Failure to do so resulted in the dough becoming progressively tighter with each stretch and fold session until the dough became unmanageable. The time needed for the dough to relax was variable and dependent upon flour strength, dough formulation, dough temperature and environmental temperature.

Tom Lehmann/The Dough Doctor

1317

/ Re: Poolish Experiment with Question!

Your assumption is absolutely correct. In commercial bread making where sponges rule the game we do essentially this very thing by adjusting the percent of the total flour in the sponge to balance the desired dough/finished product characteristics. For example, when making white pan bread a 70/30 sponge dough system is typically used since it provides a good balance of dough handling properties and dough strength needed to withstand the mechanical shock/impacts encountered when the fully proofed dough is conveyed to the oven for baking while still providing a finished loaf with all of the desired finished product characteristics. Hamburger buns, on the other hand, are typically made using an 80/20 sponge dough process (80% of the total flour is in the fermented sponge), this is because in the production of hamburger buns a very soft and extensible dough is needed to provide the desired symmetrical shape and since the dough is not proofed to the height of a bread dough it is less prone to mechanical shock damage (generally defined as collapse) than dough used for white pan bread production.

Tom Lehmann/The Dough Doctor

1318

/ Re: Poolish Experiment with Question!

Peter;

Good point!

It takes about 45-minutes for whole-wheat flour to fully hydrate so both experiments should have been on an even footing BUT if the dough absorption was NOT optimized for the inclusion of the whole-wheat flour you are correct in that it might have been sufficiently low in absorption to exhibit an inhibiting effect on the rate of fermentation in the dough made with the yeast. We typically do not see much of an inhibiting effect due to low absorption when sourdough starters are used due to the nature of the bacteria as opposed to yeast cells.

Tom Lehmann/The Dough Doctor

1319

/ Re: Doctor, where is the mistake

I agree with Yael in that while All Trumps flour (14+% protein content) is the gold standard for making N.Y. pizzas in N.Y.C. it is not really necessary to use such a high protein flour. When we did our pizza seminars we made great N.Y. pizzas using flours in the 12.2 to 12.8% protein range (U.S. flours). The main advantage to using a very high protein flour in this case is to achieve the desired fold ability and chew that one has come to expect from N.Y. pizzas. However, we found that today, not everyone appreciates that amount of "chew", so we are seeing more N.Y. "style" pizzas being made using lower protein flours which still produce pizzas with all of the desired characteristics but with less chew.

Tom Lehmann/The Dough Doctor

1320

/ Re: Best Practices for hand-stretching bases in advance ?

The picture that you've attached is that of the type of tree rack to which I was referencing.

Tom Lehmann/The Dough Doctor

1321

/ Re: Polish Experiment with Question!

Unless the whole-wheat flour was malted the polish with ADY most likely ran out of nutrient for the yeast after around 6-hours while the polish with the sourdough starter was based on bacterial fermentation, not yeast fermentation so it didn't need a source of amylase enzyme to convert starch to sugars for the yeast to feed upon during the fermentation period. In essence you were comparing apples to watermelons since the mechanism for fermentation between the two tests/doughs is so different. The stickiness of the sourdough fermented dough was due to the acidity of the dough which breaks down the protein rendering a weaker or very poor gluten film depending upon the quality of the protein in the flour being used.

Tom Lehmann/The Dough Doctor

1322

/ Re: Is there any problem with this dough and if yes, which?

The dough looks pretty good to me.

Tom Lehmann/The Dough Doctor

1323

/ Re: 70% hydration dough not coming together in Kitchen Aide Mixer

Does your KA mixer have a "J" hook or a reverse spiral dough arm? With higher absorption doughs I've found a "J" hook and spiral dough arm to be a difference without a distinction due to the small diameter of the mixing attachments. Still, the reverse spiral dough arm will perform better at developing the gluten than the "J" hook. If it will perform good enough to form a cohesive dough using your flour and

dough formula remains to be seen. Keep in mind that high absorption doughs do require longer mixing times than lower absorption doughs do there is a possibility that you are just not mixing the dough long enough to sufficiently develop the gluten allowing for the formation of a dough ball in the mixer. Aside from that, you are adding a lot of malt and also a lot of sugar to the dough formula which is giving you a sweet taste in your finished crust and depending upon your oven and baking conditions, a dark crust color.

Tom Lehmann/The Dough Doctor

1324

[/ Re: Inconsistent Cook on Bottom of Pizza](#)

With your reach-in cooler a finished dough temperature in the 70 to 75F range will work much better for you.

Tom Lehmann/The Dough Doctor

1325

[/ Re: A question about Pizza dough](#)

Dry yeast: is it IDY (instant dry yeast) or ADY (active dry yeast)?

What is your water temperature?

Tom Lehmann/ The Dough Doctor

1326

[/ Re: Some issues I've been having, dough rising a lot, hard to stretch, crust forming](#)

Those dough balls look really under fermented to me!

Tom Lehmann/The Dough Doctor

1327

[/ Re: Best Practices for hand-stretching bases in advance ?](#)

What we regularly do is to open the dough balls into skins, place the skins on screens and put the screens with the opened skins into a wire tree rack and place in the cooler (uncovered for 30-minutes) then cover with a plastic bag until ready to use. To use the pre-opened skins, remove from the cooler and remove skin from the screen, dock the skin and place on a dusted peel or a baking platform, dress to the order and bake. We have used this ourselves at pizza shows and at stores where the staff gets slammed at "crunch" time. The process works quite well.

Tom Lehmann/The Dough Doctor

1328

[/ Re: Flour specs like W, P/L and others](#)

U.S. and Canadian flours are all milled similarly (Manitoba) I'm betting money on this, is probably a Canadian milled flour, as such it would be a hard red spring wheat variety and most likely be of high protein content, I'm guessing around

13+%. As to particle size distribution in a typical U.S. / Canadian flour the range will be from about 15 to 220-microns with most of it clustered around 100 to 150-microns in size. I have not seen any particle size distribution data on European or Italian flours so I don't know how they would compare.

You have to remember that when it comes to wheat flour it's a lot more than just protein content and particle size, genetics plays a huge part in the quality picture. U.S. and Canadian wheats have been bred for very specific characteristics (crop yield, disease and pest resistance, resistance to drought, maturity, protein content and protein quality (as it relates to stronger gluten). Other countries have different flour needs so they have developed their wheat varieties to have different characteristics which may or may not be compatible with pizza production.

Tom Lehmann/The Dough Doctor

1329

[/ Equipment from AIB is now for sale online.](#)

For anyone interested, AIB (American Institute of Baking) is selling their equipment from one of the training labs. To see the online auction go to: equipbid.com/manhattan_kansas and look for the AIB heading.

Tom Lehmann/The Dough Doctor

1330

[/ Re: Bulk RF vs Balled CF Need Help Please](#)

I agree with Yael that 0.8% ADY is excessive for a 24-hour CF dough. The most I typically use is 0.5% but that amount can change depending upon the finished dough temperature. You also stated that the dough balls flowed together so I'm assuming (we all know what that means :-D) that you're using dough boxes. I didn't see any mention of cross-stacking the dough boxes when placing them into the cooler, are you cross-stacking? If so for how long? Not cross-stacking long enough is as bad as not cross-stacking so the time is an important too. One common error associated with not cross-stacking or not cross-stacking long enough is associated with the dough blowing. To correct this the yeast is reduced (sometimes to ridiculously low levels) which addresses the blown dough but now there isn't sufficient yeast to provide the necessary leavening during the critical oven spring stage of baking which results in setting the stage for the "dreaded gum line" and a tough, chewy finished crust.

Tom Lehmann/The Dough Doctor

1331

[/ Re: Flour specs like W, P/L and others](#)

The Alveograph is seldom used as a testing/measurement tool with American flours, with the quality of protein in these flours it really isn't necessary. To a great extent U.S. flour quality as well as dough quality characteristics are pretty well tied in to protein content of the flour. This is not the case with most European flours which are made from varieties of wheat having significantly different protein/gluten attributes so the Alveograph is much better suited to differentiating quality characteristics between different flours. You might want to do a search to

see if you can find a cereal research facility such as the Canadian Grain Research Facility in Winnipeg, Manitoba, Canada. There is also a facility in France as well as in the U.K (Leatherhead), Australia also has one called the BRI (Bread Research Institute). I would think that a research facility near you with access to your local flours would be able to answer your question. As a side note: A good number of years ago France was buying a significant amount of U.S. wheat (DNS #2) dark northern spring wheat #2 (the most common exported wheat from the U.S.) U.S. Wheat Associates asked me to travel to France to survey the wheat/flour market to get a better grasp of where/how all of this wheat was being utilized. France, at the time was claiming that they had the best flour in Europe, or something to that extent. So where was a large portion of all that wheat going? Turns out it was being milled and blended into the local French flour to improve its overall baking properties and sold as French flour. I have no idea if this is still the case or not as it has been too many years since then. The point is that you might find a pretty decent flour with a lot of the DNA of a U.S. flour being marketed as domestic flour.
Tom Lehmann/The Dough Doctor

1332

/ Re: Inconsistent Cook on Bottom of Pizza

Absolutely! Adding more water actually reduces the energy input into the dough due to the softer dough condition. When mixing pizza dough just mix it until you achieve a smooth, satiny appearance to the dough. You will find that as you continue to mix the dough it will become progressively smoother in appearance and become MUCH easier to work with immediately after mixing. You mixing time should be in the range of 9 to 11-minutes. If you stop the mixer every 2-minutes, or so, you will be able to see the dough becoming less sticky as you handle it.
Tom Lehmann/The Dough Doctor

1333

/ Re: Some issues I've been having, dough rising a lot, hard to stretch, crust forming

The missing piece to the puzzle was the finished dough temperature. If the dough balls are expanding too much it might be due to the finished (mixed) dough temperature being too high or you are covering the containers right away as you place them into the fridge, instead, cross-stack them (just another way of saying to leave the containers open until the internal dough ball temperature reaches 50F/9.9C) this usually takes 2 to 3-hours, then proceed with covering the containers aka "down-stacking" for the duration of the CF period.
Tom Lehmann/The Dough Doctor

1334

/ Re: Urban myth or truth? Different dough served in the pizzeria and in delivery

Delivery v/s dine-in pizza.

- 1) In commercial practice they are both made using the same dough as it would create a nightmare trying to use different doughs.
- 2) This is not to say that DELCO stores don't use a dough formula developed to be more compatible with the rigors of DELCO, they sometimes do.

- 3) The changes made for a specific DELCO application are to use a slightly thicker crust, think Domino's.
 - 4) Lightly oil the skin prior to dressing.
 - 5) Go easy on the sauce and toppings.
 - 6) Use an air impingement oven as opposed to a deck oven to achieve a drier pizza.
 - 7) Allow pizzas to steam off prior to boxing.
 - 8) A cut pizza tends to hold up better but your customer will dictate what they want in this regard.
 - 9) Boxes to have steam vents.
 - 10) Ripple sheets or Pizza Savors are an asset.
- Note: A lower protein content flour might benefit DELCO pizzas by reducing chewiness (#1 complaint of DELCO pizzas).

We discussed all of this not too terribly long ago.
Tom Lehmann/The Dough Doctor

1335

/ Re: Some issues I've been having, dough rising a lot, hard to stretch, crust forming

OMG! Where to begin, can you share your dough formula and dough management procedure as well as finished dough temperature? And then there's the matter of the yeast, 1% IDY is wwaayy too much for the average pizza dough. Instead, the amount of IDY should be something between 0.15 and 0.4% depending upon how the dough is being managed.
Tom Lehmann/The Dough Doctor

1336

/ Re: Inconsistent Cook on Bottom of Pizza

I forgot to add that this can also be caused by placing the pan directly on a hot deck. Place a screen under the pan for the first five minutes of the bake then complete the bake on the deck if you want to. The rapid heat transfer results in gas bubbles coalescing into large gas pockets which you are seeing, placing a screen under the pan reduces the rate of heat transfer thus eliminating the problem.
Tom Lehmann/The Dough Doctor

1337

/ Re: Inconsistent Cook on Bottom of Pizza

Those are from gas pockets being formed on the bottom of the crust. Reduce the dough absorption by 3% to see if that improves the situation, if you see some improvement you might need to make further reductions in dough absorption.
Tom Lehmann/The Dough Doctor

1338

/ Re: Are American Pizzas (New York etc) made with hard or soft wheat?

Wheat as we know it and durum are two entirely different animals. The gluten

formed from the durum wheat has a very tough and rubbery characteristic. The hard wheat varieties grown in the U.S. are bred for a specific purpose or characteristic. Most commonly bread making properties, yield, agronomic characteristics as well as resistance to pests and disease.

Tom Lehmann/The Dough Doctor

1339

[**/ Re: Doctor, where is the mistake**](#)

That's impossible for me to say as every flour has an "optimum" absorption. My "go to" absorption is 62% and from there I decide if I need to further increase or decrease the absorption to achieve desired dough handling and performance characteristics.

Tom Lehmann/The Dough Doctor

1340

[**/ Re: Are American Pizzas \(New York etc\) made with hard or soft wheat?**](#)

Hard wheat varieties are used for 100% of the bread and pizza flours in the U.S. Most bread flour are milled from either straight HRW (hard red winter) or a blend of HRW and HRS wheat varieties while the high protein/gluten flours are milled exclusively from HRS (hard red spring wheat) varieties. Over the past few years there has been growing use of HWW (hard white wheat) varieties in making flour but for now these wheat varieties are relegated mostly to making whole grain/whole-wheat flours. In Australia the use of HWW is almost exclusive to all types of bread and pizza flour.

By the way, All Trumps flour is the main flour used in New York and AT flour is milled from varieties of HRS wheat.

Tom Lehmann/The Dough Doctor

1341

[**/ Re: The effect of yeast percentages on taste**](#)

It's not the age of the oven, it's the heat/temperature in the oven that is both creating and releasing those aromas. There is a point of diminishing returns when it comes to oil and retention of those aromatics. Our research showed that 1.5% (flour basis) was the tipping point, beyond that we didn't detect any appreciable increase in crust flavor/aroma. A bunch of years ago I did work on Paradise Island, Bahamas for a locally owned pizza chain. One of the things I was asked to address was the lack of flavor in the pizzas, when addressing this all I did was to include 1.5% oil in the dough formulation and that was all that was needed to give them the flavor profile they were looking for. Sometimes things are easy, sometimes they ain't.

Tom Lehmann/The Dough Doctor

1342

[**/ Re: when to add salt and oil to dough?**](#)

If you are having a problem with the turning peel you're probably not allowing the pizza to set long enough before moving or spinning it.

Tom Lehmann/The Dough Doctor

1343

/ Re: Inconsistent Cook on Bottom of Pizza

I think I might know what's happening but first, can you please send a picture of the bottom of a pizza where this is occurring so I take a look at it? Just pop the entire pizza out of the pan and invert it then take a couple of photos of it.

Tom Lehmann/The Dough Doctor

1344

/ Re: Store bought dough would not create crisp crust - suggestions appreciated

Steve;

Refrigerated dough is a whole different store from frozen dough. It is most likely made in-house as it's made with IDY, the last five words in your response told me that. In any case, the dough is wwaayy short on fermentation, it's not too much more than a glorified emergency dough. The next time you use it try allowing it to ferment in the fridge for 48-hours before using it. Let's see if that improves the finished crust in any way.

Tom Lehmann/The Dough Doctor

1345

/ Re: Store bought dough would not create crisp crust - suggestions appreciated

The dough you bought was it frozen bread dough or frozen pizza dough? The reason why the dough was so easy to open is because it had a good healthy dose of a dough relaxer (used as a processing aid when making frozen dough). The dough relaxer (L-cysteine or dead yeast) are the most commonly used. Look on the package ingredient declaration to see if L-cysteine appears. If dead yeast is used it does not need to be declared separately as it is included in with the live/active yeast. Further, frozen dough has essentially NO fermentation time on it. I think this is what is causing the issue for you. To use frozen dough and get a better product try this:

- 1) Slack out the frozen dough by placing it in the fridge over night.
- 2) Remove the dough from its packaging, lightly oil it and place in a fermentation container (bowl, bag, etc).
- 3) Place at room temperature for 1-hour (make sure the dough is covered).
- 4) Place the dough back into the fridge for 24-hours to cold ferment.
- 5) Remove the dough from the fridge and allow it to warm until the internal dough ball temperature reaches something in the 50 to 60F range.
- 6) Turn the dough out of the container onto a floured surface and proceed to open into a skin for immediate use.

We developed this procedure back when we did pizza seminars at AIB and it worked quite well for us as we demonstrated the use of frozen dough to our students.

Tom Lehmann/The Dough Doctor

1346

/ Re: Doctor, where is the mistake

I think this will help you a lot;

- 1) Adjust the yeast level to 1% compressed yeast/CY OR 0.5% active dry yeast/ADY OR 0.4% instant dry yeast/IDY. Be sure to remember to activate/hydrate the ADY prior to addition.
- 2) Adjust the water temperature to give you a finished dough temperature (after mixing) of 75 to 80F/23.8 to 26.6C.
- 3) Immediately after mixing divide the dough into desired weight pieces for the size pizza you are going to make.
- 4) Form each piece into a ball.
- 5) Lightly oil each dough ball and place into individual plastic bags (like bread bags).
- 6) 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.
- 7) Allow the dough balls to cold ferment (CF) for a minimum of 24-hours (48-hours is better). Experiment to find what works best for YOUR specific dough.
- 8) To use the dough, remove from the fridge, allow to warm AT room temperature for 2-hours.
- 9) Turn the dough out of the bag allowing it to drop onto a floured surface.
- 10) Open the dough ball into a skin by your preferred method.
- 11) Dock the dough skin or begin dressing the skin.
- 12) Take dressed skin to the oven for baking.

Tom Lehmann/The Dough Doctor

1347

/ Re: Seasoning aluminum peel

Wood peels are used as a prep peel and metal blade peels are your oven peels (for removing baked pizzas from the oven).

Tom Lehmann/The Dough Doctor

1348

/ Re: How to determine internal Dough ball temp before opening

Your IR thermometer only measures surface temperature, you want to measure the internal temperature of the dough ball which is different from the surface temperature. A low cost dial/stem type thermometer is what you want to use to measure the internal dough ball temperature.

Tom Lehmann/The Dough Doctor

1349

/ Re: Yeast measurement

Suspending the yeast in a quantity of water and then using a portion of that water will work fine. Here are some things to keep in mind if you opt to go that route.

1) Make sure that the water you suspend the yeast in is 100F if using ADY or IDY. You don't have to worry about water temperature if using CY.

2) Remember to include the water that the yeast is suspended in as part of your dough water/absorption.

3) If using ADY be sure to allow 10-minutes to activate and hydrate the yeast. This is not necessary if using IDY.

4) ALWAYS stir the yeast suspension well immediately before you subdivide it. Here is a simple example of how to make a yeast suspension and subdividing it for a smaller yeast amount.

50-grams of water (weighed).

1-gram yeast.

Stir well to suspend the yeast in the water.

Allow to activate if using ADY.

Stir well.

Weigh desired amount.

In this case every 5-grams of the solution will provide approximately 0.1-gram of yeast, if your scale will weigh out to 1-gram accurately you are able to weight the yeast out to 0.1-gram divided by 5 = 0.002-gram.

While not as accurate as a good scale this method is plenty accurate for home use.

Tip: A trip to The Dollar Store will get you a package of small, plastic communion cups that work great for weighing out small amounts of liquid, just remember to rinse the cup with the remainder of the dough water.

Tom Lehmann/The Dough Doctor

Tom Lehmann/The Dough Doctor

1350

/ [Re: Seasoning aluminum peel](#)

Ditto! Tried it once and until the seasoning fully cured it was indeed worse, that's the "good" news, the "bad" news is that it seemed to take forever for the seasoning to fully cure.

Tom Lehmann/The Dough Doctor

1351

/ [Re: Causes of thin spots?](#)

Q.J.;

You took the words right out of my mouth! :-D

Tom Lehmann/The Dough Doctor

1352

/ [Re: Does Anyone 48 Hour or More CF with Ischia \(or other\) Starter?](#)

Most starters as well as doughs leavened only with a sourdough starter typically don't do all that well in a cold fermentation environment, and if you spike the dough with yeast the yeast will quickly become the dominant micro-organism resulting in a loss of a lot of the flavor notes derived from the starter.

Tom Lehmann/The Dough Doctor

1353

/ Re: The effect of yeast percentages on taste

When you open an oven in which pizzas are being baked the aroma is wonderful! Those are the aromatic compounds which are retained in the oils, even just a small amount of fat in the dough will retain these compounds, those which are not retained are lost forever which makes for a pretty good case for adding some oil to the dough formula.

Tom Lehmann/The Dough Doctor

1354

/ Re: Why does the top of the dough ball become the bottom of the pizza?

We've discussed this a few times before and if you ask ten different people you will probably get at least five different answers. My procedure is to begin opening the dough ball with the top side down as less dusting flour is required (more flour adheres to the rough bottom than the smooth top) and then flip the partially opened skin over to finish opening then turn it over again for docking and/or dressing. This means that the skin ends up top side down (bottom side gets dressed). In tests that we did at AIB we found that we got fewer bubbles (large bubbles), less sticking to the peel and if there was any drying of the dough ball the dry, scaly dough skin was on the bottom of the finished pizza where it posed no problems.

Note: When plastic bagging the dough there is no top or bottom to the dough ball so this becomes a moot issue in that case.

Overall, it doesn't seem to be an overly critical issue which side goes up or down as long as you're not experiencing problems cited above and you're happy with the finished pizza.

Tom Lehmann/The Dough Doctor

1355

/ Re: Need More Flavor

Hopefully at least 1/4-inch or thicker. Be sure to allow at least an hour for it to thoroughly heat up and if at all possible, if you have a bottom burner or heating element in your oven, move it close to the bottom heat source for the first part of the bake then move it to a higher rack position for top color.

Tom Lehmann/The Dough Doctor

1356

/ Re: The effect of yeast percentages on taste

Remember, oil retains flavor compounds released during baking, that's why my mother always told us kids to "keep the butter dish covered in the fridge". Ever have a slice of wedding cake that tasted like a cigarette? Yep, the fat in both the cake and the icing retained all of those wonderful aromas of that smoke filled room. Try as you might, you cannot remove the flavor compounds absorbed into the crust during baking.

Tom Lehmann/The Dough Doctor

1357

/ [Re: Need More Flavor](#)

You're already over dosed on the diastatic malt and there is no benefit to using honey over regular table sugar so my advice is to delete the honey, reduce the diastatic malt to 0.25% and add 4% table sugar then adjust as necessary. I'm guessing that the lack of browning is why you're not getting the flavor profile you're looking for. Are you baking on a stone or steel? In not how are you baking your pizzas?

Tom Lehmann/The Dough Doctor

1358

/ [Re: Need More Flavor](#)

- 1) Go to 72-hours cold fermentation.
- 2) Utilize a sourdough starter in place of the IDY you are presently using.
- 3) Increase the olive oil to 2%. Try using a pomace grade olive oil as it has a more "robust" flavor.
- 4) Baking has a significant impact on crust flavor but you didn't provide any details so I cannot comment but make sure the crust is getting a good, solid bake with a little char if possible.

Tom Lehmann/The Dough Doctor

1359

/ [Re: Forgot to knead before first rise](#)

Here is my home made hand mixed dough process;

Put 75F water in bowl

Add salt and sugar (if used).

Put yeast in a small portion of water at 100F, stir to suspend and allow 10-minutes to hydrate & activate.

Pour yeast suspension into the dough water in the bowl.

Using a wood spoon mix well to incorporate.

Scrape dough out of the bowl onto a floured surface and knead for a minute or two.

Form into a ball and place into lightly oiled bowl (I re-purpose my mixing bowl).

Allow to ferment at room temperature for 1 to 2-hours (not critical).

Turn dough out of the bowl onto a floured surface and knead several minutes just until the dough becomes smooth.

Lightly oil the dough ball and place back into the bowl to ferment for desired length of time or place into bread bag and refrigerate for 24 to 72-hours before use.

So, to answer your question, I would have kneaded it a few minutes until the dough took on a smooth appearance and placed it back into the bowl or a plastic bag (Walmart bags work in a pinch) to continue fermenting for the desired length of time.

Tom Lehmann/The Dough Doctor

1360

[/ Re: The effect of yeast percentages on taste](#)

The yeast itself has nothing to do with it, pizzerias use the same yeast that is used by many home pizza makers, be it CY, ADY or IDY, but like other things in life, it ain't what you got that counts, its how you use it. Most pizzerias will use dough with anything from 24 to 72-hours cold fermentation time. Could they be using an inactive sourdough? Sure they could. We just recently had some discussion here on one from Lesaffre/SAF Yeast. Since dough becomes more acid the longer it ferments and acid is tart, the sweetness you mention is confusing because sweet is just the opposite of tart. You also mention "savory" which is is not usually mentioned when describing crust flavor so I'm wondering if you are not being confused by possibly the flavor of the sauce which they use which might be described in those terms (sweet and savory).

Tom Lehmann/The Dough Doctor

1361

[/ Re: The effect of yeast percentages on taste](#)

The real flavor/taste of raw yeast is much like that of musty newspapers. Some restaurants use frozen dough for their dinner rolls and the finished rolls have a very distinctive "yeasty" flavor owing to the fact that high levels of yeast and little to no fermentation is used in making frozen dough. What you are tuning in to are the flavors resulting from the by-products of fermentation. Buy a frozen bread dough, slack it out and make a pizza with it and you will get the same flavor profile, I've heard it likened to that of home made bread too (like Grandma used to make), that's because many home bread recipes use a lot of yeast and short fermentation times (just like that frozen dough mentioned above). It doesn't surprise me at all that you like a sourdough flavor since it's something like an exaggerated fermentation flavor. Those who like a well fermented flavor usually appreciate a sourdough flavor but those who think a well fermented flavor is like smelling a brewery generally don't appreciate a good sourdough flavor.

Tom Lehmann/The Dough Doctor

1362

[/ Re: First attempt at making dough](#)

The REALLY great thing about working in bakers percent is that it allows you to change any one ingredient (like water) without changing any other ingredient amount, so no, don't change anything but the amount of water being added to the dough. As many people here will attest to is the fact that I personally like to use individual plastic bags to store my dough in. The bags are like bread bags and can be bought at your local supermarket as food storage bags, they come on a roll and sell for only a couple of dollars. Hopefully you will have them available to you, but if not you can use any low cost, stackable, plastic food storage box with a snap on lid. Just be sure to put a couple of small holes in the lid to release pressure and then be sure to leave the lid off for the first 2-hours after placing them in the fridge, after that they can be lidded for the duration of refrigerated storage. Be sure to lightly oil the dough ball just before placing it in the box to prevent drying

while the lid is off and to facilitate removing the dough from the box/bowl.
Tom Lehmann/The Dough Doctor

1363

/ Re: when to add salt and oil to dough?

In my response cited by Peter I explained how the delayed salt addition mixing method impacts gluten development and development of a lighter dough color as well as a lighter crumb color in the finished product. While this might have validity in bread production it has essentially no validity in pizza production, the reason being that in pizza the dough is never mixed enough to achieve the oxidation by exposure to air during mixing (explained in my response) and any change to a brighter crumb color is all but impossible to distinguish in the crumb structure of a pizza crust (in bread it is easy to see, but not in a pizza crust). As for flavor, the shift in flavor is much too subtle to detect in a dressed pizza (again, bread is a different story). In my opinion, the delayed salt addition mixing method has no real value in making pizza doughs, and the greatest challenge when using the delayed salt addition mixing method whether it be for bread or any other dough application is in not having a pre-scaled portion of salt left over at the end of the production run, Oops! With all of this said, there is one place where the delayed salt mixing method IS almost universally used in dough production and that is in commercial frozen dough production (both bread and pizza). When making these doughs the absorption is minimized to some extent to help control ice crystal development in the dough and the doughs are mixed very cold (60 to 65F) with full gluten development being the objective. This means that the dough is going to be VERY tough and difficult to mix (specially designed mixers are employed) so steps are taken to help reduce the mixing time, these steps are use of the delayed salt addition mixing method as well as inclusion of a dough reducing agent such as L-cysteine/L-cysteine hydrochloride or glutathione (dead yeast) or even possibly deodorized vegetable powder (onion and garlic). This just further reinforces my observation that was responsible for me getting into pizza research back in the early 1960's, that observation was that bread and pizza technologies are very different.

Tom Lehmann/The Dough Doctor

1364

/ Re: First attempt at making dough

It sounds like your flour might be too strong so first thing I would do is to see if you can find a lower protein/weaker flour to try. You can also experiment using your existing flour and increasing the finished dough temperature by increasing the water temperature in 5F increments. This will provide for a faster fermentation rate so the dough will receive more total fermentation within a 24/48-hours period of time. Be sure to measure and record the finished (mixed) dough temperature when doing this. The use of a "00" flour will also provide for a more extensible dough but at a higher cost. If you experiment with this type of flour, unless your oven can get up to at least 800F/427C you will need to add at least 2% sugar to the dough formula or a small quantity (0.25%) of a 20-L diastatic malt powder, this is because the "00" flours are not malted so the yeast will run out of nutrient during the fermentation period and the finished crust will be severely lacking in crust

color. Once you get the dough details worked out you can divide the dough into individual pieces, form into balls, wipe with oil and place into individual plastic bags to cold ferment (this process has been discussed here a number of times), then just remove from the fridge and allow to warm to 60F/15.5C, turn the dough out of the bag onto a floured surface and begin opening the the dough ball into a pizza skin.

One last thought, another reason why your dough might be difficult to open would be due to insufficient dough absorption. Again, using your existing flour, increase the dough absorption by 5%, this will provide a softer dough that might prove easier for you to open, again, if you need to add more than 5%, do so by all means but only work in 2% increments after the initial 5% increase. Every flour has a "sweet spot" when it comes to dough absorption so you'll need to experiment to determine what it is for YOUR flour, using YOUR dough formula, using YOUR dough management procedure, and YOUR skill set for the type of pizza YOU want to make.

Tom Lehmann/The Dough Doctor

1365

[/ Re: The effect of yeast percentages on taste](#)

Personally, I think you like the flavor from fermentation ^^^. You're not alone in your preference either as most of use here have similar tastes. You will probably want to look at a 48-hour fermentation period as this provides many of the finished product flavor characteristics you have experienced. You can certainly go to a longer fermentation period too, it all depends upon personal tastes, formulation and how the dough is being managed. At some point you might want to try your hand at making a sourdough crust to see if you like that kind of fermentation flavor profile too as it is entirely different from that achieved from using commercial yeast.

Tom Lehmann/The Dough Doctor

1366

[/ Re: How much of what is in the can do you use?](#)

Here's what I do personally. Remove the tomatoes from the can and tear into pieces, place into colander to drain for 20-minutes +/-, add a little salt and mash slightly then apply to the pizza skin. Save the juice for the next time you make pasta.

Tom Lehmann/The Dough Doctor

1367

[/ Re: when to add salt and oil to dough?](#)

Using the delayed salt addition mixing method is fine if you are making bread where you actually want to have significant gluten development but when making pizza dough where you DO NOT want to have significant gluten development in the dough during mixing, the salt is best added in the water for machine mixing or in the flour when hand mixing. If you are using a coarse granulation salt it should be dissolved in a small portion of the water and added soon after incorporating the

flour. We don't like to add the oil to the water since it will float on top of the water and when you add the flour a portion of the flour will become oil soaked rendering an unknown portion of the flour incapable of absorbing its full amount of water and more importantly that portion of the flour which has been oil soaked will not be able to develop gluten. What this all leads up to is a greater level of inconsistency in your doughs.

Tom Lehmann/The Dough Doctor

1368

[/ Re: Cleaning Pans - What's the best method?](#)

For the Lloyd's pans you can dip in hot soapy water, scrub with a soft plastic bristly pot brush, rinse and sanitize then wipe dry. For the old seasoned pans NEVER put them into water (if you do the seasoning will begin to come off like a bad sunburn and you will need to strip them back down to bare metal before re-seasoning). Just wipe out with a dry bar towel and you'll be just fine. IF you should ever need to wash the seasoned pans here's how:

Grasp pan in hand, dip in soap water, lightly scrub with a soft plastic bristle pot brush, dip in rinse, dip in sanitizer solution, wipe dry, place in oven at 350 to 400F for force dry. Please note that at NO TIME did I say to release your grip on the pan, after picking it up the only time you will put it down is when you place it in the oven to force dry.

Tom Lehmann/The Dough Doctor

1369

[/ Re: Pizza Screens](#)

Two things to remember about screens.

- 1) If you are going to be baking on them ALWAYS season the screens first and then DO NOT wash them as you stand a good risk of the seasoning peeling off.
- 2) Don't proof directly on the screen as the dough can flow into the screen openings and expand during baking effectively locking the pizza to the screen. However, if you transfer the skin to another screen (this places the raised spots there the dough flowed into the screen openings off register) you can store pre-opened skins on screens and you can even proof the dough to some extent providing the dough absorption isn't too high to allow the dough to flow into the screen openings.

Screens are also great for baking bread sticks and calzones too, and if you're baking pan style pizzas in a deck oven or on a stone/steel slip one under the pan to control the bottom heat so you don't get too much bottom crust color or worse, a burnt bottom crust.

Tom Lehmann/The Dough Doctor

1370

[/ Re: Breakfast Pizza](#)

For sausage I like to use breakfast sausage, and for my potatoes I use frozen hash browned potatoes, crispy fried bacon bits fresh tomato slices and some cheddar

cheese. They're also good with a TEX-MEX twist by using 25% Maseca Flour to replace an equal amount of white flour in the dough formula and using picante sauce for the sauce.

Tom Lehmann/The Dough Doctor

1371

/ [**Re: Petezaa's deep dish with semolina**](#)

From the picture I would not have pressed the dough down either, I do like to pull the dough up onto the sides of the pan so they are a little thinner but that's just a personal preference. Overall, that's a good looking deep-dish pizza. :drool:

Tom Lehmann/The Dough Doctor

1372

/ [**Re: Breakfast Pizza**](#)

We did it for many years. While we had some success using raw eggs we had a better product using scrambled eggs as a topping. There was a pizzeria in the Columbus Convention Center Food Court that served a breakfast pizza.

Tom Lehmann/The Dough Doctor

1373

/ [**Re: New User - Hot Shop**](#)

I've written a couple of articles on ovens. The air impingement ovens are by far the best ovens for DELCO shops as they give you the driest pizzas possible, deck ovens are not as well suited to DELCO as they are not as good at providing a dry pizza which is important in this application.

Tom Lehmann/The Dough Doctor

1374

/ [**Re: Causes of thin spots?**](#)

Do you keep a 500-gram bag or individual packets in the Mason jar?

Tom Lehmann/The Dough Doctor

1375

/ [**Re: NY pizzeria yeast amount**](#)

I normally use 0.375% IDY for a 24-hour cold ferment.

Tom Lehmann/The Dough Doctor

1376

/ [**Re: Cooking lower and slower in wood fired/gas rotating oven**](#)

Sure you can, done it any number of times. You can also experiment with baking

your pizzas on a screen and then decking them for the last 15 to 20-seconds.
Tom Lehmann/The Dough Doctor

1377

[/ Re: Causes of thin spots?](#)

Insufficient dough absorption is just another way of saying that sufficient water has not been added to the dough to make it sufficiently malleable to be opened easily. I realize that water/absorption is only part of that equation but if the absorption isn't correct for the flour being used the dough will always tend to fight you during the opening process rather than stretching out evenly for a more uniform skin.
Tom Lehmann/The Dough Doctor

1378

[/ Re: Dough sticking to plastic tray](#)

John;
Without question, those are the best scrapers for plastic dough trays/boxes.
Tom Lehmann/The Dough Doctor

1379

[/ Re: Dough sticking to plastic tray](#)

I deplore metal scrapers in a plastic dough box, it has been voted as the #1 way to tear up you plastic dough boxes. Plastic dough scrapers are just too plentiful and work just as well, if not better.
Tom Lehmann/The Dough Doctor

1380

[/ Re: New Pizza Cutter Idea](#)

If you are looking at ways to cut commercially made pizzas be aware that Colbourne Manufacturing makes an ultra-sonic cutter (20,000+ strokes per second) for cutting pizzas into slices or shapes without any loss or distortion of toppings or crust. All of the New York school pizzas are per-sliced at the manufacturing facility using the ultra-sonic cutters. Additionally, some work is also being done using water jet cutting but the ultra-sonic is easier to install into an existing production line. Anything developed for the retail (pizzeria) industry will have to be low cost, effective, durable, easy to use, safe to use and easy to clean. Right now the retail industry uses pizza wheels, rocker knives of various design (The "Equalizer" by Lloyd Pans is an example of a modified design rocker knife used for cutting multiple slices at once) and even large French/Chef's knives to cut pizzas. If you should want to discuss this with me you may contact me at 785-537-1037 (let me know by e-mail before you plan to call) or you may e-mail me directly at <thedoughdoctor@hotmail.com>
Tom Lehmann/The Dough Doctor

101

/ [Re: 4 day cold ferment neapolitan](#)

Glad to hear that all went well, we wouldn't want to disappoint those guests! :-D
Tom Lehmann/The Dough Doctor

102

/ [Re: Rounder and divders](#)

Remember that you can manually round the dough to just about any level of "tightness" you want, it sounds like you have been rounding your dough loosely which is common for those who wish to use the dough balls relatively soon after rounding. Most rounders are designed to round the dough tightly, some even use two rounders in tandem, or pass the dough balls through the rounder twice as this provides for a better dough ball shape especially after several days of cold fermentation. You're not doing anything wrong, the rounder is just doing what it was specifically designed to do.

Tom Lehmann/The Dough Doctor

103

/ [Re: Rounder and divders](#)

Scott;

Yes, track/screw/cone type rounders are not well suited to handling the soft and usually sticky/tacky dough consistency associated with sourdoughs. A good alternative is is a horizontal or belt type rounder sometimes called a bar type rounder. This is a horizontal belt with a specially designed bar placed diagonally across the belt. As the dough ball moves along the belt it contacts the rounding bar causing the dough ball to spin forming it into a ball, however, some oil is required with the use of these rounders. If you're interested in knowing more about this type of rounder I think AM-Manufacturing uses then in some of their high volume hot press equipment packages.

Tom Lehmann/The Dough Doctor

104

/ [Re: Rounder and divders](#)

Walter;

The best thing about the free standing models as opposed to the bench top models is that they can be easily rolled aside, out of the way, when not in use.

Tom Lehmann/The Dough Doctor

105

/ [Re: Which are the factors that affect digestibility?](#)

I can't argue with you on that! For me though, no matter how you cut it, it's still a cheese pizza! :chef:

So much for history and lore. :'(

Maybe someone can shed more light on this? ^^^

Tom Lehmann/The Dough Doctor

106

/ [Re: ny pizza help!!!](#)

The Marsal ovens are great ovens but they do not get as hot as a wood fired oven can. With that said, they will certainly serve you well for making New York style pizzas. Also, in New York City it is common to use All Trumps flour (14% protein content) so any good, strong Canadian flour should work well for you.

Tom Lehmann/The Dough Doctor

107

/ [Re: Cheese boiling/oiling/bubbling](#)

It appears as if there is too much top heat being applied to the pizza during baking. Sometimes spritzing the top of the pizza (cheese) with water can help.

Tom Lehmann/The Dough Doctor

108

/ [Re: Need help proofing my Sicilians](#)

Definitely cool it on a rack, I typically use a spare pizza screen for a cooling rack. If you don't you will just force moisture back into the baked crust and run the risk of getting a gummy crust or collapse of the crumb structure during the cooling of the crust.

Tom Lehmann/The Dough Doctor

109

/ [Re: Which are the factors that affect digestibility?](#)

I didn't either, I always thought that the Margarita had the colors of the Italian flag in honor of Queen Margarita/Margherita. ???

Tom Lehmann/The Dough Doctor

110

/ [Re: Need help proofing my Sicilians](#)

When you see this beginning to happen in the oven break out your handy "bubble popper" aka BBQ fork to deflate it and press it down a bit. It will also help if you cool it upside down too as this will help to flatten the top.

Tom Lehmann/The Dough Doctor

111

/ [Re: Which are the factors that affect digestibility?](#)

Now I'm beginning to wonder where the green color on a Margarita came from????

Hummm :o
Tom Lehmann/The Dough Doctor

112

[/ Re: Yeast - Fresh or IDY](#)

You just put the IDY into about 5 times its weight of water at 95F. and remove an equal amount of dough water. No other changes are needed. Many of us already do something similar to this when we need to use just a very small amount of IDY, For example, let's say you need to use 1/10-gram IDY but your scale won't handle anything that small, what to do?? Just weigh 1-gram into a container with 10-ounces of 95F water, stir well to SUSPEND the IDY and portion out 1-ounce of the suspension, there will be approximately 1/10 of a gram of IDY in that 1-ounce of yeast suspension, just make sure you also reduce the dough water by 1-ounce too. If the IDY is unopened you will lose about 25% of the gassing power from the IDY after 2-years of frozen storage. If the package is opened all bets are off of the table. We found the best way to store IDY is to leave it in the original container, use what you need, fold the packaging down tightly to the IDY in the package and secure with tape or a rubber band. To use the next time: DO NOT use directly from the fridge or freezer!! Instead, remove from the fridge or freezer and allow to set at room temperature overnight, then use what you need and repeat the above procedure. This will reduce the probability of forming condensation in the package which is death to the IDY. We never recommended holding IDY after opening for more than 3-months (refrigerated or frozen) for home use. If you're into vacuum packaging you could break a 454-gram brick down into smaller portions and vacuum package for refrigerated or frozen storage of a year or more. Opening a package and putting it into a glass jar with a tight fitting lid serves no useful purpose as the idea is to exclude as much oxygen from the package as possible, that's why the 454-gram bricks are vacuum packaged. By folding the packaging down around the IDY and securing tightly you effectively reduce the head space in the package and reduce the contact with the air in the package which is necessary for effectively storing the IDY.

Tom Lehmann/The Dough Doctor
Tom Lehmann/The Dough Doctor

113

[/ Re: Need help proofing my Sicilians](#)

Condensation = water which will be absorbed into the dough over time, then when you go to bake the pizza there is a wet spot in the dough which produces copious amounts of steam or vapor pressure resulting in a beautiful bubble on your pizza.

Tom Lehmann/The Dough Doctor

114

[/ Re: Which are the factors that affect digestibility?](#)

In one of the later tests that we did on pizza we looked at what was the major cause of heart burn with individuals who ate pizza but had stopped eating it due to the heart burn issue. While it is true that highly acid foods can cause heart burn, in

pizza we found that it was the dried basil and dried oregano that were more often than not the culprit. When we deleted these ingredients from the pizza and replaced them with fresh basil or oregano leaves our test group said that they did not experience the heart burn they had previously experienced and indicated that if given the opportunity to purchase the pizzas made using the fresh basil and/or oregano they would consume pizza more frequently. As an off-shoot from this study we also found that our sensory panel could taste the cheese better than when the dried counterparts were used. We confirmed these observations by making pizzas using only fresh basil and/or oregano and putting them out at the Ohio Pizza Show as well as the PMQ Pizza Show and asking samplers for their comments. The #1 comment was: "What kind of cheese was used to make this pizza? It has a great flavor!" We were using 4-ounces of Grande whole milk mozzarella on our 12-inch pizzas.

Tom Lehmann/The Dough Doctor

115

[/ Re: Left the lid off in the fridge - dry dough - what should I do?](#)

The crust that forms is actually insoluble so spraying with water really doesn't help much. Mixing it into the dough as you've done is OK and you'll probably not even notice it with a thin crust pizza but in some cases it will form hard little bits (like what's this?) in the finished crust. The best way I've found to address this is to just leave the dough alone after covering it, then orient it so the crust is on the bottom when you open the dough into a skin. The way crackers are made is to sheet the dough into a continuous ribbon and apply heat along with airflow to the top of the dough to form a dry skin/crust. The dough is then laminated (referred to as dry laminating) and the process repeated again to achieve the desired flakiness in the finished cracker.

Tom Lehmann/The Dough Doctor

116

[/ Re: Need help proofing my Sicilians](#)

You can certainly speed up the proofing process by placing the panned dough into an environment where you have not more than 105F with 85 to 87% relative humidity. A warm place with a damp towel draped over the pan seems to work pretty well for me (just be careful so the towel does not contact the dough or it will stick to it). I use a piece of plastic when proofing at room temperature but when proofing at an elevated temperature I get too much condensation formation on the plastic which drips onto the dough, the damp towel provides the humidity while preventing condensation from forming.

You will have to experiment with proofing times under YOUR conditions to arrive at a proofing time. Using four pans of panned dough, allow to proof for 15, 30, 45 and 60-minutes prior to baking, dress each pizza the same and bake all at the same temperature, then pick the one that you like best. If you have kept track of the times and temperatures and you can replicate the proofing conditions you will have your parameters for making your Sicilian style pizzas.

Tom Lehmann/The Dough Doctor

117

/ Re: Yeast - Fresh or IDY

When we did studies on IDY we found that 95F was the ideal water temperature for suspending the IDY in. A variation of as little as 5F higher or lower resulted in a reduction in gassing/fermentation performance with a greater loss in performance with a lower water temperature than 95F. This is not due to a difference in the yeast itself but instead in the way the yeast agglomerates are designed. They are designed to be fast/instant hydrating, as a result when hydrated in cold water glutathione is leached out of the cells which impairs the ability of the yeast to ferment and the now free glutathione will act as a reducing agent (just as "dead yeast"/RS-190) does making for a softer, more extensible dough condition at the expense of an inconsistent rate of fermentation.

Tom Lehmann/The Dough Doctor

118

/ Re: Need help proofing my Sicilians

Your issue is with fermentation, not proofing of the dough. Proofing is done after you fit the dough into the pan and it ends when you bake the pizza. Most Sicilian pizzas are proofed for about an hour before baking.

By all means reduce the yeast! Remember, we're making pizza dough, not nitroglycerin. Even in commercial application we have to make yeast and/or temperature adjustments for walk-in coolers which are very efficient and reach-in coolers which are not as efficient.

After you take the dough out of the fridge and open it up to fit the pan it will warm up quit fast but it's normal to pull the dough out of the fridge a couple hours before that to allow the dough to warm up (50 to 60F), so now the dough is actually at fermentation temperature already. I usually cover my Sicilian style pizzas with a sheet of plastic for the proofing stage. You will need to experiment with the proofing time depending upon your dough formula and dough management procedure to determine what time actually works best for you.

Tom Lehmann/The Dough Doctor

119

/ Re: Yeast - Fresh or IDY

When using IDY how are you adding it? The conversion from CY to IDY is to use roughly 60% less, not more. If you are machine mixing you can add the IDY directly into the flour providing the total mixing time is 5-minutes or more. The other way to add it is to suspend it in a small amount of 95F water (USE A THERMOMETER) and stir to suspend, there is no need to activate it as done with ADY.

The only real difference between CY and IDY is moisture content (approximately 80% for CY and 6% for IDY). Because IDY is instant hydrating (that's where its name comes from) it is very easily damaged if hydrated in water that is too hot or especially too cold.

Tom Lehmann/The Dough Doctor

120

/ Re: Getting crust to brown without being too overcooked and hard.

The amount of diastatic malt, like all of the other ingredients, is based on the TOTAL flour weight which includes both the flour in the dough and the preferment.
Tom Lehmann/The Dough Doctor

1381

/ [Re: Window Pane Test](#)

Pizzaman123;
That, my friend is how you can start another sourdough starter having like characteristics to the mother starter from which it was made.
Tom Lehmann/The Dough Doctor

1382

/ [Re: Decaf](#)

Made my day and got a good laugh from the thread. :-D :-D :-D
Tom Lehmann/The Dough Doctor

1383

/ [Re: Dough sticking to plastic tray](#)

The easiest way to remove dough balls from a plastic tray is to use a specially designed dough scraper, designed just for removing the dough balls from the box with minimal distortion as well as scraping any residual dough out of the tray/box after its been emptied. The corners of the scraper are radiused the same as the inside box corners to make this an easy and effective task.
Tom Lehmann/The Dough Doctor

1384

/ [Re: Decaf](#)

Huh? I always thought it was how one referenced a baby cow, "decow" and decaf were standing out in depasture" :-D
How to make decaffeinated coffee taste better: put some type of flavoring into it.....like Baileys Irish Cream.
Tom Lehmann/The Dough Doctor

1385

/ [Re: Window Pane Test](#)

A sourdough starter and a biga are different animals. In the baking industry bigas are called liquid ferments or "brews" and are typically used at levels of 20 to 45% of the total flour weight with total fermentation time running from as short as one hour to as much as 5 or 6-hours. Sourdough starters are much more acid and also have a higher TTA (titratable acidity) which is why they are typically used at lower levels. They are allowed to ferment for days, not hours to develop their unique flavors and the type of fermentation is different too, in a biga the fermentation is

yeast based while in a sourdough starter it is primarily bacterial based. For many years bakers have used "sours", not to be confused with sourdough starters, these sours are nothing more than old dough which has been allowed to ferment to develop acidity as well as flavor. It must be noted that the flavor obtained from these "sours" is nothing like that obtained from a sourdough starter.

Tom Lehmann/The Dough Doctor

1386

/ [**Re: Bulk vs ball ferment**](#)

If your total dough weight is around 18-ounces or less there is essentially no difference between bulk and dough ball cold fermentation. This very topic was discussed in significant detail not too terribly long ago.

Tom Lehmann/The Dough Doctor

1387

/ [**Re: Window Pane Test**](#)

In order to be able to stretch the dough (window pane test) to see a clear gluten film at the mixer (immediately after mixing) the dough MUST be fully developed in the mixer, no two ways about it. You either develop the gluten matrix mechanically (mixing) or biochemically (fermentation). Bread doughs, by nature are essentially fully developed at the mixer but pizza doughs are only mixed to a point of just being incorporated or just to a point on being smooth, they are then subjected to rather lengthy fermentation times which allow for biochemical gluten development to take place, this is why if you stretch out a dough ball at the time of opening you will be able to see a much better formed gluten film than you did after mixing.

Tom Lehmann/The Dough Doctor

1388

/ [**Re: Scale recommendations.....**](#)

My own personal preference is the KD-8000, I'm sure there are better scales available but for the money, capacity and accuracy the KD-8000 is awfully hard to beat. It also takes regular flashlight batteries that never seem to wear out. I use mine all the time for baking, making preserves and fruit butters, jerky and any other kitchen chore requiring me to weigh something. The only thing it might be lacking is the "finesse" in scaling accuracy to make very small doughs, but then I don't make those really small single pizza size doughs so it's not an issue for me, but if it was I could buy a second, smaller scale with the capacity and accuracy needed for those specific tasks. For those interested in my opinion on commercial application scales for use in a pizzeria the scales offered by AND Weighing <www.andweighing.com> / Stein Carlsen <scarlsen@andweighing.com> are really hard to beat. We used them at AIB for a good number of years and like a Timex watch, "they took a licking and kept on ticking", they're extremely durable, accurate and again, they use regular flashlight batteries.

Tom Lehmann/The Dough Doctor

1389

/ Re: HELP!!! Having trouble with 00 Tipo flour.

The longer you allow the dough balls to cold ferment the softer and more extensible (less elastic) they will become, additionally the longer the CF time the more flavorful the finished crust will become after baking. I suggest experimenting with different CF times to see what works best for you under YOUR specific conditions. I'm not sure what you mean by "letting it proof for a few hours"? The only proofing the dough receives is after the dough is fitted to a pan, such as when making a deep-dish pizza. When the dough balls are removed from the fridge after the CF period this is to allow the dough to warm sufficiently for ease of opening the ball into a skin, it is not a proofing period in the true sense. The difference between AP and bread flour is that AP flour has no specific application (that's what All Purpose means, while "bread" flour means that the wheat varieties that the flour is milled from are selected for their ability to make a strong dough (strong gluten) and have good fermentation tolerance which are all desirable characteristics for a bread type flour and are also desirable characteristics for a pizza flour too. In short, you have a better idea of what you are getting with a bread flour than with an all purpose flour. Some all purpose flours are quite good and work well for both bread and pizza while others do not. Bread type flours can generally be counted on to perform in a satisfactory manner across the board.

Tom Lehmann/The Dough Doctor

1390

/ Re: HELP!!! Having trouble with 00 Tipo flour.

First off, put the "00" flour aside for now as it will not give you a dough that will brown properly (hardly at all) given the baking temperature you are using, instead, use a bread type flour that has been malted (it will indicate this on the bag). Rather than working with a "recipe" in volumetric portions get a scale that will weigh in grams so you can weigh all of your ingredients, then get a thermometer to measure the dough temperature. I have a feeling that your water temperature might be WAY too warm. Fresh/compressed yeast isn't necessary you can use either active dry yeast (ADY or instant dry yeast (IDY) which form do you have available to you locally?

Here is a very good dough formula which I am showing in both bakers percent as well as grams.

Flour: 100% 600-grams

Salt: 2% 12-grams

IDY: 0.4% 2.4-grams OR ADY @ 0.5% 3-grams

Water: 390-grams/ml (75F/23.8C

Procedure:

Put water in mixing bowl, then remove a small quantity (50-ml) and heat it up to 100F/37.7C (use the thermometer as this temperature is rather critical), put the yeast into the slightly warmed water along with a pinch of sugar and stir to suspend the yeast, set aside for 10-minutes to allow yeast to hydrate/activate, then pour into the water in the mixing bowl. Add the salt and immediately add the flour and begin mixing by hand or machine. If mixing by machine mix until a smooth dough is achieved, if mixing by hand just mix until ingredients are well incorporated, then cover the bowl with a piece of plastic and set aside to ferment for 90-minutes, turn the fermented dough out of the bowl (use a plastic scraper) onto a floured surface and knead the dough several minutes until it begins to look

smooth, lightly oil the mixing bowl, form the kneaded dough into a ball and lightly oil it, then place it into the oiled mixing bowl, cover with the plastic and allow to ferment for 1 to 2-hours, turn the dough out of the bowl and knead for a minute or two, form into a ball, lightly oil and place back into the mixing bowl, lightly oil the top of the dough ball and place the bowl of dough into the fridge to cold ferment for 2-hours, then cover the bowl with the sheet of plastic and allow to continue cold fermenting for 18 to 48-hours. After the dough has cold fermented, remove it from the fridge and allow it to set at room temperature until the internal temperature of the dough ball reaches 60F/15.5C, it is then ready to remove from the bowl, place it onto a floured surface and open into a pizza skin by your preferred manner. Bake the pizza on a pre-heated pizza stone or steel as hot as possible (allow at least 1-hour to heat the stone or steel). If you want more color on the crust add 2% (12-grams) sugar to the dough formula.

This should give you a pretty decent pizza to begin working with.

Tom Lehmann/The Dough Doctor

1391

[/ Re: Polselli Super](#)

I don't know too much about it except that it is milled from soft wheat varieties as are other "00" type flours. The fermentation for this flour is limited to about 24-hours and it is not malted. It's just a guess, but I would think that Caputo "00" Pizzeria Flour would be a good substitute. Any U.S. milled flours are going to be made from hard wheat varieties so the dough is going to be somewhat different.

Tom Lehmann/The Dough Doctor

1392

[/ Re: Pizza hydration](#)

I like it too, but my go to peel dust is a blend of equal parts of semolina flour, my regular pizza flour and fine grind corn meal. If you query 50 people as to what their favorite peel dust is you will get 50 different opinions. If it works for you and you're comfortable with it, use it. Many pizzerias use nothing but fine corn meal, some use rice flour and some use wheat bran or rice bran, just about anything goes.

Tom Lehmann/The Dough Doctor

1393

[/ Re: difference between IDY and ADY \(glutenboy method vs what Gemignani says\)](#)

When substituting ADY with IDY a good rule is to use 25% less IDY than the amount of ADY you're replacing. When it comes to high speed mixing and IDY even when using a VCM (1825 r.p.m. and about 70-seconds mixing time) the recommendation still stands to suspend the IDY in a small portion of 95 to 100F water. The reason for this is to endure that the yeast agglomerates (particles that you see in the bag) are thoroughly incorporated into the dough as opposed to be enveloped in the dough.

Tom Lehmann/The Dough Doctor

1394

/ Re: Pan thick style vs with Stone

Chicago Bob is spot on! When using a pan you will also be using a release agent such as oil or shortening in the pan which facilitates removing the finished pizza from the pan. Oil will give you a different crust characteristic than shortening. I like to say that oil will provide some level of a fried effect while shortening will provide a bread like crust. By increasing the amount of oil in the pan you can achieve a truly fried crust characteristic, oily like CB said, but fried and crispy. As for baking on a stone, I never liked the idea of baking pan pizzas on a stone as it can be difficult to control the bottom bake. When I bake pan pizzas in a deck oven I always place the pans on a pizza screen to give control over the bottom crust color. For something a little different you might try putting some cheese in the the outer crust (like P.H.) or how about putting some pepperoni in the crust rather than cheese?

Tom Lehmann/The Dough Doctor

1395

/ Re: Pizza hydration

That's a very good point with the excess bench/dusting flour. When the absorption reaches a point where, for whatever reason, excess dusting flour must be used to facilitate handling of the dough, and that flour cannot be removed before the pizza is taken to the oven any flour that is on the bottom of the skin can burn, resulting in a bitter taste. I've found this to be somewhat more problematic when the pizza is baked directly on the deck/stone than when it is baked on a screen, disk or pan. One might think of this as collateral damage from having a dough with an excessively high absorption.

Tom Lehmann/The Dough Doctor

1396

/ Re: Pizza hydration

As with everything else, there are limits to the absorption used when making pizza crusts. To a point, increased absorption will promote greater porosity in the finished crust but only if the gluten strength is sufficient to carry the amount of water being added, and the oven is hot enough to provide the extra oven spring made possible by the higher absorption, additionally, the crust must set fast enough to lock-in the increased volume without without collapsing. All of this must be balanced against the amount of fermentation the dough is subjected to as fermentation has a mellowing/weakening effect upon the gluten structure of the dough which means even though a flour might be sufficiently strong to carry high a high dough absorption if it is subjected to excessive fermentation the gluten will be sufficiently degraded to render it incapable of carrying the high absorption and dough collapse or reduced oven spring will be the end result. Added on to all of this, there are certain genetic properties of the wheat from which the flour is made which will allow the protein/gluten structure to effectively carry more water than other wheat varieties. When breeding for new wheat varieties this is but one of the criteria assessed to determine if a variety will be released for future planting. Indeed, dough absorption can be a rather complex issue.

Tom Lehmann/The Dough Doctor

1397

/ Re: Pizza hydration

I'm in the same boat, back when using a wood fired oven I was making doughs in the 70 to 75% range but now you will most often find me using something in the 62 to 65% range. The type of pizza that I most often make is a N.Y. or New Haven style using cold fermentation in the 2 to 4-day range. I like the flavor and textural properties of the finished crust when made this way, just my own personal preference.

Tom Lehmann/The Dough Doctor

1398

/ Re: Causes of thin spots?

A quick test to see if your dough is being over fermented for the specific flour being used is to reduce the total fermentation time by 1/3 (33.33%), if you see an improvement make further adjustments in the fermentation time. Also opening the dough in oil as opposed to flour might also be responsible so be sure to follow up on that too.

Tom Lehmann/The Dough Doctor

1399

/ Re: Hello from Istanbul

Welcome to the site!

I've visited Istanbul many times in the past, in fact it was my favorite city for holding regional meetings when I was on the McDonalds (hamburger chain) International Task Force. I used to stay at the Divon Hotel. Beautiful city with GREAT shopping.

Tom Lehmann/The Dough Doctor

1400

/ Re: GI metal perforated versus solid turning peel

The wood peels are not intended to be used in the oven, instead they are intended to be used as a prep-peel. In this application I think they are more forgiving than a metal peel as the wood will not contribute to the formation of condensation under the skin as a metal blade peel can in if is allowed to ever get cold (this is a good reason for keeping your peels close to the oven). For many home pizza makers this can't always be done so care must be taken to prevent putting an opened skin on a cold metal peel. With a wood peel it really doesn't make too much difference if the peel is cold or not. I've also noticed that you can leave a dressed skin on a wood peel longer than on a metal peel before it begins to show a penchant for sticking. Its these two characteristics which make it more forgiving.

Tom Lehmann/The Dough Doctor

1401

[/ Re: Blast Freezer question](#)

I would be inclined to go with the Deerfield unit. Good name and strong reputation in freezing equipment.

Tom Lehmann/The Dough Doctor

1402

[/ Re: Help with dough process](#)

Why not use bags? They are a lot easier to manage than trays and require a LOT less space too.

Tom Lehmann/The Dough Doctor

1403

[/ Re: Blast Freezer question](#)

The link took me to one that is only rated to -18C (-0.4F) which is not cold enough. You will need to have one that is rated to -37C or something close to it.

Tom Lehmann/The Dough Doctor

1404

[/ Re: Help with dough process](#)

Since you are going to be using the dough over a 4-hour period of time I think you might be ahead of the game by refrigerating the dough balls immediately after forming and then pulling the dough on a schedule which will allow the dough to warm over a 5 to 6-hour period of time before it is opened into skins for immediate use.

Tom Lehmann/The Dough Doctor

1405

[/ Re: Need some help in a pinch](#)

That's a difficult question to answer as I have no idea of how strong your starter is or if it is a "natural" starter or one based on commercial yeast. The refrigeration process will slow the rate of fermentation regardless of the type of starter being used so I'm guessing that your best bet will be to refrigerate the dough balls and to give them at least 4-hours, or more, to regain activity before opening into skins once you're at the event.

Good Luck!

Tom Lehmann/The Dough Doctor

1406

[/ Re: Help with dough process](#)

You'll be making over 40 pizzas, over what period of time? What is your dough ball weight? How are you planning to bake the pizzas? In a typical home oven this could

be an all day affair, if you have a commercial deck oven, depending upon the size of the oven and size of the pizzas it could take anything from 30-minutes to an hour or more.

Tom Lehmann/The Dough Doctor

1407

/ [Re: Whole wheat](#)

Hopefully the dough felt slightly soft and slightly tacky too, if it didn't you might find that you are too low on absorption.

Tom Lehmann/The Dough Doctor

1408

/ [Re: Pizza Shoppe-style?](#)

I've been to the store in Olathe, KS many times as it's near to where my son lives. The dough is yeast leavened, 50% absorption, and formed using a dough sheeter/roller. They use cutter pans (40-degree shoulder angle) and bake in deck ovens. To use the cutter pan just drape the sheeted skin over the pan and crimp cut by rolling a rolling pin over the top of the pan.

Tom Lehmann/The Dough Doctor

1409

/ [Re: Math & Pizza](#)

Kelly;

While you might "suck" at math, I'm betting that you can figure out the amount for a tip to leave after a meal out, right? If you can do that you can work with bakers percent.

Let's start with your dough "recipe" for a 12" pan. The first thing to do is to get a good scale that will weigh in grams. There are many very good ones available on the internet priced at or under \$50.00.

Portion each ingredient three times and weigh the portion each time and write it down. After you have done this for each ingredient add up the total weight for each ingredient and divide it by three, this will give you the average ingredient weight. Now divide the average weight for each ingredient by the total flour weight and multiply by 100. You have now put your dough "recipe" into a formula based on bakers percent. By the way, flour is ALWAYS 100%.

A 9-inch pan has a surface area of $3.14 \times (4.5 \text{ squared})$ or $3.14 \times 20.25 = 63.585$ square inches.

A 12-inch pan has a surface area of $3.14 \times (6 \text{ squared})$ or $3.14 \times 36 = 113.04$ square inches.

The difference in pan size is $113.04 - 63.585 = 49.455$ square inches.

Divide 49.455 by $113.04 \times 100 = 43.75\%$ difference in pan size. The 12-inch pan is 43.75% larger than the 9-inch pan. Or to put it another way, the 9-inch pan is 43.75% smaller than the 12-inch pan.

To find out how much flour to use in your dough formula for the 9-inch pan:

$100 - 43.75 = 56.25\%$ Your new dough formula will use only 56.25% of the flour weight needed to make the dough for a 12-inch pan.

This is where being able to calculate the amount of a tip comes in handy:
To find your new flour weight for the 9-inch pan, using the flour weight for the 12-inch pan multiply the weight by 56.25 and press the percent key and read the new flour weight in the display.
To find the weight for each of the other ingredients enter the new flour weight for the 9-inch pan then press "X" and enter the bakers percent for that ingredient and press the "%" key, read the ingredient weight in the display.
In this case the flour weight is the cost of the meal and the percent of each ingredient is the amount of tip you want to leave.
You can also use an Excel Spread Sheet to find the ingredient amounts too but you first need to convert your dough "recipe" into a formula based on bakers percent.
Tom Lehmann/The Dough Doctor

1410

/ [**Re: Dough Not Rising - Help!**](#)

Additionally, you didn't provide any information on how you activated the ADY.
Tom Lehmann/The Dough Doctor

1411

/ [**Re: Pressing dough to edge of pan**](#)

Yup, you've identified the culprit. When using a plastic fat, like Crisco, the dough acts as if it were glued to the pan with contact cement. The fat holds the dough to the pan sufficiently long for it to fully relax and not pull away from the edges. When using oil the only really effective action is to press the dough out in the pan several times with at least a 30-minute rest period between each session of fitting the dough to the pan. You can also use your Crisco on the sides of the pan and olive oil on the center portion of the pan if you want to go that route. In my experience even a fully relaxed dough will tend to pull away from the sides of the pan when using only oil in the pan unless you press fit it into the pan multiple times.
Tom Lehmann/The Dough Doctor

1412

/ [**Re: Blast Freezer question**](#)

Proofed, frozen and straight to the oven = Freschetta brand frozen pizzas.
I am not aware of anything along the lines of what you are looking for, nothing that small.
To make pre-proofed frozen pizza you will need to have a freezer capable of reaching temperatures in the -25 to -38F range (ammonia refrigerant) or it will need to be a cryogenic freezer using an industrial cryogen (liquid carbon dioxide or liquid nitrogen) usually adjusted to freeze at -45 to -60F.
Tom Lehmann/The Dough Doctor

1413

/ [**Re: Whole wheat**](#)

Thank you Peter, I don't know what we'd do without you!
Tom Lehmann/The Dough Doctor

1414

/ Re: Rescuing balled CF dough

When you re-ball an over fermented dough the gluten tightens up to the point of being non-elastic (don't need to tell you that) :-D.

You will then need to allow time for the gluten structure to relax once again, depending upon how much over fermented the dough is, this could take anything from 2 or 3-hours to as much as 5 or 6-hours.

Why did the dough blow?

What was the finished dough temperature?

Was the correct amount of yeast used?

Did you leave the dough box open (cross-stacked) for a few hours when you placed it into the fridge?

Did you leave at least 2-inches of space between the dough balls in the box?

Did the amount of dough placed into your fridge cause the temperature to rise in the fridge?

Remember, when loading several dough balls into a home fridge it may be advantageous to lower the finished dough temperature to the 65 to 70F range to compensate for the home fridge.

Tom Lehmann/The Dough Doctor

1415

/ Re: Whole wheat

Actually, whole-wheat flour really doesn't make an unusually dense loaf of bread IF YOU USE THE CORRECT DOUGH ABSORPTION. If you do a search in the archives you will find discussion on how to find the absorption of YOUR SPECIFIC whole-wheat flour. I've also written an article on it too. Getting the absorption correct is the key in making decent dough and finished products using any kind of whole-wheat flour; you will also need to make a "soaker" from the whole-wheat flour aka autolyse. Forty five to sixty minutes is about right for the hydration time as the bran takes some time to hydrate.

Tom Lehmann/The Dough Doctor

1416

/ Re: Cooked Sauce yuk!

Even low temperature pasteurization requires heating to 180F and maintaining that temperature for 30-minutes.

I'll take a pass on anything canned at 140F.

Tom Lehmann/The Dough Doctor

1417

/ Re: Causes of thin spots?

Matt;

Fermentation is more than carbon dioxide production, it is also production of acids and the effects of various enzymes on the gluten forming proteins of the flour. Refrigeration of the dough limits the production of acids and the work of the enzymes resulting in under fermented dough characteristics and performance properties. There is a point in dough rheology where both under fermented dough and over fermented dough have identical characteristics and the only real way to sort them out is by TTA (titratable acidity) of of dough itself with a greater TTA being present in the over fermented dough.

Tom Lehmann/the Dough Doctor

1418

[/ Re: Cooked Sauce yuk!](#)

That's a "new" one to me.

Tom Lehmann/The Dough Doctor

1419

[/ Re: what sort of flour to use to make my own starter?](#)

The only thing I would add is after baking with your new starter, if you like the results, use a portion of it to start another one (use different tools and containers) as a back-up reserve. Starters are easily lost through contamination regular bakers yeast is a contaminant in this case and it can be all but impossible to replicate your original starter. This is why we always say if you don't like your new starter, sanitize your tools, possibly change locations where it's made, and try another one, but just like your computer data, it's always a good idea to back it up. I store my back-up in the fridge and only feed it weekly and it does quite well.

Note:

When I was at AIB my first starters were total failures in my opinion, we had sooo many yeast cells floating around in the air that the yeast always became the dominant micro flora and the resulting flavor was always like that of yeast leavened dough. It wasn't until we took it out of that environment that we were able to make a decent sourdough starter.

Tom Lehmann/The Dough Doctor

1420

[/ Re: Whole wheat](#)

To be considered whole-wheat all of the flour used in making the crust has to be whole-wheat (no white flour allowed). However, if you want to make a wheat crust I would recommend using a blend of 70% white flour and 30% whole-wheat flour.

Tom Lehmann/The Dough Doctor

1421

[/ Re: Causes of thin spots?](#)

Matt;

Typical causes are:
Insufficient dough fermentation.
Excessive dough fermentation.
Insufficient dough absorption.
Opening technique.
Insufficient dough weight.

From the looks of the opened skin I'm guessing insufficient dough fermentation is the problem here.

If you want to see if it's technique use a rolling pin and carefully open the dough to within 2-inches of the full diameter, then complete the opening of the dough skin by hand.

Tom Lehmann/The Dough Doctor

1422

/ [Re: Troubleshooting my Last Bake](#)

Keep us posted on your progress.

Tom Lehmann/The Dough Doctor

1423

/ [Re: Cooked Sauce yuk!](#)

Commercially manufactured sauce as well as tomato products are indeed cooked, they are heated under very controlled conditions to render them safe for the canning process and then quickly cooled to prevent further loss of volatiles which detract from the flavor profile of the product.

Tom Lehmann/The Dough Doctor

1424

/ [Re: Troubleshooting my Last Bake](#)

How do you measure the oven and baking steel temperature, do you use an IR thermometer?

Tom Lehmann/The Dough Doctor

1425

/ [Re: Troubleshooting my Last Bake](#)

In looking at the color of your last pizzas, what is the protein content of your flour and please confirm if it's malted or un-malted. How does the bottom of the pizza look? Decent color or light? I'm guessing that the problem might be a bake issue so also please provide baking information such as temperature, baking platform (what are you baking your pizzas on?) as well as rack position in the oven.

Tom Lehmann/The Dough Doctor

1426

/ Re: Martin's Potato Roll - Is it worth the HYPE?

Oops! Sorry about that!

Good catch there, you're right, it should equal 75%. So the corrected absorption should be $107.8 + 75.95 = 183.75$ which is 75% of 245 (total flour weight). The dough side water amount should show as 75.95-grams while the absorption next to it should be shown as 75%.

Tom Lehmann/The Dough Doctor

1427

/ Re: Best recipe for thin crust dough?

Your calculations are indeed correct.

Tom Lehmann/The Dough Doctor

1428

/ Re: Martin's Potato Roll - Is it worth the HYPE?

Allow me to correct it for you.

It looks like you are using 245-grams of total flour weight.

SPONGE:

Flour: 196 g (80%)

Water: 107.8 g

IDY: 3.675 g

DOUGH:

Flour: 49 g

Water: 26.95 g ($107.8 + 26.95 = 55\%$ of 245)

IDY: 1.225 g

The remainder of the math looks to be OK.

Milk: A high priced form of water. Contains lactose sugar which contributes to crust color development, the formula already has 13% sugar plus dehydrated potatoes for PLENTY of crust color development. The flavor improvement from milk comes from the butterfat content the formula already contains BUTTER. The calcium content of the milk might improve the handling properties of the dough but you can get the same improvement using calcium sulfate at 0.25 to 0.5%. Calcium sulfate aka GYPSUM is readily available from many sources including pharmacies.

Tom Lehmann/the Dough Doctor

1429

/ Re: Best recipe for thin crust dough?

The easiest way to find the "desired water temperature" is to subtract the flour temperature from "145". As for mixing time, whatever time it takes to achieve a smooth, appearing dough, this is usually around 8 to 11-minutes, I've never seen it in the 3 to 4-minute range in a planetary mixer. The amount of ADY specified is indeed correct.

Tom Lehmann/The Dough Doctor

1430

[/ Re: Bulk CF and balling](#)

How big is your "bulk" dough?
Tom Lehmann/The Dough Doctor

1431

[/ Re: Best recipe for thin crust dough?](#)

Flour: 100% (12 top 12.8% protein content)

Salt: 2%

ADY: 0.5%

Oil: 1%

Too bad you don't use any water, but if you did I would expect it to be in the 52 to 55% range.

Mixing: That 20-quart mixer is a poor choice for this type of dough as it isn't powerful enough and there is a distinct probability of destroying the composite sacrificial gears in the mixer. A larger planetary mixer or a small spiral mixer would be a much better choice. Remember, no mixer, no dough.

Put water and yeast suspension in the bowl first, then add the flour and salt, mix 2-minutes at low speed, add the oil and continue mixing at low or medium speed (3rd. speed is for mixing cake batters only) until a smooth dough is achieved.

Target finished dough temperature is 75 to 80F.

Take dough to bench immediately after mixing and scale 10.5 to 11-ounces for 12" pizzas.

Form dough into balls, place into dough trays, wipe the top of each dough ball with oil, cross-stack in the cooler until the internal dough ball temperature reaches 50F (about 2-hours +/-), then down-stack or cover the dough boxes and allow to cold ferment for a minimum of 24-hours (36 to 48-hours is better). Remove dough box from cooler, allow to warm AT (AT) room temperature until the internal dough ball temperature reaches 50F then begin opening into skins for immediate use. Once you begin opening the dough balls into skins the remainder will remain good to use for about 3-hours.

Optional: After opening the skin use a docking wheel to dock the skins prior to dressing.

Tom Lehmann/The Dough Doctor

1432

[/ Re: Troubleshooting my Last Bake](#)

With less than 4-minutes mixing time there is a distinct probability that the yeast is still present in the dough in the form of agglomerates (clumps) rather than dispersed as single cells. This means that you will experience inconsistent yeast activity/fermentation and some of the yeast cells will die and release glutathione into the dough making it soft and sticky/tacky. So in your case it is highly suggested that you suspend the IDY in warm (95F) water prior to adding it to the dough. From your description it sounds like a HOT dough rather than a "warm" dough. Remember, you will begin to damage the yeast at temperatures

approaching 120F and thermal death point is at about 140F. In any case, I think you need to be looking at using cold or ice water for the bulk of the dough water to get the finished dough temperature into the desired temperature range of 75 to 80F.

Tom Lehmann/The Dough Doctor

1433

[**/ Re: Barley Malt**](#)

I second the motion. ^^^

Tom Lehmann/The Dough Doctor

1434

[**/ Re: Dough sticks to box**](#)

Allowing the dough balls to come up to room temperature is allowing them to warm up too much, you only want to allow them to warm AT (AT) room temperature until they reach an internal temperature of 55 to 60F. In a commercial/pizzeria we use 50F which allows the dough balls to have a 2.5 to 3-hour use period after they reach 50F. It's normal for the dough to stick to the box, this is why they make special hard plastic scrapers for removing the dough balls for the box with minimum distortion. You can also use a flexible bowl scraper pretty well to the same effect.

Tom Lehmann/The Dough Doctor

1435

[**/ Re: Martin's Potato Roll - Is it worth the HYPE?**](#)

Here is a good starting point for your potato buns;

Flour: 100% (strong bread type flour with about 12% protein content)

Salt: 2%

Dehydrated potato flakes (non-sulfited): 8%

Sugar: 13%

Shortening: 4%

Instant dry yeast: 2%

Water: 75% (variable)

The buns are best made using an 80/20 sponge-dough process with 1.5% of the IDY in the sponge and the remaining 0.5% added to the dough side as a yeast spike. Sponge absorption should be 55%. The dehydrated potato flakes are added at the dough side. The dough should be mixed to full gluten development. The dough then goes directly from mixing to forming with about a 60-minute final proof before baking at 420F/215.5C for about 15-minutes.

Tom Lehmann/The Dough Doctor

1436

[**/ Re: "Achieve a Lighter, Tastier Thick Crust Pizza".. Formulation Change from Tom L.**](#)

Proofer;

What part of San Diego are you in? My wife is from La Mesa, (she was a school teacher at Chesterton Elementary School) not too far from the country club.

Tom Lehmann/The Dough Doctor

1437

[/ Re: Troubleshooting my Last Bake](#)

Going back to the previously asked question, what was the finished dough temperature (temperature of the dough immediately after mixing)? This is a very important temperature as it will determine how the dough ferments. Also, what is the total mixing time in the processor? If the total mixing time is less than 4-minutes it is highly recommended that the IDY be suspended in a small amount of warm (95F/32.2C) water prior to addition to the dough.

Tom Lehmann/The Dough Doctor

1438

[/ Re: Troubleshooting my Last Bake](#)

Additionally, don't forget to lightly oil the dough balls as you place them into the containers and leave the lids off for at least 2-hours or until the internal dough ball temperature reaches 50F, then apply the lids. This will keep condensation from forming inside the containers making for a wet, sticky dough with a penchant for bubbling during baking.

If you research this in the archives this is what we refer to as cross-stacking and down-stacking.

Tom Lehmann/The Dough Doctor

1439

[/ Re: What can cause dough to be too stretchy?](#)

Mouly;

You mention problems with transferring the prepared skin from the table onto the peel. You might think about getting a short handle wood prep peel. The opened skin is placed on the peel with a little dusting flour under the skin, the skin is then dressed right on the peel and peeled into the oven.

Tom Lehmann/The Dough Doctor

1440

[/ Re: Detroit Style - New Way of doing things](#)

Sure, do it all the time.

Here is the basic procedure:

- 1) Mix
- 2) Scale and ball
- 3) Cold ferment for 24-hours
- 4) Remove dough from cooler and allow to temper AT room temperature for 60-minutes.

- 5) Open dough balls and place into prepared pans.
- 6) Allow panned dough to rest at room temperature for 45-minutes.
- 7) Re-stretch dough to fit pan as it will shrink back during the 45-minute rest period.
- 8) Allow the dough to rest for 30-minutes, and re-stretch again if necessary and place in the cooler. Cover with a sheet of plastic to prevent drying.
- 9) The panned dough should be ready to use after about 2-hours in the cooler and it will keep for the entire day.

Note:

All dough formulas are different so you will need to experiment with the time in step #8 to determine the correct time that will allow the dough to rise to the desired height during baking.

The dough can be taken directly from the cooler to the prep station and then directly to the oven for baking.

Tom Lehmann/The Dough Doctor

1441

[/ Re: My First Post - American Style Dough](#)

Allowing the dough to rest (begin to ferment) for 20-minutes before scaling and balling and CF reduces the ability of the dough to be cooled at a consistent rate so it is actually introducing variability into the process. Finished dough temperature becomes MUCH more critical and that 20-minute rest period has to have a very hard line, not 25 or 30-minutes (we all know human nature). On the other hand it can give you the fermentation effects of a longer time with a shorter fermentation time and maybe more importantly, it can improve the handling properties of the dough during the scaling and balling process, this is important with some high absorption doughs which tend to be somewhat sticky immediately after mixing. To someone making pizzas at home I really don't think it means a lot as to which way you do it (with or without a 20-minute rest period prior to scaling and balling) as you are not trying to make 200 pizzas all look alike and you are not dealing with "hired help" to make the pizzas so staying on schedule is not that much of an issue and if it is you know exactly who to blame ;D

Tom Lehmann/The Dough Doctor

1442

[/ Re: The elasticity and gas problems strike a somewhat experienced pizzaiolo...](#)

To answer your questions, by "rest" you mean fermentation, the answer is yes because this is where the biochemical gluten development takes place. More mixing time/mixing at a higher speed will also develop the gluten, this is basically the way its done in modern high speed bread bakeries where gluten development is a critical factor. Temperature also plays a role as it controls the rate of fermentation. Colder doughs or colder fermentation environments retard the fermentation process so a longer fermentation time is required for the biochemical gluten development to take place.

I think you're over thinking this, just about any properly managed dough will have full gluten development at the time the dough is being opened into a skin. We have discussed machine mixing v/s biochemical gluten development a number of time here, a search through the archives should provide you with some additional

reading material.
Tom Lehmann/The Dough Doctor

1443

[/ Re: The elasticity and gas problems strike a somewhat experienced pizzaiolo...](#)

What you are referencing is referred to as "webbing" of the gluten film, it is an indication of under development. Pizza doughs are always under mixed so don't look for a clear gluten film after mixing unless you're making bread. If you have managed your dough properly you will be able to see a clear gluten film in your dough balls when you open them into skins. When we held our annual pizza seminars we used to open a 12-ounce dough ball to nearly 30-inches in diameter with 4 to 5 people standing in a circle opening the dough together, you could clearly see your skin details through the dough membrane when it was opened about as far as we could get it to go without tearing.
Tom Lehmann/The Dough Doctor

1444

[/ Re: The elasticity and gas problems strike a somewhat experienced pizzaiolo...](#)

Wipe the top of each dough ball with a little oil before placing the box in the fridge. This will prevent the dry skin from forming. We have discussed this method numerous times if you want to search the archives for some extra curricular reading. When cross-stacking the idea is to allow the dough boxes to remain cross-stacked until the internal dough ball temperature reaches 50F, then the boxes can be down-stacked or lidded.

1445

[/ Re: My First Post - American Style Dough](#)

Don't worry about over kneading the dough by hand, it is all but impossible to do so. As for gluten development, biochemical gluten development will do that for you given that the dough will be allowed to ferment for at least 6-hours after mixing. You say your crust does not get crispy, what kind of color are you getting on the top and bottom of the crust? In some convection ovens you get too much top color and not enough bottom color which indicates a poor bake which can result in a less than crispy crust. Also not using sufficient dough for the pizza size can result in loss of crispiness (I personally use a dough loading factor of 0.088 to 0.097 for my 12-inch pizzas). In addition to experimenting with the rack position you might also experiment with turning the convection feature on your oven off as this can result in a more balanced top and bottom bake.
Tom Lehmann/The Dough Doctor

1446

[/ Re: The elasticity and gas problems strike a somewhat experienced pizzaiolo...](#)

Two things might be at play here. First, the salt level is VERY LOW at only 0.2%, I suggest increasing it to something in the 1.75 to 2.5% range, and second I see you

are using dough boxes, are you cross-stacking them for at least two hours before lidding them? If you are not cross-stacking them the dough is both over fermenting as it cannot cool down at a consistent rate and it is also sweating in the box (both of which result in the dough balls flowing together into a single mass).

Tom Lehmann/The Dough Doctor

1447

/ Re: Why the edge isn't puffed ? (photo)

Doing the easy things first, I'd suggest increasing the dough absorption in 2% increments to 62 and 64% to see if that helps. High baking temps demand a high absorption dough that expands readily. Also, when opening your skins be sure to keep your fingers away from the edge.

In the mean time if you can share exactly what you are doing aka dough management (be sure to include times and temperatures) it will help us to better determine what the issue might be.

Tom Lehmann/The Dough Doctor

1448

/ Re: The science of sloppy dough

While all of the things you've mentioned will most certainly contribute to a soft, limp crust I believe that the number one, and most common cause results from improper baking. Baking the pizza at too high of a temperature or short baking (not baking long enough) the pizza are common causes. Additionally, dough that is too dense or opened into a skin that is too thin are also likely causes. A dense dough often results when the dough is opened into a skin by manually pinning the dough to shape it. A skin that is too thin results when one doesn't have sufficient dough ball weight for the size of pizza being made or they erroneously believe that by making the dough thinner it will bake out crispier. The last of the common things that I've found results from allowing the dressed or sauced pizzas to set for a period of time before baking. In this case the moisture from the sauce and/or toppings will migrate into the dough where it will be impossible to bake out resulting in a limp crust AND the development of the "dreaded gum line" just under the sauce. Aside from all of this, remember, just placing the hot pizza on a metal pan or cold surface will result in condensation forming at the interface of the crust creating a wet, soggy pizza. I could probably write a book on this topic alone but these are the most commonly encountered reasons for a limp crust when making pizzas at home, a whole new chapter is started when we discuss this problem at the pizzeria level.

Tom Lehmann/The Dough Doctor

1449

/ Re: Caputo Confusion

The sweetness and impact on crust color from honey and sucrose are the same. Honey is a mix of dextrose and fructose while the enzyme invertase in the yeast (and other microorganisms) hydrolizes the disaccharide sucrose into its component sugars dextrose and fructose, so in the dough both end up being the same. This is

one reason why it can be difficult to ascertain if sugar (sucrose) or honey was used as an ingredient in a yeast leavened baked product. With regard to flavor from honey, aside from sweetness, you would need to get to around the 5% level to detect and flavor from the honey, also keep in mind that the darker the color of the honey the more robust the flavor is, it's also cheaper too. Commercial grade aka bakery grade honey is about the color of black coffee so some care has to be taken or the color of the honey can impact the crumb color making it a dirty gray color, not too bad in a pizza crust but it can be a real problem in bread items where a greater crumb portion is present and more readily visible to the consumer.

Tom Lehmann/The Dough Doctor

1450

/ [Re: gooey dough](#)

No difference in taste, just convenience and one less thing to go wrong, go wrong, go wrong, go wrong.

Tom Lehmann/The Dough Doctor

1451

/ [Re: Dough Management for Mobile Units](#)

I've worked with a number of mobile pizza operations over the years and from what I've seen is that yeast performs better than a sourdough starter under these conditions. This is because the yeast leavened doughs tolerate the cold temperatures better than the culture you have growing in your starter which likes to be kept warm and as you know is counter productive to keeping the dough for any period of time as it tends to get away from you as you have already indicated. Your best bet might be to freeze the dough balls a day ahead of time and set them out to thaw on the day of the event. Thawing time should be relatively short owing to the smaller size dough balls you will most likely be working with (TIP: flatten the balls into "pucks" when you freeze them as they will slack-out faster in this form). You could have one stack of dough trays covered in an insulating wrap (this will be your main supply) and another stack of dough boxes without the insulating wrap which will allow them to slack-out in a few hours and be ready for use. Since all doughs are different you will need to experiment to determine how long these slacked-out dough balls will remain good to use, I'm guessing several hours.

Tom Lehmann/The Dough Doctor

1452

/ [Re: gooey dough](#)

BJ;

I forgot to show the oil in my dough formula. I normally include 2% oil in the dough. When adding the oil use the delayed oil addition mixing method, by this method you hold out the oil for the first 2-minutes of mixing, then add it, mix 1-minute at low speed then continue mixing at medium speed until you get the targeted smooth dough consistency.

Tom Lehmann/The Dough Doctor

1453

/ [Re: "Achieve a Lighter, Tastier Thick Crust Pizza".. Formulation Change from Tom L.](#)

If adding a liquid fat such as oils and melted solid fats in most cases they should be added using the delayed oil mixing method to prevent them from being absorbed into the flour. When adding a solid or plastic fat such as butter, margarine or lard they are best added right along with the flour.

How to determine if the delayed oil addition method needs to be used? Place a small quantity of the fat in question in a small bowl, sprinkle with flour, if the flour absorbs the fat the delayed fat addition method should be used, if it isn't absorbed into the flour the fat can be added along with the flour.

NOTE: Solid/plastic fats should always be added at room temperature or slightly softened. The only exception to this is when we are making a dough where we want to have pieces of the fat dispersed throughout the dough, in that case the fat is frozen and shaved/chipped, and added as a frozen fat so it does not become incorporated into the dough but instead remains as individual fat pieces. This is how a pie crust and many biscuit doughs are made.

Tom Lehmann/The Dough Doctor

1454

/ [Re: Bulk Dough Making](#)

Your first step is to convert your dough (recipe?) into a dough "formula" based on bakers percent. To do this you will need to have the weight of each ingredient including the weight of the starter added to the dough. Then divide the weight of each ingredient as well as the starter by the weight of the flour and multiply by 100. This will give you the ingredient weight in bakers percent.

Once you have your dough formula in bakers percent you can manipulate the size of the dough as desired.

To find the ingredient weight for a new flour weight, using your calculator, enter the new flour weight, then press "X" and enter the bakers percent of the ingredient you want the weight for, now press the "%" key and read the weight of the ingredient in the display. Repeat this for each ingredient including the starter and you will have all of the correct ingredient weights for the new flour weight.

Tom Lehmann/The Dough Doctor

1455

/ [Re: new haven dough recipe](#)

In my humble opinion, a New Haven pizza is just a crispy version of a New York style pizza so any New York pizza dough formula should work well for you.

Tom Lehmann/The Dough Doctor

1456

/ [Re: Dough Experiments - Guidance](#)

I think the ingredient missing from your dough formula is sugar. If you add sugar you can manipulate, to some extent, the rate and way the crust bakes. I'd go back

to your best effort at 100% bottom airflow and add 1% sugar to the dough formula. This will result in the crust browning faster and absorbing heat better for a more thorough bake in the short baking time being employed. If 1% sugar isn't sufficient go to 2% sugar, from there make incremental 0.5% adjustments in the amount of sugar.

NOTE: Due to the extremely efficient heat transfer properties of an air impingement oven the response to sugar in this type of oven is rather fast and at times dramatic so once you find a sugar level that works for you you will need to be "spot-on" with removing the pizzas from the oven, not a problem with a conveyor model but this can be problematic with air deck ovens which is one of the main reasons why I don't encourage fast bakes with this type of oven.

Tom Lehmann/The Dough Doctor

1457

[**/ Re: Suggestion for oven temp**](#)

For ADY use 1/3 more than you would if using IDY.

Tom Lehmann/The Dough Doctor

1458

[**/ Re: "Achieve a Lighter, Tastier Thick Crust Pizza".. Formulation Change from Tom L.**](#)

Forgot to add, try making your pizzas using different types of fats, such as pomace grade olive oil, bacon fat (really good), butter (both fresh and aged for about 3-weeks by letting it set on the kitchen table).

Tom Lehmann/The Dough Doctor

1459

[**/ Re: "Achieve a Lighter, Tastier Thick Crust Pizza".. Formulation Change from Tom L.**](#)

Your pizza looks pretty AWESOME!

Tom Lehmann/The Dough Doctor

1460

[**/ Re: Need help with dough storage!!!!**](#)

Are you looking to use this for your cold fermentation space or are you planning to use it just for temporary holding of the dough for use during the day? The reason why I ask is because I've used prep-table storage at many pizza shows and I can attest to the fact that it just isn't up to holding any quantity of dough under sufficiently cold conditions to work if you are going to CF the dough for much more than about 18-hours. The units were never designed for that purpose. While not the best choice, a much better option for holding the dough during the CF period in a small shop would be a reach-in cooler or a rack type cooler. Reach-in coolers will not allow you to cross-stack the dough boxes so you will need to off-set then front to back for the cross-stack period.

Tom Lehmann/The Dough Doctor

1461

/ [Re: gooey dough](#)

Big Dave used to have his "Old Faithful", here's mine;

Flour: 12 to 12.8% protein content 100%

Salt: 1.75%

Sugar: (optional) 2%

IDY: 0.375%

Water: (variable) 64%

Mix just to a smooth consistency.

Targeted finished dough temperature: 75 to 80F.

Immediately scale and ball.

Place in fermentation container(s).

Wipe the top of each dough ball with a little oil.

Place in fridge UNCOVERED for 2-hours.

Cover container(s).

CF for 24 to 48-hours. 48-hours is better than 24-hours.

Remove from fridge and allow to TEMPER AT room temperature for 2-hours or until the center/core temperature of a dough ball reaches 60F before starting to open into skins.

The window of time to use the dough balls is about 2-hours from the time they reach a core temperature of 60F.

Tom Lehmann/The Dough Doctor

1462

/ [Re: Suggestion for oven temp](#)

I've had my best success with NY style pizzas using a baking temperature of 500 to 550F. If you don't mind your pizzas being a little softer and chewier bake at 700F.

Tom Lehmann/The Dough Doctor

1463

/ [Re: gooey dough](#)

BJ;

Try increasing the yeast a little, now that you are controlling the rate of fermentation your dough might need a little more yeast to meet your specific needs or you might try increasing the finished dough temperature by 2 to 3F. I'd try the increased dough temperature first (increase the temperature of the dough water by 5F) and if that doesn't work go with the increased yeast.

Tom Lehmann/The Dough Doctor

1464

/ [Re: What can cause dough to be too stretchy?](#)

Regarding your peel issues, get your fermentation dialed in correctly and then, if you still have problems peeling the pizza into the oven begin incrementally

reducing the dough absorption to tighten the dough up a little. Remember, every dough has a "sweet spot" when it comes to absorption, you can't just take an absorption percent and plug it into your dough and expect it to always work. This is due to lot to lot variations in flour absorption (we recently discussed this there) as well as differences in the specific way the dough is being managed as well as ones ability to handle a soft dough.

Tom Lehmann/The Dough Doctor

1465

/ Re: CF dough sticking?

Here's a tip to keep condensation from forming in the fermentation container. Lightly oil the dough ball as you place it into the fermentation container, then place into the fridge but DO NOT cover it for at least two hours, then apply the lid and condensation will not be a problem. Warm dough going into a cold fridge will ALWAYS form condensation on the top of the container, by leaving it uncovered (cross-stacked) for at least two hours the dough will have sufficiently chilled so condensation will not be much, if any, issue after covering. This same condensation will make the dough sticky and it might be what's causing the dough to stick to the container too.

Tom Lehmann/The Dough Doctor

1466

/ Re: Struggling with tough crusts

Gluten is what makes the finished crust tough/chewy and fermentation degrades the gluten (sufficient fermentation will turn a dough into soup as it destroys the protein/gluten) so a longer fermentation time will naturally give rise to a more tender eating crust. Actually, 24-hours is a pretty short fermentation time even with the short bulk fermentation time (which is really just fermenting the dough in ball form unless your total dough weight is more than about 18-ounces). My suggestion is to keep the IDY at the same 0.3% level, adjust the water temperature to give you a finished dough temperature in the 75 to 80F range ball immediately after mixing and CF for at least 48-hours. Bench mark from there to find the fermentation time that works best for you.

Tom Lehmann/The Dough Doctor

1467

/ Re: "Achieve a Lighter, Tastier Thick Crust Pizza".. Formulation Change from Tom L.

The type of fat used won't impact the way the dough handles to any great extent, I say this because oil, being a liquid, will help to make the dough a tad softer however it does not impact the extensibility characteristics of the dough. Plastic type fats are most commonly used in thick crust and pan-style pizzas where they help volume of the crust by providing additional strength to the dough during final proofing which in turn improves oven spring characteristics of the dough.

Tom Lehmann/The Dough Doctor

1468

/ Re: "Achieve a Lighter, Tastier Thick Crust Pizza".. Formulation Change from Tom L.

Proofer;

You will need to use 0.6% IDY to replicate the performance of 1.5% CY. I'm not sure what you mean when you ask about different volumes when referencing fats?

Assuming you are weighing your ingredients an ounce of oil is the same as an ounce of butter or lard just as an ounce of ice is the same as an ounce of water.

Tom Lehmann/The Dough Doctor

1469

/ Re: Sauce bleed -through

I use a simple pastry brush with soft bristles. In this case less oil is more desirable, all you want is an oil shine on the skin. Spraying puts WWAAYY too much oil on the skin.

Tip: A good artificial bristle paint brush 1.5 to 2-inches wide works great.

Tom Lehmann/The Dough Doctor

1470

/ Re: adding flour during mix

My preference is to add the water, then suspend the CY in the water, add the flour and salt together and mix just until a smooth dough is achieved. This results in a more uniform dough than is achieved if the flour is added in stages.

If you are using a dough absorption over 70% you may find it advantageous to put the water in the bowl followed by the flour and mix just enough to incorporate the flour, then allow this (autolyse) to rest for about 30-minutes, add the CY and mix for 2-minutes then add the salt and mix until a smooth dough is achieved.

Tom Lehmann/The Dough Doctor

1471

/ Re: Bakingbusiness.com Article: Emulsifiers

I've never heard of pure lecithin being an egg "replacement". One whole egg only contains about 125 milligrams of lecithin with the remainder being mostly water, protein and fat. While the lecithin could be a stand-in for the fat content it certainly won't coagulate like the egg protein does and it will contribute little to no impact upon the browning reaction due to the protein content and this doesn't even address the nutritional properties of the egg.

Tom Lehmann/The Dough Doctor

1472

/ Re: Houston Floods.....AGAIN!!!

I was in Sydney, Australia a number of years ago when we had a monsoon come shore, it dumped the equivalent of 42-inches of rain in 24-hours, it was like having a fire hose pointed directly at you for 24-hours! Not exactly something I would want to go through again if I could help it.

To all of our friends in the path of the storm I echo the words of Jackitup; Stay safe!
Tom Lehmann/The Dough Doctor

1473

[/ Re: Bulk Ferment in Fridge for 48 hours??](#)

It all depends upon how big your "bulk" dough is weight wise, will assume it's in a bowl. There are also lots of other factors which could influence how the dough preforms under such conditions too, such as the finished dough temperature and if the dough is covered or left open for a period of time (cross-stacked) after being placed in the fridge. The short answer to your question is that if your total dough weight is about 18-ounces or less your "bulk" dough is really just a larger size dough ball and it will act as one during the cold fermentation period.

Tom Lehmann/The Dough Doctor

1474

[/ Re: Deck ovens](#)

Yes, but please define "portable" for your specific needs.

Tom Lehmann/The Dough Doctor

1475

[/ Re: Second-hand Mixer Score](#)

The attachments as well as the attachment method appear to be very much like that of a Hobart mixer. You might want to see if Hobart mixing attachments will fit it.

Tom Lehmann/The Dough Doctor

1476

[/ Re: Non-stick Peel](#)

While Teflon works with releasing baked dough (crust) it will not release raw dough as is the case when peeling a pizza into the oven. Sticking is not an issue with an oven peel since the dough is already baked and crusted. The idea with a prep peel is to put a coarse material onto the peel as a "peel dust" before placing the dough skin onto the peel, the peel dust will act as ball bearings under the dough to allow it to be easily shuffled off of the peel either in a single stroke or several short strokes.

Tom Lehmann/The Dough Doctor

1477

[/ Re: Struggling with tough crusts](#)

Also, as I've said so many times before, oil/fat is a "tenderizer" as such it contributes greatly to a more tender eating characteristic of the finished pizza. If you want to see this first hand just buy two packages of tortillas, one a regular

tortilla and the other a fat free tortilla, eat one of each and you will see how it influences the texture of the tortilla. It does the same thing in pizza crusts too.
Tom Lehmann/The Dough Doctor

1478

/ Re: PH pan rolled thin?

Absolutely! There really isn't anything very special about the PH thick crust dough that would prohibit its use in making a thin crust pizza. There are some commercial frozen pizzas being made using cold pressing equipment which requires the skin to be pressed onto a special pan, and since a pan comes into play oil is needed to facilitate release of the crust from the pan (crusts are par-baked) hence they are fried as opposed to being baked in the traditional manner and don't forget about the Celeste brand frozen pizzas, they are made using a fried crust. Frying absolutely improves the crispiness of the finished crust (any crust formulation), so if you want to use a PH thick crust clone dough formulation and bake it in a pan using oil as a thin crust go for it, it will absolutely work.

Tom Lehmann/The Dough Doctor

1479

/ Re: A Couple of Dough Management Questions

I did quite a bit of work with the different Caputo flours last year, the Caputo Pizzeria, while high in protein content doesn't exhibit good fermentation tolerance which is a characteristic of the soft wheat protein as opposed to the amount of protein present. When it comes to adding sourdough starters it's a wild guess as to how much to use unless you know both the pH and TTA of the starter you're adding. It might be a case of your starter just being too strong at the 20% level so my first inclination would be to use it at a lower use level, maybe try it at 15% and then 10% to see if that helps any. Remember, a dough that has excessive acidity will be weak and tear easily and it also might show signs of being difficult to achieve a decent bottom crust color.

Tom Lehmann/The Dough Doctor

1480

/ Re: stretch and fold and FDT

First off, 0.2 to 0.3% IDY is not exactly what I'd call a "trace" amount of IDY, it's essentially a full dose of IDY for a CF dough. This in itself might be the source of some of your issues? I wouldn't recommend going to the lower finished dough temperature as you've proposed since it will be much more difficult to consistently achieve (the further your targeted finished dough temperature is from the room temperature the more difficult it will be to consistently achieve your targeted finished dough temperature. My advice is to keep it where its at in the 70 to 75F range.

Tom Lehmann/ The Dough Doctor

1481

/ Re: A Couple of Dough Management Questions

It's impossible to comment on your question regarding the yeast amount as we don't know how much you're presently using, but the advice you got about using a fork type mixer and not cross-stacking is incorrect in my humble opinion. The reason for cross-stacking is to achieve improved consistency in cooling the dough balls AND to eliminate the formation of condensation within the dough box due to the dough being warmer than the ambient temperature in the cooler. It's just a matter of basic physics.

Tom Lehmann/The Dough Doctor

1482

/ Re: Pizza dough - 2 and 3 days cold ferment

With 1Kg. of flour weight you will need to use approximately 3.75-grams of IDY or 5-grams of ADY when using the dough management procedure I've described. 7-grams would be WWAAYY too much.

Tom Lehmann/The Dough Doctor

1483

/ Re: GM Unbleached AP Recall

There's a reason why it is highly suggested that flour not be consumed raw. It's a miracle that this doesn't happen more than it actually does when you consider how wheat is handled and processed into flour.

Tom Lehmann/The Dough Doctor

1484

/ Re: What can cause dough to be too stretchy?

Forget the "window pane" test unless you're planning to make bread. If the dough is too sticky for you to easily handle just lightly oil your hands. You only need to mix the dough until the lumps are worked out of it, bio-chemical gluten development will take care of the rest for you.

After mixing the dough the temperature should be in the 70 to 75F range (achieve this by adjusting the water temperature). After mixing, immediately scale and ball, place the dough balls in your fermentation containers or lightly oil the dough balls and place in individual Food

Saver plastic bags (like bread bags) DO NOT use Zip-Lock bags. We have discussed how to use the plastic bags many time here so a quick search will give you full details on how to do it if you wish to go that route.

Be sure to lightly oil the top of each dough ball after placing it in the container and leave it uncovered for at least 2-hours, then apply the lid for the remainder of the time in the fridge.

When ready to use the dough remove from the fridge at least 2-hours prior to use time. You want the dough to warm to an internal temperature in the 55 to 60F range before opening, once the dough has reached this temperature it will remain good to use for a period of 2 to 3-hours depending upon temperature.

Tom Lehmann/The Dough Doctor

1485

/ [Re: Sauce bleed -through](#)

JPB;

Bleed through can be a problem if you are stretching the dough very thin and not applying a light film of oil to the skin before saucing. It can be a problem resulting in a gum line on just about any type of skin/crust if you allow the dough to set for an extended period of time after saucing (again lightly oiling the dough helps here too). My dough weights for a 12-inch pizza go as low as 9.5-ounces and I've never had an issue with bleed through even when the pizzas are staged for a few minutes prior to going into the oven (this is with a decent sauce that isn't separating), and when I'm using fresh tomato slices as I typically do at this time of the year I ALWAYS lightly oil the dough skins prior to application of the tomato slices.

NOTE: Bleed through tends to be more of a problem with doughs that do not contain any oil/fat than with doughs that contain 1 or 2% oil/fat, this is because the oil in the dough helps to prevent the migration of moisture from the sauce/toppings into the dough before, during and after baking.

Tom Lehmann/The Dough Doctor

1486

/ [Re: thin spot in my dough when stretching](#)

Agreed, more information would be useful, but also keep in mind that this is a common problem if the dough is not being opened correctly. be sure to stretch the edges of the dough as well as the center section, failure to do so usually results in an overly thin center section. I have some video footage of how to open a dough ball shown on my web site <www.doughdoctor.com> that may be helpful.

Tom Lehmann/The Dough Doctor

1487

/ [Re: Pizza dough - 2 and 3 days cold ferment](#)

Just make sure you ball the dough immediately after mixing (finished dough temperature 70 to 75F), and leave the containers OPEN for at least two hours after placing them into the fridge, then lid. It is suggested that you lightly oil the top of each dough ball after placing in the fermentation container as this will prevent the dough from drying out during the time its uncovered. When you remove the dough from the fridge for final use allow the dough balls to warm to an internal temperature in the 55 to 60F/12.7 to 15.5C range before beginning to open them into skins. Once the dough balls have reached the target temperature range they should remain good to use for a period of 2 to 3-hours. Just remember to keep them cover to prevent drying after you remove them from the fridge.

Tom Lehmann/The Dough Doctor

1488

/ [Re: Oil in dough](#)

You should be fine with 1 to 2% oil. It will promote improved/greater oven spring and flavor in the finished crust.

Tom Lehmann/The Dough Doctor

1489

/ [Re: Sauce bleed -through](#)

??????? ???

Tom Lehmann/The Dough Doctor

1490

/ [Re: What can cause dough to be too stretchy?](#)

I didn't see any mention of finished dough temperature which has a very high probability of being another variable, and one which has a significant impact upon the amount of fermentation the dough will receive in any given period of time. If the dough was warmer it could account for the difference, additionally, the 3-hours warming period after CF could also be a contributor. As for the differences in yeast, if the CY was fresh and used at the correct substitution level I wouldn't expect any issues, but if the CY was not properly stored or old, or used at the incorrect substitution level for ADY it could be a contributor. By the way, the correct substitution of CY for ADY is twice as much CY as ADY.

Tom Lehmann/The Dough Doctor

1491

/ [Re: Cooked Sauce yuk!](#)

The sauce gets cooked on the pizza during the normal baking process so there is no need to cook the sauce prior to application on the dough skin. Some like to "bloom" their herbs, if that's the case just put the herbs in a little oil and lightly heat then add to the sauce and stir in. If you like the aroma of the sauce when it's being cooked just remember that those aromas are lost forever and will never be enjoyed as part of your pizza flavor profile. Plus cooking the sauce prior to use leaves the door open for something to go wrong during the cooking process, like scorching the sauce, when this happens it doesn't take much to ruin the sauce.

Tom Lehmann/The Dough Doctor

1492

/ [Re: Bakingbusiness.com Article: Emulsifiers](#)

If you're looking for a way to make your bread softer and maybe extend the shelf life by a day or so the oldest trick used by bakers to create a softer bread with improved shelf life characteristics is the use of mashed potatoes/potato flakes in the dough. Typically, 5 to 10% dehydrated potato flakes is all that's needed (remember that potato flakes will require an increase in dough absorption equal to about 2.5 times the weight of potato flakes being added. We use 2.5% dehydrated potato flakes in pizza dough that was developed for use in Japan where they wanted a soft eating finished crust. A couple of things to keep in mind, the addition

of potato flakes to the dough will increase crust color development and be sure to use non-sulfited potato flakes as the sulfites (added to prevent the potatoes from oxidizing to a brown/gray color) will also adversely impact the yeast activity. Overall, we have found very little real application for "emulsifiers" in pizza dough. The two main ones being used are SSL (sodium stearoyl lactylate) and DATEM (diacetyl tar taric acid esters of mono glycerides). Both of these act in a similar manner in both bread and pizza doughs as dough strengtheners (prevents/minimizes dough collapse as it is mechanically transferred to the oven for baking) and most importantly, in pizza dough it enhances oven spring by about 15%, but consider this, in bread that's 15% of a dough that has a height of about 115-mm while for a pizza crust that 15% of 2 to 3-mm for a thin crust or maybe 15 to 20-mm for a thick crust.....in pizza that equates to a 0.3 to 0.45-mm height enhancement for thin crust or a 2.25 to 3-mm height enhancement for a thick crust. The standard deviation in height for both types of crusts exceeds those enhancements! So why are they use? The answer is to ensure that the dough doesn't suffer total collapse at the hands of the consumer.

In my early years at AIB I did much of the applications work on the use of emulsifiers in different dough systems. By the way, try to stay away from using a high ratio cake shortening in any pizza dough, these specialized shortenings contain poly-sorbates aka "Tween" to enhance batter aeration of the batter, the insidious thing about the poly-sorbates is that water can be mixed into water in their presence, without physical agitation, this means that if used in the dough, the water released from the sauce/toppings can/will migrate directly into the dough to create a wet, pasta like gum line under the sauce thus destroying the textural properties of the finished crust.

Tom Lehmann/The Dough Doctor

Tom Lehmann/The Dough Doctor

1493

/ [**Re: Grease commercial mixer**](#)

I had one of the old M-800 Hobart mixers back in the 60's and early 70's. If I remember correctly there is a
n oil fill cup located on top of the planetary mechanism. Also, be sure to lubricate the bowl lift mechanism and adjust the agitator to bowl clearance (use a nickel) to set the clearance. You might be able to get a schematic on it directly from Hobart Corporation in Troy, Ohio.

Tom Lehmann/The Dough Doctor

1494

/ [**Re: Fast Casual Chain & Pizza**](#)

Looks a lot like the old P.H Big Foot pizza.

Tom Lehmann/The Dough Doctor

1495

/ [**Re: Flour Experimentation**](#)

No "rule" but there is a procedure.

- 1) Calculate the absorption for the amount (weight) of "00" flour.
- 2) Calculate the absorption for the amount (weight) of rye or whole wheat flour. For rye flour and whole wheat flour use 75%.
- 3) Add the two absorptions and this will be the total amount of water to add to the dough. Note: The actual, final absorption may need to be adjusted slightly, but this will get you close enough to make pizza on your first "go around".

When expressing the dough absorption in bakers percent divide the weight of water added by the total/combined weight of the "00" and rye or whole wheat flours and multiply by 100.

Tom Lehmann/The Dough Doctor

1496

/ Re: Tom Lehmanns Dough Management

The dough management procedure is the same whether the dough is mixed by hand or machine.

Tom Lehmann/The Dough Doctor

1497

/ Re: Water Temp for NY Style

Steven;

I will assume your room temperature is 70F. which is pretty normal, so you will need to use water at about 65F to achieve a targeted finished dough temperature on the 80 to 85F range. The easiest way to find the desired water temperature for a targeted finished dough temperature in the 80 to 85F range is to subtract the flour temperature from 145 which will give you the approximate desired water temperature.

Tom Lehmann/The Dough Doctor

1498

/ Re: Cross Stack and Seal

It's not a case of "could it be the problem", it is the problem. Cold dough right out of the cooler will always bubble unless the dough has been specifically formulated for use in this manner. Why don't you just pre-open the skins, place them on pizza screens and store in a wire tree rack (covered with a food contact approved plastic bag) in the cooler? This way all you need to do to fill an order is to remove a skin, turn it off of the screen and manually clean it up a little (hand/table stretch) then dress it to the order and it's ready for the oven. Because of the greater surface area and reduced cross section the skin will have warmed sufficiently so as to reduce or eliminate the bubbling by the time you're finished dressing the skin, and if you want to go the "belt and suspenders" route, just dock the skin immediately before beginning to dress it.

Tom Lehmann/The Dough Doctor

1499

/ Re: Flour Experimentation

Jared;

I'm confused over exactly what flour/flour blend you used. Was it whole wheat flour, was it rye flour, a blend of rye flour and whole wheat flour or a blend of "00" plus whole wheat and rye flour?

To answer your basic question, both whole wheat and rye flour have a significantly higher absorption than "00" flour and unless this higher absorption rate is accounted for either/both will result in a dry, stiff dough. By the way, both rye and whole wheat flour will have a shorter fermentation requirement than "00" flour.

Tom Lehmann/The Dough Doctor

1500

[/ Re: Cross Stack and Seal](#)

Q.J.;

Spot-on! There is also less head-space for the condensation to collect in. At the end of the day the sheet pans are also faster and easier to clean, not to mention the fact that they are significantly cheaper to purchase too.

Tom Lehmann/The Dough Doctor

1501

[/ Re: What temp and time?](#)

If your oven is of one of the newer generation air impingement ovens (less than 10-years old) it may bake pan pizzas at the same time and temperature as your thin crust pizzas. If your oven is one of the older designs start at 435F for 7.5-minutes and bench make from there.

There are just too many different designs of air impingement ovens as well as finger profiles to be more specific.

Tom Lehmann/The Dough Doctor

1502

[/ Re: Cross Stack and Seal](#)

One trick that will work well in high volume situations is to use aluminum sheet pans. Place the dough balls onto the sheet pans and lightly oil the top of each dough ball, then slip a food contact approved plastic bag over the entire sheet pan, pull the bottom of the bag up over the first row of dough balls then pull the top down and tuck it under the pan. This works quite well and is commonly used in commercial pizzeria applications. The plastic bags can be reused a number of times too. Just be sure to use a plastic scraper to lift the dough balls off of the pan as a metal scraper will gouge the aluminum sheet pan. The best way to store the sheet pans is in a rolling vertical rack with a 5-inch shelf spacing.

Tom Lehmann/The Dough Doctor

1503

[/ Re: Yeast %](#)

That would make a lot more sense :-D

Tom Lehmann/The Dough Doctor

1504

/ [Re: Yeast %](#)

Are you sure about those dough weights? They seem pretty light to me for those sizes. I've never been able to open one pound of dough to much more than 30-inches and at that it was too thin for making a decent pizza in my opinion. For a 40-inch pizza I would be using something closer to 6# of dough as opposed to a little over one pound. Am I missing something?

Tom Lehmann/The Dough Doctor

1505

/ [Re: Dough trays - cheaper alternatives?](#)

Plastic Food Saver bags! They work better than dough boxes, a lot cheaper too. If you will search back in the archives (not very long ago) we had quite a bit of discussion on this very topic.

Tom Lehmann/The Dough Doctor

1506

/ [Re: Manage floor temp w many bakes](#)

Some commercial wood fired ovens will have decks 6 to 8-inches thick which hold a LOT of latent heat. The downside is that ours took 3-days to reach full operating temperature from a cold oven which is a real pain. The one thing that I got out of it is an appreciation for a dual fuel (wood and gas) oven. The gas is used to maintain an idle temperature during the night and on any days that the store might be closed while the wood does the work during business hours. Back when all of our ovens were either wood or coal/anthracite fired there was good reason to live above the shop if you were a baker or pizzeria operator.

Tom Lehmann/The Dough Doctor

1507

/ [Re: World record for fastest bake](#)

When was the last time you saw prime rib advertised as being fast baked/roasted? Baking develops flavor, just try a pizza before and after baking to prove this to yourself. A longer/slower bake for the type of pizza being made will always have more flavor than one that is baked as fast as possible. Sometimes it's only a matter of a few seconds more bake that makes the difference between a good pizza and a great pizza. Case in point, one of the major box pizza chains has an OK pizza but if they would bake it 30-seconds longer it would be a much better pizza all around, I guess corporate feels that they would lose too much business if they baked their pizzas for 30-seconds longer, you can only wonder if they ever looked at the other side of the coin?

Tom Lehmann/The Dough Doctor

1508

[/ Re: Not NY Style dough formula please](#)

If you will provide us with your present dough formula and procedure I will be glad to change it up to produce more of the characteristics which you are looking for.
Tom Lehmann/The Dough Doctor

1509

[/ Re: Cake yeast ?](#)

Yael;
I hope there ain't any shakin' going on while you're there.
Got a little shaky when I was there last.
Tom Lehmann/The Dough Doctor

1510

[/ Re: Same dough and yet, hmmm?](#)

It's really hard to say what the issue might have been but it might indeed have been the difference in oven temperature or how the pizzas were actually baked between on the screen and on the deck. When on the deck even just a few seconds can/will make a significant difference. I've got a hunch that that's where the issue was at.
Tom Lehmann/The Dough Doctor

1511

[/ Re: pizza cutting boards?](#)

Moose;
Are you using "exotic" hardwoods? From the picture it looks like maybe blood wood, tiger wood, maple and possibly ebony? In any case BEAUTIFUL!
Tom Lehmann/The Dough Doctor

1512

[/ Re: Cake yeast ?](#)

Yael;
I've worked in China (Chengdu) and know what you are talking about, in a case like that what I did was to simply add the IDY directly to the dough after it had been mixed to a point where it had just come together in a mass. All it needs after that is at least 5-minutes of mixing and it's good to go.
Tom Lehmann/The Dough Doctor

1513

[/ Re: pizza cutting boards?](#)

Compared to your cutting boards it must look like I'm cutting my pizzas on a rock! Great idea with the long one, the pizzas should remain hot a little longer on the wood board than on a serving tray when multiple pizzas are the order of the day. Now, the multi-colored one, my personal opinion, is that it's GEORGOUS! :drool: :drool: Makes my plain maple board look like a stone!
Well done!
Tom Lehmann/The Dough Doctor

1514

/ [Re: Cake yeast ?](#)

Let's see;
Compressed Yeast/Fresh Yeast/Block or Brick Yeast/Wet Yeast/CY
Disadvantages:
1) It must be kept refrigerated at all times.
2) It has a very limited shelf life, and you may not know how it was stored or how old it is when you buy it.
3) The amount that you use one week will likely be different from the amount needed the following week due to normal deterioration of activity.
4) Must be kept separate from salt and/or sugar.
Advantages:
1) Like Craig said "It sounds cool".
2) Can be added directly into cold water without issue.
3) Can be added to a machine mixed dough just as it is.
4) Lower cost if you are buying it by the pallet load and you are reasonably close to the point of manufacture.
Sorry, I really can't come up with many good reasons for using CY over IDY for most applications.
Tom Lehmann/The Dough Doctor

1515

/ [Re: Longer fermentation in room temp](#)

I might add that your dough ball count per box appears to be a bit high for the size of dough box you're using. There should be a minimum of a 1" space around each dough ball.
Tom Lehmann/The Dough Doctor

1516

/ [Re: Basic questions](#)

All of my peels are from <MrPeel.com> They WILL ALWAYS warp if NOT handled properly.
I also have a peel from <portionpeels.com> which I like a lot as it has laser burned circles on the top side to help size and keep your pizzas round. I believe their peels are also from Mr. Peel.
1) Wipe the new peel with mineral oil over ALL surfaces. This will help to seal the wood.
2) NEVER/NEVER/EVER wash your peel. Wipe it with a slightly damp towel if it

needs cleaning.

3) Over time your peel may develop rough spots, these are easily removed by LIGHTLY sanding with a 220 or finer grit sand paper, and then resealing.

4) Periodically wipe your peel down with a little mineral oil.

5) Remember, wood peels are prep peels, they are not meant to remove pizzas from the oven.

Tom Lehmann/The Dough Doctor

1517

[**/ Re: I don't like my pizza's.**](#)

Michiel;

A good temperature to begin opening the dough balls into skins is 60F when making pizzas at home. What kind of yeast are you using ADY, IDY or CY? In any case, when mixing the dough by hand as you are the yeast should be suspended in the dough water. A good procedure is to add water to the bowl, add the yeast (if ADY or IDY it will need to be hydrated/activated in 100 to 105F water first), CY can be added directly to the cold dough water. Then add the salt and IMMEDIATELY add the flour, mix until the flour is hydrated then add the oil and following your normal mixing procedure from there.

Tom Lehmann/The Dough Doctor

1518

[**/ Re: Basic questions**](#)

It's a lot easier to open the skin and place it onto a wood prep-peel, then dress it as desired and peel it into the oven. Fine corn meal, semolina flour or rice flour are all good for use as a peel dust.

Tom Lehmann/The Dough Doctor

1519

[**/ Re: gooey dough**](#)

Yes, it's a good idea as it will prevent the lid from being blown off due to pressure build-up in the container.

Tom Lehmann/The Dough Doctor

1520

[**/ Re: Basic questions**](#)

My suggestion is to use 0.5% ADY which should be hydrated/activated in about 5 times its weight of water at 100 to 105F.

Adjust the temperature of the remainder of the water to give you a finished dough temperature in the 75 to 80F range (favoring 75F).

To address your peel dust issue please provide your complete dough management procedure.

Tom Lehmann/The Dough Doctor

1521

[/ Re: I don't like my pizza's.](#)

Michiel;

These are my suggestions;

Reduce the salt to 2% (this will allow for slightly more fermentation within your 24-hour period of time.)

Eliminate the semolina flour and replace with your regular white flour. (semolina flour tends to make for a tougher, more elastic dough).

When you're getting ready to open the dough balls into skins you want to allow the dough balls to warm to 55 to 60F before opening the balls into skins. Allowing them to get too warm can result in the dough becoming too bucky/elastic.

Let us know how this works for you. One other thing: Try to target a finished dough temperature in the 70 to 75F/21.1 to 23.9C range.

Tom Lehmann/The Dough Doctor

1522

[/ Re: First time with diastatic malt](#)

Huh? First time I've ever heard that about malt syrup. Malt, whether dry or in syrup form comes in two flavors, diastatic (enzyme active) and non-diastatic (non-enzyme active). Non-diastatic malt is used in the same way that sugar is used with one significant difference, it can provide a flavor other than sweet. At low use levels the flavor is said to be slightly "nutty" while at higher levels (above 3%) the flavor imparted is more like that of malted milk balls (candy). Diastatic malt (usually in the dry, powder form) is used at much lower levels, typically from 0.25 to as much as 0.5% depending upon the Lintner value so it is never used at levels high enough to contribute a flavor. The diastatic malt is a source of alpha amylase enzyme which converts wheat starch into sugars which can be metabolized by bakers yeast. Since this action takes place over time it is commonly used to support long dough fermentation times. It can also contribute to crust color development too as the residual sugars produced will contribute to the browning reaction during baking. Since the starch component of the flour is implicated with the staling process, many commercial bakeries will add diastatic malt to their dough formulations to help with reducing the amount of starch present (it's hydrolized into sugars) which in turn helps to provide for a softer, slower to stale finished bread. When an excess amount of diastatic malt is added to the dough formula the dough will become more and more sticky over time which can make the dough especially difficult to handle during the dough forming stage. This stickiness is impossible to address and has been known to gum-up bread and bagel forming equipment.

I've never heard of any form of malt being associated with making stronger doughs or affecting the dough texture aside from stickiness, but at high levels it could easily hydrolize sufficient starch (starch carries only a small amount of the water prior to baking) which will release the water being carried by the starch to provide for a slightly softer dough, maybe that's what you are seeing? But at levels like this you would also be experiencing significant stickiness in the dough at the same time.

Tom Lehmann/The Dough Doctor

1523

/ Re: gooey dough

In addition to reducing the dough absorption you will also want to NOT lid the containers right away. Instead, lightly oil the dough ball(s) and leave them UNCOVERED for at least 2-hours after placing them into the fridge, this will allow the dough balls to cool without the formation of condensation in the container which I am sure is contributing to the sticky dough condition. After the 2-hour period (uncovered) apply the lids BUT make sure there is a small hole in each lid to vent off any gas formation inside the container. You could also just place a piece of aluminum foil over each container and LOOSELY crimp the foil to the container.
Tom Lehmann/The Dough Doctor

1524

/ Re: Rise Time

You're not going to get the same flavor or textural properties with a 6-hour dough that you would get with a 20-hour cold fermented dough. So now that you have the "ingredient", make your dough and give it the usual 20-hours cold fermentation.
Tom Lehmann/The Dough Doctor

1525

/ Re: Longer fermentation in room temp

I think Amolapizza's suggestion to just keep the dough in bulk longer is an excellent one. When you scale and ball a bulk dough it has a similar effect to re-balling a dough (tightens it up and re-strengthens it). If your flour has the strength to tolerate the additional fermentation this approach might be your best bet. If you should find that the dough is too soft and sticky this would be an indication that you have exceeded the fermentation tolerance of the flour, if that's the case your best bet might be to further reduce the finished dough temperature by utilizing some or all ice water in the dough formulation.
Tom Lehmann/The Dough Doctor

1526

/ Re: FRESH MOZZARELLA ON ROMAN PIZZA: WATERY BASE???

Actually, putting the torn/peeled mozzarella on this way presents the side with the greater surface area to the heat so the moisture has a greater surface area from which to evaporate. Physics #101.
Tom Lehmann/The Dough Doctor

1527

/ Re: I don't like my pizza's.

From the looks of your pizza you're struggling to open the dough. Please provide details on your finished dough temperature and dough management procedure,

this is where the flavor and texture of the finished crust are largely developed and the dough is conditioned for opening without dough memory/snap-back.

Tom Lehmann/The Dough Doctor

1528

/ Re: Question for the Dough Doctor

Where on earth did you get the idea to allow the dough to warm to room temperature before using it? I always say to allow the dough to warm AT room temperature until it reaches 50 to 55F (50F for use in a pizzeria). Doing this will not create a gassy dough ball and it will give you about a 2.5 to 3-hour window of time to use the dough balls from the time they reach an internal temperature of 50F. If when doing this you still have a gassy dough we will need to look at your finished dough temperature. Your room temperature of 25C/77F is pretty typical for a pizzeria so it's not a problem at all.

Tom Lehmann/The Dough Doctor

1529

/ Re: Kitchenaid Mixer has burnt out - What can I use for Neapolitan pizza dough?

Because I'm familiar with the Eurobib as they are at Pizza Expo, but when it comes to spiral mixers, buy whatever you're comfortable with, I've yet to see or hear of a bad one, with that said, take heed if someone takes issue and complains that they have actually used a bad one, you will have narrowed the field of selection down by at least one.

Tom Lehmann/The Dough Doctor

1530

/ Re: What Hydration Makes it "Cracker"?

Your intuition is correct as there just isn't any significant call for it outside of the commercial market. With that said, you can make a fair to middlin' version of it very easily. Just use and U.S. household butter, freeze it and shave it into strands/ribbons like you would a hard cheese or chocolate. Immediately put the shaved butter back into the freezer for at least an hour, remove from freezer and place between two pieces of waxed paper, tap with the handle of a table knife to break the frozen butter into pieces 3/16 to 1/4-inch in size. Immediately place back into the freezer until ready to use. Use a dough absorption of about 56 to 58%, mix until the dough just begins to smooth out, then add the frozen butter chips and mix JUST until they are fairly well incorporated (better to error on under mixing than over mixing. Remove dough from mixing bowl, roll out to about 1/2 to 3/4-inch thickness, give a 3-fold and place into the fridge to rest about an hour, or until the dough can be sheeted again the same way. Rest the dough in the fridge after the second 3-fold for 4-hours, then scale into desired weight pieces (I an inverted coffee can to cut circles), pin out the cut circles of dough to full diameter, the skins can be rested for holding in the fridge or used immediately if the temperature of the dough is at 50 to 55F which it usually is after pinning it out to full diameter. If you store the full size skins in the fridge you will need to allow them to warm to 50 to 55F before use, it won't take very long.

By the way, if you want to read up on how the bakers did this before the advent of hard fat flakes study up on the "Blitz" method of making laminated pastry.

Tom Lerhmann/The Dough Doctor

Tom Lehmann/The Dough Doctor

1531

/ Re: FRESH MOZZARELLA ON ROMAN PIZZA: WATERY BASE???

I've never tried them, but don't let that stop you from giving them a try. When I'm working with fresh mozzarella I slice and layer between clean bar towels for about an hour prior to use. You're over thinking this, it'll give you a headache. :)

Tom Lehmann/The Dough Doctor

1532

/ Re: When to degas the dough?

I agree with Jeff. In my world dough that has been properly managed for cold fermentation really doesn't need to be degassed or re-balled, but room temperature fermented dough can be a totally different story. Dough that has been bulk fermented at room temperature should be "punched" when it reaches its maximum height and just begins to recede a little. Otherwise, the dough will be naturally degassed when you scale and ball it. Dough balls that are fermented at room temperature and become over fermented, for whatever reason, are usually re-balled at the soonest opportunity, this re-balling significantly tightens the dough ball necessitating the need to ferment the dough balls for additional time to allow them to loosen up for ease of opening and reduce dough memory (snap back) of the opened skin.

Note:

In bread production, when a bulk dough (regardless of the temperature at which it is fermented at) reaches its "first full rise" (this is where the dough ferments to its maximum height and then begins to recede on its own as described above) it is deemed to have received 2/3 of its optimum fermentation so after being punched, the dough is given the final 1/3 additional fermentation time before it is scaled and balled. Since pizza doesn't abide by the same rules as bread you have a lot more latitude in fermenting the dough with regard to time and temperature BUT if you venture into the over fermented dough territory, when you go to open the dough balls into skins you will find the dough balls tough and bucky and impossible to open by any means.

Tom Lehmann/The Dough Doctor

1533

/ Re: What Hydration Makes it "Cracker"?

I'm still seeing the same thing. Typical to what we get when using hard fat flakes. Where the fat flakes melt out a void is developed which forms the oval shaped void called a "fish mouth" where there are no fat flakes to melt out the crumb structure consists of smaller round shaped cells. I think we're looking at the same thing just calling them by different names.

Tom Lehmann/The Dough Doctor

1534

/ [Re: Fabricating your own baking steel](#)

A trip over to the local metal salvage yard can turn up some real treasures on a good day.

Tom Lehmann/The Dough Doctor

1535

/ [Re: FRESH MOZZARELLA ON ROMAN PIZZA: WATERY BASE???](#)

It all depends upon the application and type of pizza I'm making. If it's more of an artisan (I'm using that term loosely) I prefer to use the fresh, ditto for New York and Neapolitan, but if it's for most others as well as DELCO I usually opt for a shredded low moisture mozzarella.

Tom Lehmann/The Dough Doctor

1536

/ [Re: FRESH MOZZARELLA ON ROMAN PIZZA: WATERY BASE???](#)

Cut thin and place between towels to drain as best you can or peel it like an orange (that's how I do it) and place the pieces on top of the pizza as the last ingredient. In some cases with home-made cheese we find it necessary to apply the cheese about half way through the bake.

Tom Lehmann/The Dough Doctor

1537

/ [Re: Autolyse](#)

Yes, you only activate the ADY in approximately five times its weight of water, never all of the dough water as you are indicating. Once the ADY has been hydrated and activated it can safely be added directly to ice water if necessary.

Tom Lehmann/The Dough Doctor

1538

/ [Re: What Hydration Makes it "Cracker"?](#)

John/Pete-zza;

Sorry, I don't see any "pin holes" I only see a laminated cell structure with some very classical "fish mouthing". Maybe what you are calling "pin holes" is what I'm seeing?

Your dough looks very much like the dough that we make using hard fat flakes. When it comes to mixing a cracker type crust we have had our best success using a planetary type mixer with a pastry knife attachment. With this attachment the mixing time is significantly longer than with a regular dough mixing attachment but it does a great job of blending the ingredients into a homogeneous mass while distributing the fat evenly throughout the dough. This is the preferred attachment

for making pie dough too so it's no wonder that it works well in this application. The least effective mixer for making the cracker type dough is the spiral mixer, they were never designed for cutting and blending which is what is required for making a cracker type dough.

Tom Lehmann/The Dough Doctor

1539

/ Re: Kitchenaid Mixer has burnt out - What can I use for Neapolitan pizza dough?

If you are going to be mixing doughs on a regular basis, my advice is to "bite the bullet" and buy a spiral mixer. It will most likely be the last mixer you'll ever need to buy (unless you need a larger mixer). Google (Eurodib dough mixers) and take a look at the Eurodib Model LM20T. It's priced at just under \$1,000.00 but as an investment it will be cheaper than several smaller mixers that you may burn-out over the years. This mixer also has the added feature of an 8-Kg. dough capacity while mixing smaller doughs like a "walk in the park".

Tom Lehmann/The Dough Doctor

1540

/ Re: What Hydration Makes it "Cracker"?

Peter;

I think too many people are too wrapped up in dough formulation as a distinguishing feature between thin crispy and cracker. We found that not to be the case at all, you can make a very good cracker type crust using 2% total fat if you are willing to go the lamination route as you can get with 4 to 8% fat by mixing a shaggy dough (about 45-75-seconds). When we did the development work back in the 70's we found that a plastic shortening worked much better than an oil in this application as it did not soak into the flour thus destroying any ability to create crispiness. When we did the development work we looked at how saltine crackers are made (under mixed using a spindle type mixer) and then also looked at how a long to medium flake pie crust is made (has a lot of the characteristics of a cracker type crust) and used that as the basis for our development work. More lately, in the 90's we were looking at the use of hard fat flakes in very under mixed (shaggy) doughs to achieve this. While the results were pretty good we thought the crust was more like that of a laminated croissant than what we were looking for. In my archives I've got the entire procedure using the hard fat flakes captured on a DVD. We ended up using this approach when we were asked to develop a dough for use in making pizza cones where it worked beautifully with just a little modification to allow it to be pressed into the desired cone shape while still retaining the desired flaky characteristics in the finished crust/cone.

1541

/ Re: Soapy taste, leftover pizza?

One of the characteristics of bread staling is loss of flavor. Are you sure this is not what you are picking up on? Bread staling takes place most rapidly at temperatures between 20 and 50F which is why we don't store bread in the fridge (home freezers are not much better either), if you want to make croutons just slice

the bread and store in the fridge overnight and you'll have nice firm bread on the following day.

Tom Lehmann/The Dough Doctor

1542

/ [Re: Autolyse](#)

ADY should be activated in 100 to 105F water to prevent glutathion from leaching out.

Tom Lehmann/The Dough Doctor

1543

/ [Re: What Hydration Makes it "Cracker"?](#)

Thin crispy dyle crusts are indeed sheeted as are cracker style crusts but the absorption is a bit higher, usually around 45% along with a longer mixing time as previously noted. Thin crispy crusts tend to be more dense than cracker style too. We use to say that you know when you're eating a pizza made on a cracker crust when you have crumbs in your lap. A number of years ago we saw commercial attempts at this type of crust, Schwan's probably had the most visible as it was called their Italian Pastry Crust Pizza. While the crust appeared to be laminated it really wasn't, instead it was made using hard fat flakes mixed into the dough to give it a laminated and cracker like appearance. So, what does a real cracker crust look like? It looks like a saltine cracker and it eats somewhat like one too. For those who are old enough to remember, this is the type of crust that put Pizza Hut on the map, it's the original thin crust that they had back in the early 60's, what they have now is more of a thin crispy style. A good example of thin crispy is that made by the Pizza Shoppe (Kansas City) as well as any number of pizza buffets our local Pizza Ranch has a fair to middlin' version of a thin crispy crust.

The only place that I can think of off hand that might still make a cracker type crust (they use to at least) is Incredible Pizza (Springfield, MO.)

Tom Lehmann/The Dough Doctor

1544

/ [Re: Autolyse](#)

Are you pre-activating/hydrating the ADY prior to addition or just adding it dry?

Tom Lehmann/The Dough Doctor

1545

/ [Re: What Hydration Makes it "Cracker"?](#)

Cracker type crusts are typically made using a dough absorption somewhat less than 50% and a mixing time of 2-minutes or less. The dough is handled much like a long flake pie crust and has to be formed using a dough sheeter/roller as it's too tough to open any other way. When the dough is mixed longer to form a homogeneous dough mass the end result will be a thin crispy crust as opposed to a cracker type crust. We have had previous discussion on making cracker type

crusts. If you have ever visited Incredible Pizza you have had their cracker type crust. It holds up really well on a buffet line.

Tom Lehmann/The Dough Doctor

1546

/ [Re: Starter is not dissolving in water](#)

One of the characteristics of salt is that it tightens the dough, if you omit the salt from the dough formula you will always get a softer, more slack dough consistency than if the salt were present at normal levels.

Tom Lehmann/The Dough Doctor

1547

/ [Re: Bleached vs unbleached?](#)

Craig;

Bread type flours will typically use a combination of benzoyl peroxide for bleaching and ADA for chemical oxidation/maturing of the flour. ADA is too slow acting for use as a bleaching agent. Chlorine gas is more typically used in some pastry flours but mostly in high-ratio cake flours where it plays a VERY significant roll in functionality of the flour in making high-ratio cakes.

Tom Lehmann/The Dough Doctor

1548

/ [Re: Starter is not dissolving in water](#)

It appears that you might be washing the gluten from the flour in your starter. When I make a starter I always use at least 75% absorption in the starter and then add it to the dough as an ingredient without trying to suspend it in the water.

Tom Lehmann/The Dough Doctor

1549

/ [Re: Autolyse](#)

Three questions which I have are:

- 1) What was the finished dough temperature?
- 2) How did you make the poolish? Possibly 20% is too much.
- 3) What was the total dough fermentation time between mixing and use of the dough?

Tom Lehmann/The Dough Doctor

1550

/ [Re: Bleached vs unbleached?](#)

Not wrong, just differently. It may not be just one thing but instead an accumulation of several little things/differences that is responsible for the difference. Mixers, water, temperature are but a few things that can add up to

make a difference.
Tom Lehmann/The Dough Doctor

1551

/ Re: How to get pizza into oven?

Fine corn meal works well as does semolina flour or even rice flour all make for a good peel dust.
Tom Lehmann/The Dough Doctor

1552

/ Re: Which kind of dough should we use with a pizza screen ?

I've done this two ways, maybe one of them will work for you.
This is for a small oven.
Using your metal oven peel, remove the entire pizza from the oven, immediately slip the peel under the pizza removing it from the screen and transfer it back into the oven.
The other method involves the use of long handle tongs, slide one side under the screen (you may need to flatten one side using a hammer) grasping the screen, then pull the screen out from under the pizza leaving the pizza on the oven deck. If the oven is sufficiently large you can simply use a spinning peel to lift the pizza off of the screen and place it onto the oven deck then remove the empty screen.
Tom Lehmann/The Dough Doctor

1553

/ Re: Bleached vs unbleached?

Bleaching and oxidation of flour are two entirely different processes. Chemical ageing of the flour is accomplished using Maturox aka ADA (azodicarbonamide) while bleaching is done using benzoyl peroxide and sometimes chlorine gas. The flour is milled the same whether it is bleached or not.
Tom Lehmann/The Dough Doctor

1554

/ Re: The End of Meat ?

When vegetables become our main source of protein the world will be at the whims of Mother Nature in a big time way, specific crop types will become dominant and more widely grown thus lowering resistance to insects, fungus and a host of other insidious attacks suffered by plant species, when this happens we will have a much larger audience competing for a smaller "piece of the pie", and that ain't going to paint a pretty picture. We saw some of this very thing happen just a few years ago when there was a world wide shortage of wheat, remember that time? If not let me remind you, flour (when/if available) was selling for nearly \$50.00 a bag! The flour that was available was flour by name only, not the best by any stretch of the imagination, but it was "flour". Much of Asia has transitioned from rice to wheat since the 1960's so the "audience" was size able to say the least. There was an

essentially catastrophic wheat crop failure in the U.S., poor planting and growing conditions in Canada, Drought in Australia and poor harvest conditions in Mexico and much of Latin America. Even Russia suffered the same failed crop conditions! What many people don't realize is that the world wheat surplus, which is usually measured in weeks or months was down to being measured in days and finally in hours. There was fear of civil unrest due to food shortages world wide. Yes, there were other crops available for consumption but their prices had sky rocketed and they were not being grown in sufficient quantity to off-set the wheat shortage, plus don't forget the gluten equation, there are a lot of foods that need gluten. So why not just use gums to replace gluten? Great idea, only one problem, since everyone else thought of that too the cost of ALL types of gums/binders had become cost prohibitive and non-available, we like to refer to this as the domino effect. My point is, if it can happen to wheat it can happen to any other plant. A lost plant crop can be easily converted to animal feed to grow live stock a a source of food, but eating corn/wheat/ milo/bean crop failure is not my idea of fine dining, I'd rather it be fed to the live stock first and then eat the live stock. Just my humble opinion.

Tom Lehmann/The Dough Doctor

1555

[**/ Re: Best way to prepare for multiple pizzas**](#)

Joel;

I've been retired from AIB for 5-years now. I put in just shy of 50.

Tom Lehmann/The Dough Doctor

1556

[**/ Re: How should I go about this?**](#)

I used to tell my students that the ingredients are like bricks and mortar and you're the brick mason. Depending upon how they are assembled you can make a privy or a castle. It ain't the ingredients that makes for as great pizza, it's how they are put together and managed that makes the difference. To answer your question though, the dough formula that we used for over 35-years as our "base" dough formula for making both thin and thick crust pizzas with a refrigerated dough ball life of 3 to 4-days is as follows:

Flour (12 to 12.8% protein content) 100%

Salt: 1.75%

Sugar: 2%

Oil: 2%

IDY: 0.375%

Water: 62%

We used the delayed oil addition mixing method as well as my dough management procedure for refrigerated dough. Pizzas were baked in a variety of different ovens, B.P Deck, Marsal Deck, Lincoln Air impingement, XLT Air impingement, WoodStone Wood Fired, a TurboChef and an Air Deck to name but a few.

1557

[**/ Re: Breadcrumbs**](#)

There is a commercial product that some pizzerias and large wholesale manufacturers use that looks a lot like bread crumbs, it's called Pizza Crisp.
Tom Lehmann/The Dough Doctor

1558

[/ Re: Which kind of dough should we use with a pizza screen ?](#)

Yup, once the ADY has been hydrated and activated it can be safely added into the cold water without any problems.
Tom Lehmann/The Dough Doctor

1559

[/ Re: How should I go about this?](#)

If it were me, I'd round the flour weight off to 50-pounds then calculate the ingredient weights from the percentages that you have listed. Note: When based on 50# of flour the water at 63% calculates out at 31.5-pounds divided by 2.2 = 14.3 L. (less than your 14.9 L.). But still using the original 49.97-pounds of flour weight 49.97×63 (press the "%" key) and read 31.48-pounds in the display. 31.48 divided by 2.2 (pounds in a liter) = 14.3 L.
Tom Lehmann/The Dough Doctor

1560

[/ Re: Best way to prepare for multiple pizzas](#)

Joel;
0.6% IDY is a bit on the high side and could certainly contribute to over fermented/blown dough. I suggest reducing it to something in the 0.3 to 0.4% range.
Wow! You're right in my back yard!
Send me an e-mail with your contact information and I'll try to get down to see you (35-miles away).
Tom Lehmann/The Dough Doctor
<thedoughdoctor@hotmail.com>

1561

[/ Re: sufficient humidity for dough retarder/proofer?](#)

Ditch the ZipLock bags, instead go with Food Saver bags. They're a LOT cheaper and they will work much better in this application.
Tom Lehmann/The Dough Doctor

1562

[/ Re: Which kind of dough should we use with a pizza screen ?](#)

Screens are not a problem at high baking temperatures IF there is a pizza on it. The pizza will absorb heat thus protecting the screen, but an empty screen in a

wood fired oven can be a disaster. In the baking industry we have a similar problem with tin plated pans, tin melts at about 450F and we do a lot of baking in the 465 to 475F range so it's important to have dough in each and every loaf pan on the strap (in our case there were 5 loaf pans to a strap). If one of the pans went into the oven empty the tin would melt off of the empty pan destroying not just the pan but the entire strap of pans which was quite expensive.

Tom Lehmann/The Dough Doctor

1563

/ Re: Best way to prepare for multiple pizzas

I can't answer your question on yeast amount as I don't know what type or how much you are presently using, but there is a lot more to over fermentation of the dough than too much yeast such as how you're managing the dough as well as the finished dough temperature.

All of that aside, here is what I'd do;

Use 65F water temperature (looking for a finished dough temperature in the 75 to 80F range.

Immediately after mixing scale and ball the dough.

Lightly oil each dough ball and place into individual plastic Food Saver bags (NOT ZipLock).

Twist the open end into a pony tail and tuck it under the dough ball as you place it into the fridge.

Cold ferment for desired time.

To use, remove from the fridge and allow to warm to 50 to 60F internal temperature.

Roll the bag down around the dough ball and invert over a floured surface allowing the dough ball to fall free from the bag onto the floured surface.

Open the dough balls into skins by your preferred method.

Dress to the order.

Bake.

Note: The dough balls will remain good to use over a 2 to 3-hour period of time once they reach 50 to 60F.

Tom Lehmann/The Dough Doctor

1564

/ Re: sufficient humidity for dough retarder/proofer?

You will want to wipe it down/sanitize it between different applications. Before worrying about relative humidity you're going to need to figure out a way to stabilize the temperature. At 80% R.H. you're close enough to the dew point that any loss of temperature will result in condensation forming (you already know that). The problem with small boxes like wine coolers is that even once you get everything dialed in your dough box and dough will be cooler than the ambient in the box so you're going to get condensation forming on the dough and dough box surfaces, and if it cools the temperature in the wine cooler you'll get condensation forming on the inside surfaces. This is why, for the most part, the baking industry has moved away from using temperature & humidity controlled rooms for fermentation, instead they just control the temperature, prevent any drafts and lightly cover/drape the dough container (dough trough) to help capture the carbon

dioxide formed during fermentation which will blanket the dough (green house effect) thus preventing moisture loss, also, keep in mind that the environment inside of the wine cooler will be HIGHLY caustic due to the acids formed during fermentation, it has a nasty habit of getting behind panels and into places where it will corrode anything that isn't high grade stainless steel.

Tom Lehmann/The Dough Doctor

1565

/ Re: Which kind of dough should we use with a pizza screen ?

To answer your screen question, screens can be used with any dough that will not flow into the screen openings either due to high absorption, or the need to proof the dough on the screen (especially when combined with high dough absorption). As a general rule, 66 to 68% absorption is about the highest dough absorption you will want to use with a screen, this is assuming a fully dressed pizza. If you are making par-baked crusts you can get away using a higher absorption as there isn't the weight of the toppings pressing the dough down into the screen openings both prior to and during baking. Just make sure you season your screens well before using them, failure to do so can result in the dough welding itself to the screen during baking, and NEVER soak a seasoned screen in water, just wipe it clean and you're good to go.

As for your IDY question, DO NOT hydrate IDY in cold water, use only 95 to 100F/35 to 37.7C, water, failure to do so will leach out glutathione from the yeast cells resulting in poor yeast activity and inconsistently soft doughs. If you search back through the archives you will find significant discussion on both screens and their care and use as well as IDY. The only time you really need to pre-hydrate IDY is when mixing dough by hand or if machine mixing for less than 5-minutes, otherwise just add the IDY right on top of the flour and begin mixing.

Tom Lehmann/The Dough Doctor

1566

/ Re: What can opener do you use to open your #10 cans?

Correct, Norma and I spoke about this some time ago. They're about twice as big and a lot easier to use than the P-38 version.

Tom Lehmann/The Dough Doctor

1567

/ Re: Any "downsides" to a higher hydration dough??

The biggest down side to high absorption doughs is that it's really difficult to make a decent cracker type crust using high absorption values. :-D Aside from that, as you keep increasing the absorption the dough will eventually become too sticky to handle without using excessive amounts of dusting flour and all the collateral damage resulting from the excessive dusting flour, then too the dough will over expand during oven spring resulting in potential collapse. At some point you will see an impact upon bake time and temperature but more so than that will be a higher than normal, or desired, residual crumb moisture content resulting in a pizza that retains its crispiness for a time period measured in seconds. This is one

reason why when we bake at very high temperatures crispiness takes a back seat. By the way, as moisture content goes up (especially over 68%) we need to bake at ever increasingly higher temperatures which means a shorter bake time and a less crispy crust or at least a crust which doesn't retain its crispy nature, then at some point we just can't bake out all the moisture and that's where the real fun begins.
Tom Lehmann/The Dough Doctor

1568

/ [Re: Soapy taste, leftover pizza?](#)

Food contact but probably not reheating. They're entirely different functions.
Tom Lehmann/The Dough Doctor

1569

/ [Re: Hobart A 200 restauration](#)

Just be sure to wet the sand or it won't serve the intended purpose.
Tom Lehmann/The Dough Doctor

1570

/ [Re: ok- last question for a bit! Salt in the flour??](#)

First things first, it's important to know how you are mixing your dough, by hand or machine, it makes a difference.
Tom Lehmann/The Dough Doctor

1571

/ [Re: Any good recipes/techniques with these ingredients?](#)

From the picture, the dough appears as if it might be somewhat under absorbed. Add to that the small amount of yeast called for suggests the possibility that maybe there isn't sufficient yeast in the dough (the % is correct but is the actual amount added to the dough correct?). Remember, as you knead the dough you are developing the gluten so the dough is becoming increasingly tenacious (rubbery), this is normal especially for a low absorption dough which it appears you might be working with. The first thing I would do is to increase the dough absorption by 5% to see if that provides for an easier to knead dough, you might need to further fine tune the absorption if you see some improvement at 5%. Even if the dough is a little tacky (not sticky) that's fine as it'll improve as the dough is developed and as it ferments. Let us know how this works and send a picture of the dough.
Tom Lehmann/The Dough Doctor

1572

/ [Re: What can opener do you use to open your #10 cans?](#)

Works out in the field but in the kitchen?
Tom Lehmann/The Dough Doctor

1573

/ Re: Follow up on Pluviometer readings

I always thought it was an instrument used to measure precipitation/rainfall? In the baking industry we have used graduated cylinders into which we put a measured amount of dough at 85F and tamped it flat, then placed it into a temperature controlled cabinet (90F) with a piece of foil over the top to prevent drying. The test was used to measure/compare the activity of yeast over a 3-hour period of time. Since all flours are different I'm trying to figure out how this would relate to assessing/determining the correct fermentation for any given flour. What am I missing?

Tom Lehmann/The Dough Doctor

1574

/ Re: Soybean oil: Healthy or Harmful

As a baking fat (one that is included in the dough formulation) soy bean oil at typical levels (2% and less) really isn't all that bad when pizza is consumed as a part of a healthy and varied diet, but when it's used as a frying fat the complexion changes significantly, in fact, frying doesn't help the nutritional profile of any fat or the food fried in it. This is not to say that we should avoid all fried foods, but we might want to think of them in moderation as part of a healthy diet. I'm in total agreement with what Peter said but I'd like to add that when you look at the animal diets from which conclusions are made the diets are always "HIGH" in whatever they are testing, for years we have always said that this is not realistic and at best it supports potential or trends not absolutes as many try to interpret the results of these studies. Again, let me state, moderation and variety are essential to a healthy diet. If there is anything that does worry me it is sprouts and spinach, two of my favorites, and baby spinach has just been involved in another recall again. :(

Tom Lehmann/The Dough Doctor

1575

/ Re: What can opener do you use to open your #10 cans?

Ditto that opener for me too. I got mine at a sale many years ago. Never fails. I do suggest cleaning the top of each can prior to opening for sanitary reasons.

Tom Lehmann/The Dough Doctor

1576

/ Re: Hybrid Dough - Delivery

I totally agree, Neo. pizzas are probable the all time worst selection for a DELCO pizza. Their acceptable life is measured in single digit minutes.

Tom Lehmann/The Dough Doctor

1577

/ Re: hard dough that tears when kneading

My reference to ml v/s grams is that "ml" is still a volumetric portion and subject to a certain amount of potential variation (especially when considering the small amount of flour being used), the difference would be small so I added the "Questionable but maybe". When I ran the bake labs at AIB we always used the smallest graduated cylinder possible when working in milliliters. The larger the cylinder the greater the potential for error either by eyeballing or due to residual water in the cylinder after pouring the water out. Working with such small amounts of flour is always difficult as you almost need an analytical scale. Whenever possible we always weighed the water, yes there was residual water in the weigh container but at least it was a constant error which we could cope with.
Tom Lehmann/The Dough Doctor

1578

/ Re: Work with pizza balls

Adjust the water temperature used in making your dough to give you a finished dough temperature of 70 to 75F (favoring 70F). Ball the dough IMMEDIATELY after mixing, lightly oil the dough balls and place into individual plastic bags, twist the open end to form a pony tail and tuck it under the dough ball as you place it into the fridge (34 to 38F), allow the dough balls to ferment in the fridge for at least 24-hours (48-is better) before using. To use, remove from fridge, allow to warm to 60F, roll the bag down around the dough ball, invert the bag and dough ball allowing the dough ball to fall free from the bag onto a floured surface, open into a skin by your preferred manner, dress and bake.
This should eliminate the need to re-ball and give you an overall, better and more consistent product.
Following this procedure the temperature of your kitchen will have minimal impact upon the dough.
Tom Lehmann/The Dough Doctor

1579

/ Re: Are these quarry stones ok to use at home?

Ceramic just means that it has been hardened by application of heat (in a kiln).
Tom Lehmann/The Dough Doctor

1580

/ Re: hard dough that tears when kneading

Without knowing how you're making your dough and more about the flour you're using I can only speculate.
1) Your dough needs more water (higher absorption).
2) Your flour is too strong.
3) Your scaling is off. You indicate 80-ml, not 80-grams, of water, perhaps that's your problem? Questionable but maybe.
Why are you not weighing the salt? It should be about 2.5-grams which is more than the ADY which you are weighing.

- 4) The ADY should be about 0.625-grams.
- 5) I don't see any mention of activating the ADY prior to addition to the dough, perhaps that is contributing to the problem.
- 6) What is the water temperature and what is the finished dough temperature? Much of what you've described is indicative of an under absorbed and under fermented dough, there is nothing sacred about 64% absorption so don't hesitate to increase the dough absorption, all flours are different, some will require a higher absorption than others.
- 7) Are you using dusting flour to help with kneading the dough? If so it is highly possible that the dough is picking up sufficient dusting flour to really upset your dough absorption. Remember, with such a small dough size just 10-grams of dusting flour can through off your dough absorption by as much as 6% or more. I know this isn't much help but maybe it'll give you some insight into what the cause might be.

Tom Lehmann/The Dough Doctor

121

/ Re: Tom Lehmann's guide to burger buns

The higher protein flours are used in hamburger and hot dog bun production for the resilience it imparts to the crumb structure. When made using low protein flour the crumb structure lacks resiliency and becomes somewhat crumbly.

In hamburger bun production, if you want to add seeds as a topping all you need to do is to lightly spray the surface with water and the seeds will stick just fine PROVIDING THAT YOU HAVE NOT ALLOWED THE CRUST TO BECOME DRY PRIOR TO APPLICATION OF THE WATER SPRAY. If the crust has dried a cooked starch application will be your best chance to make the toppings stick after baking. To make the cooked starch just add 1-ounce of corn starch to 1-quart of water and heat just until it begins to simmer, allow to cool until warm (not hot) and carefully brush onto the top of the buns just before adding seeds, etc. The starch wash also imparts somewhat of a shine to the crust too.

Tom Lehmann/The Dough Doctor

122

/ Re: Tender Flakey Pie Pastry Crust

Sounds like it was what is referred to as a "long flake" crust.

This is where the fat is refrigerated until firm but not hard, it is cut into the flour until the fat pieces are about the size of cherries. The pie dough is then formed into pucks, placed on a sheet pan and covered to prevent drying, place in the cooler over night then brought out on the following day. They are allowed to warm AT (NOT TO) room temperature until the dough can be rolled to about 3/16-inch thick, fitted into the pie plate (pan), filled, top crust applied, sugared or egg washed and baked.

Tom Lehmann/The Dough Doctor

123

/ Re: frozen/vacuum sealer pizza for delivery and pickup.

There are at least two documented cases of clostridium in vacuum packaged tortillas coming from Canada, that's two too many! Work that was done at AIB (American Institute of Baking) back in the 50's confirmed that clostridium can grow in bread stored in an anaerobic environment, this is reason enough for ME to take vacuum packaging VERY seriously. When I refer to just plain freezing I'm referring to non-vacuum packaging of the product and then placing it into the freezer for storage.

Tom Lehmann/The Dough Doctor

124

/ [Re: New King Arthur '00' Pizza Flour](#)

Just about any unmalted flour can be successfully used for high temperature pizzas.

Tom Lehmann/The Dough Doctor

125

/ [Re: Getting crust to brown without being to overcooked and hard.](#)

None, it will just show up as another ingredient at .5%, the sum of the percentages will also increase by 0.5% to 167.75%. That's one of the nicer things about working in bakers percent, since all ingredient weights are based on the total flour weight if you change the weight of any ingredient (except for the flour) everything else remains the same. If you were working in "true" percent if you change the weight of ANY ingredient the percent of ALL the others has to be recalculated.

Tom Lehmann/The Dough Doctor

126

/ [Re: Rounder and divders](#)

Scott;

I've seldom ever really found it necessary to go with a dough divider as it's really pretty easy and accurate to scale the dough by hand like Walter said, it's the rounding that catches up with you, so hand scaling isn't all that bad but you can really "grease the wheels" with a dough rounder. By far, the most efficient method for hand scaling the dough is to cut it into strips (called ropes) and then use your cupped hand to work it out to about the same diameter along its entire length, then cut a piece off and weigh it, the idea being to find the length that gives the targeted weight, once you develop a feel for it this method can be VERY fast. During our seminars two of us could scale and ball (using an AM Dough Rounder) 85# of dough into 10-ounce dough balls in less than 20-minutes. We used to make a challenge out of it to see how many pieces we could cut that were the exact targeted weight, my personal best was, I believe, seven dough pieces in a row. I might add that we only did this once a year so it wasn't like we were doing it every day either! We could also round (ball) the dough manually in under 20-minutes too by using the two handed balling procedure (shown in my dough making video at [<www.doughdoctor.com>](http://www.doughdoctor.com)) but I'll be the first to admit that it'll catch up to you sooner than later.....give me a mechanical dough rounder!!!

Tom Lehmann/The Dough Doctor

127

[/ Re: Quest for a tender neapolitanish pizza](#)

Yael;

The problem with durum semolina flour has to do with the type of gluten it produces, a very tough and elastic gluten, to be sure. This is why it is mostly used for the production of pasta. It can help produce a crispy crust but at the expense of added toughness as the pizza cools off, like in a DELCO scenario. It's for this reason that we've always suggested to limit its use to not more than 25% of the total flour weight.

Tom Lehmann/The Dough Doctor

128

[/ Re: Quest for a tender neapolitanish pizza](#)

Durum semolina does you no favors if your main concern is tenderness.

Tom Lehmann/The Dough Doctor

129

[/ Re: Rounder and divders](#)

There are, but you will need to change gears and look at bakery dividers (ram and knife). These are designed to degas fermented doughs for consistent scaling weights. The bad news is that they are large (even single and double pocket dividers are pretty large for a pizzeria) they're potentially expensive and they may not work well with weights much under about 10-ounces. Even the big wholesale manufacturers divide the dough prior to fermentation, they then round (ball) it and give it an intermediate proofing period just prior to final shaping (usually hot pressing). In other cases they will process the fermented dough on a stress free sheet and die cut processing line (think of processing 4,000-pounds or more of dough per hour before ordering one) which minimally degasses the dough while forming it into a continuous sheet from which individual pizzas are die cut and then usually go to an oven for par-baking, then to cooling and a trip through the finishing room where the par-baked crusts are dressed, then blast frozen, individually packaged, boxed, palleted, and placed into a holding freezer to await transportation to a distributor.

Tom Lehmann/The Dough Doctor

130

[/ Re: dried out crust after parbaking](#)

As long as you are at or above the 50 to 55F range you'll be fine.

Tom Lehmann/The Dough Doctor

131

[/ Re: Rounder and divders](#)

The somerset is a good unit and it works very well, too bad they staged the video using previously rounded dough balls...dumb mistake! The other rounder that I like a lot is the AM Manufacturing rounder, you wouldn't go wrong with either one.
Tom Lehmann/The Dough Doctor

132

/ Re: frozen/vacuum sealer pizza for delivery and pickup.

Shrink wrapping and putting the pizza in a plastic bag are essentially one and the same. Airflow in a package? Go back and read the article referenced above by PIZZA_NOT_WAR and I think you will have both questions answered. A number of years ago I had a person contact me regarding a problem he was having, some of his packages were blowing up (bulging), his concern was how to find a gas permeable packaging material to allow the gas to escape!!! He didn't even recognize the potential of what he was for causing illness or worse! This is why I always recommend that anyone getting into anything more than just plain freezing ALWAYS have a microbiologist on staff. The question of the day referencing the issue cited above: Would you consume anything taken from a bulging can? How about a canned product taken from a jar with a domed lid?

Tom Lehmann/The Dough Doctor

133

/ Re: dried out crust after parbaking

No, your problem is due to collapse of the crumb structure resulting from insufficient baking of the crust. It is NOT a drying out issue. In order for the problem to be resolved you have to achieve an internal temperature of 185 to 190F to fully set the structure, anything less than that and the structure will collapse upon cooling. The idea behind par-baking is to achieve a full internal bake (185 to 190F internally) while developing a finished crust color that might be best described as being "sandy" in color. If you get too much color during the par-bake the crust will either get done too soon or it will get too much color when the pizza is fully baked. If you want to see an excellent example of something that is par-baked just take a look at those par-baked dinner rolls that you'll be buying in a few weeks to go with your Thanksgiving turkey.

The reason for using a screen under the skin during baking is because it helps to reduce some of the bottom heat (remember, pizzas ovens are designed to provide more heat to the bottom of the pizza than to the top during baking).

Tom Lehmann/The Dough Doctor

134

/ Re: Quest for a tender neapolitanish pizza

Your case is not so uncommon where you are looking for a characteristic that you might or might not get so in that aspect it's always elusive. When this happens the issue is almost always attributable to some kind of inconsistency in what is being done. In reading through your formula and procedure it appears to me that your are not being specific on times and temperatures (remember the acronym "GIGO" garbage in garbage out. In this case it's "IIIO" inconsistency in inconsistency out.

You're on the right track by buying a thermometer so you can document things like flour temperature, room temperature, water temperature and finished dough temperature. By tracking these you will be able to develop a chart for determining the correct water temperature to use to achieve your desired finished dough temperature. This is vitally important as you are bulk fermenting and just a few degrees difference in finished dough temperature can make a big difference in the total amount of fermentation the dough received over the following 18 to 20-hours.

Which brings me to times, pick a time that works for you and then just be CONSISTENT, use that time fermentation time consistently. You will also want to be measuring the dough temperature when you scale and ball it and again when you go to open it into a skin. While the 2-hour difference between when you begin opening the dough balls until you finish opening them may not seem like much, it can make a HUGE difference in the finished crust depending upon the temperature of the dough balls at the time when you begin opening them. I think after you begin addressing these inconsistencies your results will be much more consistent and you will either have your 10 or possibly 11 or at the very least you will be able to make adjustments to the dough/process which will allow you to move closer to the desired finished crust characteristics.

Tom Lehmann/The Dough Doctor

135

/ Re: dried out crust after parbaking

You have the wrong type of dough docker (metal pins?) The most effective dough docker is the DDCH7755 from American Metalcraft <www.amnow.com>. I'm sure there are others like it but this will give you an idea of what it looks like. Since you have an IR oven set the emitter temperature at 650F for both the top and bottom, if the oven doesn't show emitter temperature set the actual baking temperature at 400F. If the oven has an open chain conveyor, bake on a screen but if it has a woven wire band you can bake directly on the band. Baking time will be a bit longer at about 3-minutes.

136

/ Re: dried out crust after parbaking

What you have described is a classical case of dough collapse due to insufficient par-baking. The minimum par-bake time in an air impingement oven will be about 2-minutes at not more than 400F and even then it won't be the best par-bake either. This is because if the oven is profiled to bake pizzas on a raw dough skin, as most are, it has full open fingers across the bottom and a combination of open and partial or even closed fingers across the top which results in the top of the skin receiving less bake than the bottom (that's a similar heat pattern to that which is used to bake pita). Now you know why the skin wants to "pita" during baking. Since I didn't see anything about docking, I'll assume you're not docking the skin. Your best chance to accomplish what you are trying to do is to dock the skin, place it on a pizza screen and bake it at 400F for 2-minutes. You may need to adjust the baking time and temperature slightly but this will get you very close. A difference of 10-seconds in bake time can mean the difference between success and failure....it's that sensitive. Also, immediately upon removing the par-baked crust

from the oven turn it upside down for cooling.
Tom Lehmann/The Dough Doctor

137

/ Re: Dough recipe for commercial conveyor pizza oven at 550 degrees

Here is a good starting dough formula:

Flour: Bread type flour with 12 to 12.8% protein content 100%

Salt: 1.75%

Sugar: 2%

IDY: 0.375% or CY: 1%

Water: 62% (variable)

Oil: 2%

Put water in mixing bowl, add salt and sugar, add flour and yeast on top of the flour. Mix until no dry flour can be seen in the bottom of the bowl, then add the oil and mix an additional minute at low speed, then finish by mixing 8 to 10-minutes at medium speed. Target finished dough temperature is 75 to 80F.

Take directly to the bench for scaling and balling.

Scale and ball entire dough in not more than 20-minutes.

Place dough balls in dough boxes and lightly oil the top of each dough ball.

Cross-stack dough boxes in the cooler until INTERNAL dough ball temperature reaches 50F.

Down-stack and kiss the dough good night.

Allow to CF for a minimum of 24-hours (48-is better).

Remove about a 3-hour supply of dough balls from the cooler and allow to set AT room temperature until the internal dough ball temperature reaches 50F.

Begin opening the dough balls into skins as needed. They will remain good to use for about 3-hours.

Any unused dough balls can be opened and placed on screens and stored in the cooler in a wire tree rack (cover with a plastic bag to prevent drying)

To use these pre-opened skins, remove from cooler 20 to 30-minutes prior to anticipated use time, then REMOVE FROM THE STORAGE SCREEN and place onto your baking platform (screen, disk, pan, etc.), dress and bake as normal.

Note: Pomace grade olive oil is better for use in the dough than EVOO, it's cheaper too!

Tom Lehmann/The Dough Doctor

138

/ Re: Metal Proofing Pans vs Plastic Proofing Trays

Also, when checking around, don't forget to look for steel cake pans, they come in both steel and aluminum and are available in a host of different sizes. I've got a few in 8 and 12-inch (square) X 1" deep with a dark green finish (called Bake-Prep) that work reasonably well.

They went for next to nothing when AIB liquidated its baking facility.

Tom Lehmann/The Dough Doctor

139

/ Re: Can you explain my observations?

Check the bags to make sure they all have the same milling lot number. Also, remember that storage can/will affect the flour too. If the flour has been stored for a period of time (slow turn over by your distributor) it will dry out. Flour will typically have about 14% moisture content at the time of milling and bagging but it can dry out to as low as about 10% due to long storage times (+/- 3-months) from the date of milling.

Tom Lehmann/The Dough Doctor

140

/ Re: Metal Proofing Pans vs Plastic Proofing Trays

Have you looked at the pans from Crown Cookware <www.crowncookware.ca>, they carry a lot of the same type of pans that Allied carried. We had a few of their pans when I was at AIB and they held up as well as those from Allied Metal.

Tom Lehmann/The Dough Doctor

1581

/ Re: Are these quarry stones ok to use at home?

Use only the unglazed, not the porcelain. When I got mine the size was 14 X 14, 6 X 6 is pretty small. I got mine from an independently owned local tile and carpet store though I recently saw some at our local Habitat for Humanity Restore for next to nothing.

Tom Lehmann/The Dough Doctor

1582

/ Re: sufficient humidity for dough retarder/proofer?

The easiest way to find R.H. is to use two dial/stem type thermometers, using two Styrofoam cups, push on thermometer stem through the sides of one cup and place into the box, the other thermometer is pushed into the other cup (about an inch from the top) so the tip is just touching but not penetrating the opposite side. Wrap a piece of paper towel or absorbent cloth around the stem portion inside the cup, fill the cup with water (to about an inch BELOW the thermometer stem) at the same temperature that the other thermometer is reading.

The thermometer w/o water is the dry bulb and the one with water will be the wet bulb. Begin monitoring after 30-minutes in the box. A 4 to 5F difference in temperature will be indicative of approximately 80% Relative Humidity/R.H. If you go on-line you can download a relative humidity chart showing the temperature differential between wet and dry bulb measurements for any desired R.H. at any dry bulb temperature.

Tom Lehmann/The Dough Doctor

1583

/ Re: Could I let proof my focaccia dough directly on the pan ?

In that case, wouldn't it just be a lot easier to grease the pan and place the dough ball(s) onto the pan to ferment? When making focaccia I normally weigh out the

dough so I'm working with a single dough ball per focaccia sheet. After about an hour to hour and a half use a rolling pin or pastry pin to partially open the dough ball to somewhat the shape of the pan, cover again and allow to finish fermenting, then hand fit the dough the rest of the way to fit the pan, set aside and allow to proof for 45-minutes, re-stretch the dough to fit the pan if necessary and allow to continue proofing to desired height, dress the focaccia as desired and bake. Remove focaccia from the baking pan immediately after baking and allow to cool on a wire rack. After cooling they can be placed back into the pan if desired. If you don't remove them from the pan immediately after baking the bottom will become soggy due to condensation.
Tom Lehmann/The Dough Doctor

1584

/ [Re: Could I let proof my focaccia dough directly on the pan ?](#)

Why not just put the dough balls into a suitably sized plastic bowl? You are going to need to remove the fermented dough balls from the pan anyhow to oil/grease the pan. If you grease the pan you can place the dough balls directly onto the pan to ferment then press the dough into the pan by hand. We do something similar to this with deep-dish pizzas and it works well. If you are planning to oil the pan this won't work as the dough will absorb the oil during the fermentation time. You're still going to need to cover the pan to prevent the dough from drying out and forming a crust during the fermentation period.
Tom Lehmann/The Dough Doctor

1585

/ [Re: Help on modifying the level of browning on a Neapolitan pizza bottom](#)

What we're talking about here is one way slice operators recon their slices for sale. Heated/humidity controlled box straight to a deck oven for about 1-minute then handed off to the customer. It'll be crispy and have the visuals but it will not have the overall flavor since so many of those flavors are highly volatile and are lost soon after baking, much less cooling.
Tom Lehmann/The Dough Doctor

1586

/ [Re: sufficient humidity for dough retarder/proofer?](#)

You will experience drying of the dough at anything less than 80% R.H. Constant 80% is what you want.
Tom Lehmann/The Dough Doctor

1587

/ [Re: Help on modifying the level of browning on a Neapolitan pizza bottom](#)

The characteristics you're looking for are achieved at very different baking temperatures. You might try baking at 900F+/- to achieve the leoparding and Neapolitan characteristics, then remove the pizza from the oven to cool for a few

minutes, place it back into the oven for a second bake (directly on the deck) and hope this will brown the bottom and provide additional crisp without significant adverse impact upon the top of the pizza. This is similar to the way a store bought frozen pizza is made and handled, have you ever baked one that wasn't crispy? Another approach might be to experiment using a par-baked crust. For this you will want to bake the crust at not more than 450F, cool it, then dress it and give it a final bake at about 650F. Some experimenting will be needed but either method holds some promise.

Tom Lehmann/The Dough Doctor

1588

[/ Re: sufficient humidity for dough retarder/proofer?](#)

A good RH to shoot for is 80 to 82%. If you get much above this you will get condensation forming with and opening or closing of the door or on anything placed in it that is not at the operating temperature of the box.

Tom Lehmann/The Dough Doctor

1589

[/ Re: Help on modifying the level of browning on a Neapolitan pizza bottom](#)

Maybe a New Haven style pizza? Think of it as a crispy New York style pizza.

Tom Lehmann/The Dough Doctor

1590

[/ Re: Is it good practice to jar \(canning\) smaller quantities of 7/11 tomatoes?](#)

Most everything you like about the flavor of the 7/11 product will be compromised by traditional canning methods so in my opinion, freezing is the lesser of two evils.

Tom Lehmann/The Dough Doctor

1591

[/ Re: Two Failed Attempts and Looking to Get Better!](#)

Maesh;

You came to the right place. Tell us what you have been doing and we'll see what we can do to get you on track to making some great pizzas.

Tom Lehmann/The Dough Doctor

1592

[/ Re: Wowzer! Stanislaus 7-11 Tomatoes...](#)

The 7/11 Ground Tomatoes with skin is my favorite also, I use it just as it is right from the can or I add fresh basil and garlic to the skin at the time of saucing.

Tom Lehmann/The Dough Doctor

1593

/ [Re: Cold then warm then cold?](#)

Matt;
The implication is indeed correct.
Tom Lehmann/The Dough Doctor

1594

/ [Re: Upgraded Dough Boxes](#)

That's a good height for the boxes. Try using white mineral oil to treat the wood. We use it here in the U.S. all the time to treat out wood bench tops. If you can't find it on line or through a local distributor try asking for it as a local pharmacy, if they don't have it they should be able to get it for you. A pint will go a long ways.
Tom Lehmann/The Dough Doctor

1595

/ [Re: DIY Pizza workbench](#)

Beautiful AND Fantastic!
Tom Lehmann/The Dough Doctor

1596

/ [Re: Upgraded Dough Boxes](#)

I can't tell from the pictures what the dimensions are but also keep in mind that you don't want the boxed to be too big/tall with regard to the size of the dough balls. This is why commercial boxes are made in two basic heights to accommodate large or small dough balls. A box that is too high/tall will have excessive head space which is conducive to drying of the dough balls. Since cross-stacking is desirable when using dough boxes the dough balls are usually lightly oiled after being placed into the box to prevent drying during the cross-stack period so drying of the dough balls is usually not an issue even with a partially filled box.
Tom Lehmann/The Dough Doctor

1597

/ [Re: Advice please](#)

Assuming you mean you are going to bake pizzas for 200 to 250 people. Individual pizzas or large pizzas which will be sliced? In so how large? Is your oven a single or a double stack? Over how long of a period of time will you be making the pizzas? Keep in mind that you will only be able to bake 5 to 6 pizzas at a time (depending upon size) with an average baking time of 7 to 8-minutes (at best), so probably figure on about 35 pizzas per hour per deck (that might even be a bit optimistic). If you do a 16-inch pizza (5 per deck) and cut it into four slices you will get about 50-square inches per slice or about the same as a 8-inch individual pizza which should be sufficient for one person. $250 \div 4 = 63$, 16-inch pizzas will be needed. $63 \div 5 = 12.6$ (13) full oven bakes. Assuming an 8-minute bake (?) this means 104-minutes for a single deck or about 52-minutes of baking time for two

decks (call it an hour).

Take this with a grain of salt as it's based on a lot of assumptions. Guessing you will need a total of 3 possibly four people to do this.

Tom Lehmann/The Dough Doctor

1598

[**/ Re: Dough help, still not quite right**](#)

Try this instead, immediately after mixing (targeted finished dough temperature 75 to 80F) scal and ball the dough, lightly oil the dough balls then straight into the fridge (uncover ed for at least 2-hours, then cover) and allow to cold ferment for 48-hours, remove from fridge, allow to warm AT room temperature until the dough balls reach an internal temperature of 50 to 60F, then open into skins, dress to the order and bake, this should address the dough memory issue and improve the crispiness of the finished pizza at the same time.

Tom Lehmann/ The Dough Doctor

1599

[**/ Re: Cold then warm then cold?**](#)

Matt;

The only problem that I see is that you don't have a clue as to how much actual fermentation the dough is really getting so inconsistency is going to be the name of the game over time.

Tom Lehmann/The Dough Doctor

1600

[**/ Re: Bleached vs unbleached?**](#)

Bleaching is done only to remove the beta carotene (yellow) pigments from the flour, it is 100% purely a cosmetic treatment.

As to why the new flour is performing differently I cannot say. You are dealing with two different milling lots and don't forget that we have had very high temperatures lately and there is no way of telling under what conditions the flour has been exposed to or for how long.

Tom Lehmann/The Dough Doctor

1601

[**/ Re: Flour Particle size distribution very interesting :\)**](#)

To the best of my knowledge the two main ways to measure flour particle size distribution is either by super sieving or by Micro-Trac Particle Size Analyzer. I worked with the Micro-Trac back in the late 1970's looking at a whole range of flours to see if particle size distribution varied much between the different mills and if particle size distribution had a significant impact upon flour performance characteristics. Surprisingly, we found very little variation in particle size distribution (this is amazing and a testament to the knowledge of the flour millers) between different mills and milling companies for like flour types and when we

experimentally milled flours with different particle size ranges the only impact we saw was on both total flour absorption as well as the rate of hydration once water was added to the dough.

I think this is why we usually don't see much research done on particle size.

Tom Lehmann/The Dough Doctor

1602

/ Re: Dough balls cold ferment

Things that may cause a dough ball to flatten during the fermentation period:

- 1) Dough absorption (higher = flatter)
- 2) Amount of gluten development during mixing (more = less flat). To a point, then it's reversed.
- 3) How tightly the dough ball is rounded (tighter = less flat)
- 4) Use of additional enzymes = flatter.
- 5) Finished dough temperature (higher = flatter)
- 6) Temperature of room or fridge (higher = flatter)
- 7) Flour strength (stronger = less flat)
- 8) Failure to cross-stack = flatter.

Those are the high points.

Tom Lehmann/The Dough Doctor

1603

/ Re: Hydration Percentage, Baking Time, and Oven Temperature

66 to 68% will probably give you the best results at those temps, don't know your dough formula but there should not be any sugar, eggs or milk in it if you are looking for optimum crispiness.

Tom Lehmann/The Dough Doctor

1604

/ Re: High hydration balling

Without knowing your dough formula and how you're managing it I can't say very much except to maybe try to knead in more flour, then give the dough some bulk fermentation (2-hours?) which will allow time for the newly incorporated flour to hydrate, then ball and allow the dough balls to rest until they can be opened.

Tom Lehmann/The Dough Doctor

1605

/ Re: Hydration Percentage, Baking Time, and Oven Temperature

Lower absorption doughs are slower to expand (oven spring) in a very hot oven so they tend to retain more moisture than higher absorption doughs which expand more freely and as a result exhibit better bake-out resulting in a crispier finished crust, now, if the crust will RETAIN that crispiness is a totally different matter, one which depends more upon baking time/temperature than dough absorption.

Tom Lehmann/The Dough Doctor

1606

[/ Re: At what temperature should I be doing a cold ferment?](#)

I think a better solution might be to experiment with finished dough temperature. Begin incrementally reducing the finished dough temperature to see if you can get improved results. I'm guessing if you can get it down to something in the 60 to 65F range you might get away with it. That still doesn't address a sub-par refrigerator though, but it might allow you to use it for dough storage only.

Desperate times call for desperate measures.

When I was in Quito, Ecuador our cold room (can't call it a cooler or refrigerator) was nothing more than an insulated room packed with frozen meat and seafood for use by the hotel restaurants. No electricity, no nothing! The only way we could hold dough in that room was to make dough as cold as possible, which was right at 60F, using ice and ice water. The longest time we could get from the dough was 48-hours so we were able to make it work for us.

Tom Lehmann/The Dough Doctor

1607

[/ Re: Reballing..is it hopeless..or am I just doing it wrong?](#)

When dough is fermented prior to being placed in the fridge two things happen, (1) the dough becomes less dense and a much better insulator which allows the dough to continue fermenting for a significantly longer period of time at a faster rate, this is exacerbated by the development of heat in the dough through heat of metabolism which is continually warming the dough to some extent. (2) The acids and enzymes will continue to work on the gluten to further weaken it during that extended CF period. Why not reverse your order? CF first, then RT ferment? This will help to reduce the acid development so the protein/gluten isn't exposed to the acids for such a long time. Remember, fermentation is much like marinating a tough piece of meat, the right amount is beneficial but too much will give the meat all of the fine mastication properties of a piece of liver.

With this said, I have no way of knowing if you are exceeding the fermentation tolerance of your flour or not. Not all flours will tolerate that kind of fermentation, so you may need to experiment with different fermentation times to find out what is right for your specific flour.

Tom Lehmann/The Dough Doctor

1608

[/ Re: Apple Pizza Desert I serve in my restaurant](#)

Looks great!

Try brushing the skin with melted butter (edge to edge) then sprinkling with a cinnamon-sugar mixture before adding the apple, this turns the crust into something more like a pastry than a pizza crust. I do this with my dessert pizzas and it adds a whole different dimension to the flavor.

Tom Lehmann/The Dough Doctor

1609

[/ Re: At what temperature should I be doing a cold ferment?](#)

36 to 38F is an excellent temperature to operate a walk-in, reach-in or home refrigerator at.

Tom Lehmann/The Dough Doctor

1610

[/ Re: Inconsistencies in hydration between sacks of flour](#)

No two lots of flour are made from the same grist (blend of wheats) so it is up to the flour miller to do his/her magic to produce a finished product with the consistency we have come to expect. This is why so much testing is done on wheat and flour as it provides the tools/information needed by the flour miller to develop a grist to meet the specific needs of the flour being milled. Even with all of the data available and "magic" performed, things still go awry once in a while, and if that's not enough, with imported flour the conditions under which the flour is held during shipment may not always be the most conducive to maintaining the quality of the flour. Even domestic flour is highly subject to unfavorable storage conditions during distribution, so despite the best efforts, flour is still possibly the single most variable ingredient we work with. This is why in commercial applications the bulk flour delivery is always accompanied with a Farinograph report of the flour which shows flour absorption, mixing time, and strength characteristics for that specific lot/shipment of flour, using the Farinograph report the production facility will then make the necessary changes to their processing of the dough to maintain a consistent quality dough.

Flour is variable, especially when it comes to absorption, you may not always see it at home but it is still there, sometimes though it is more evident than at other times for any number of reasons.

Tom Lehmann/The Dough Doctor

1611

[/ Re: At what temperature should I be doing a cold ferment?](#)

RETURN IT! 40F is the absolute HIGHEST temperature that you should be holding any refrigerated food at and once you open the door or put anything into it 40F is just a passing memory.

Tom Lehmann/The Dough Doctor

1612

[/ Re: Dough balls cold ferment](#)

Yes, if it's placed in the fridge right after mixing, scaling and balling.

Tom Lehmann/The Dough Doctor

1613

[/ Re: Dough balls cold ferment](#)

Here's a list of things that will help:

Finished dough temperature: 75 to 80F (favoring 75F).

Tightly round/ball the dough.

Lightly oil the dough balls, not the inside of the box. Best is to place dough balls into unoiled box and then lightly wipe the top of the dough balls with oil. This will prevent the dough balls from skating around in the box.

Leave the dough box uncovered for at least 2-hours (preferably until the internal dough ball temperature reaches 45F) then apply the lid.

These simple steps should effectively address the problem you're experiencing.

Tom Lehmann/The Dough Doctor

1614

[/ Re: Dough wet and sticky after 24 hour cold ferment](#)

Richard;

I think your problems stem from two issues, one is due to the fact that you are tightly lidding the fermentation container right away upon placing it in the fridge, instead do this, lightly oil the dough ball when you place it into the container, then leave it UNCOVERED for at least 2-hours before applying the lid. If you use a snap on lid be sure to make a couple pressure release cuts/holes in the lid, a much better option is to use a loosely fitting cover, like a piece of aluminum foil.

Secondly, I don't think you're mixing your dough long enough, it needs to be mixed just until the dough takes on a smooth, satiny appearance. What is the finished dough temperature? You should be looking for something in the 75 to 80F range.

Tom Lehmann/The Dough Doctor

1615

[/ Re: how to get the ash content from self milled flour?](#)

Huh? I just Googled it again and it gave me the entire process step by step including temperatures, no I'm not a member either.

Google: AACC ash measurement procedure for flour.

Tom Lehmann/The Dough Doctor

1616

[/ Re: Rogers nothing added flour for Canadians](#)

It sounds like the dough just needs more fermentation when it's made with that specific flour. If that's out of the question you can also increase the finished dough temperature to something in the 84 to 86F range, that will provide more fermentation to the dough within the same time period.

Tom Lehmann/The Dough Doctor

1617

[/ Re: how to get the ash content from self milled flour?](#)

May I ask why you want to measure the ash content of your flour? The ash content has little, if any, impact on flour performance. It does impact the color of the

finished crumb (not a big deal with pizza), it is used mostly to provide some measure of flour extraction as well as a quasi measure of flour quality as it relates to protein content. By this I mean that you can have two flours with the same protein content but different ash contents, as a rule the flour with the lower ash content will be the stronger of the two, that's about where the usefulness of ash content ends. In the U.S. a typical patent grade flour made with a 78% extraction will have about 0.54% ash content while whole wheat flour will go about 1% or a bit more.

If you want to accurately measure the ash content of the flour Google "AACC Approved Methods" and you will find the approved method for determining the ash content of flour.

Tom Lehmann/The Dough Doctor

1618

/ Re: Dough Storage

Breaking the dough down into the smallest size pieces possible will be the best way to handle the dough, this means scaling it into desired weight pieces, and form into balls, lightly oil each dough ball and place into individual plastic food bags (like bread bags) DO NOT use Zip-Lock bags. Pull the bag snug to the dough ball, twist the open end into a pony tail and tuck the pony tail under the dough ball as you place it into the fridge. To use the dough you will need to remove it from the fridge about 90-minutes prior to use, roll the bag down around the dough ball and invert it over a floured surface, flour the entire dough ball and begin opening into a skin by your preferred method.

Tom Lehmann/The Dough Doctor

1619

/ Re: Pizza dough, fridge bulk ferment

Probably at least 4-hours.

Tom Lehmann/The Dough Doctor

1620

/ Re: Pizza dough, fridge bulk ferment

Probably not as there will probably not be sufficient time for the dough balls to sufficiently relax for opening into skins, a much better approach would be to mix the dough, take immediately to the bench for scaling and balling, lightly oil each dough ball and place into individual plastic bags, twist the open end of the bag into a pony tail and tuck in under the dough ball as you place it into the fridge. To use the dough ball(s) remove from fridge about 90-minutes prior to the time when you want to open them into skins, roll the bag down around the dough ball and invert over a floured surface allowing the dough ball to fall from the bag into the flour, flour both sides of the dough ball and open into a skin in your normal manner.

Tom Lehmann/The Dough Doctor

1621

[/ Re: I just exploded a stick of butter in the microwave](#)

After cleaning out your skivvies the real fun begins with cleaning the mess outta the microwave. :-D

Tom Lehmann/The Dough Doctor

1622

[/ Re: Bread question for Tom](#)

QJ;

Your "funny thing" observation might be giving us some insight into the problem, as the dough is warmer with the molasses/oatmeal bread and you don't have the keyholing problem this would lend credence to the fact that we are probably on the right track with increasing the finished dough temperature. This just underscores why it is important to always monitor finished dough temperature and in the case of bread making, target the same finished dough temperature, regardless of the type of bread being made.

Tom Lehmann/The Dough Doctor

1623

[/ Re: Bread question for Tom](#)

If I understand you correctly you make the "dough" in the afternoon, divide into 30.8-ounce pieces and cold ferment the dough pieces overnight, in the morning you remove it from the fridge at 6:00 a.m. and allow the dough to rise (no sure how much it's going to rise as it just came out of the fridge) and then at 7:45 a.m. you mould and pan the dough, allow it to final proof for 75-minutes, then bake at 350F for 35 to 40-minutes. If this is correct the dough does not receive sufficient fermentation time (typically 3 to 5-hours at room temperature for pan style loaf breads). Pan breads react very differently to yeast level than pizza doughs, as you can almost walk the volume/height of the bread up or down using adjustments in the yeast level. An increase in yeast level will only result in more dough expansion (oven spring) which will only further exacerbate the problem. Instead, try increasing the finished dough temperature which will allow the dough to ferment longer and faster in the fridge. I would suggest going up in 5F increments. Let's see if that will effectively address the problem. One other thing, just to confirm, your pans ARE dark colored, right? I also suggest looking for a finished internal loaf temperature of a little over 200F (193F is really not sufficient for what you are doing). I don't know your dough formula but the loaves look to be a bit light in color (camera or actuality?), you can develop a stronger side wall on your loaves by using sufficient sugar in the formula to achieve a nice brown/mahogany colored top and side wall.

Tom Lehmann/The Dough Doctor

1624

[/ Re: Bread question for Tom](#)

QJ;

By the way, the official name for that fault is "keyholing", if you cut a slice from the

loaf it will look like an old fashion keyhole.
Tom Lehmann/The Dough Doctor

1625

[/ Re: Bread question for Tom](#)

QJ:

That's an easy one to answer, Assuming you're removing the loaves from the pan immediately upon removal from the oven and the loaves are sufficiently baked (at least 20-minutes for a 1-pound loaf) insufficient dough fermentation is the answer. I've seen it happen hundreds, if not thousands of times over my years in running the Baking Research Lab at AIB.
Tom Lehmann/The Dough Doctor

1626

[/ Re: Volume vs Fermentation](#)

2% IDY with extended room temperature fermentation time would be considered outrageous. That amount of yeast would probably metabolize all available sugar in 6 to 10-hours.
Tom Lehmann/The Dough Doctor

1627

[/ Re: Help me with making dough](#)

Your mixing attachment, looks like it should do the job, just watch the dough during mixing, you do not want to see the dough grabbing onto the attachment and going for a ride around the inside of the mixing bowl, if it does you will need to mix at a higher/faster speed. If the mixer complains when you do that you will need to down size your dough so as not to over load the mixer.
Tom Lehmann/The Dough Doctor

1628

[/ Re: Volume vs Fermentation](#)

No, it just takes more time to achieve the same level of fermentation when using a smaller amount of yeast. This is why we use a higher yeast percentage when making a no-time/emergency dough than we do when making a 5-day cold fermented dough.
Tom Lehmann/The Dough Doctor

1629

[/ Re: Help me with making dough](#)

Your dough looks to be extremely under mixed. This could be the result of a "J" hook on your mixer as opposed to a reverse spiral dough arm, can you show a picture of your dough mixing attachment? Then too it might be due to mixing a

very small dough size where the mixing action is quite poor. It can also result from mixing at too low of a speed, generally 1st/low speed just doesn't cut it as you need to do the bulk of mixing at a higher speed. A correctly mixed dough should come out of the mixing bowl looking smooth. If you go to my web site

<www.doughdoctor.com> I have a series of videos posted and in one of those videos I show how to stage the ingredients in the mixing bowl and mix the dough to the proper consistency. While the video is made using a commercial size mixer you can achieve the same characteristics using a smaller size mixer too.

Tom Lehmann/The Dough Doctor

1630

/ [**Re: Final proof time for pan pizzas \(working on Roman al taglio\)**](#)

By allowing the dough to proof for a longer time in the pan immediately prior to baking will impart a more open, porous crumb structure to the finished crust.

Tom Lehmann/The Dough Doctor

1631

/ [**Re: Hydration - How low can I go?**](#)

The issue is not protease enzymes but instead amylase enzymes which convert starches into sugars. Flours with unusually high levels of damaged starch will exhibit a fairly high initial absorption since damaged starch readily absorbs water (native/intact starch does not readily absorb water), then as the dough begins to ferment the enzymes contained with the yeast hydrolyze the damaged starch very fast, releasing the water it absorbed in the process, hence a "gooey" dough. This could potentially be compounded if the wheat from which the flour was milled had a low Falling Number value (under 200).

There are some countries where the flour is milled on purpose to achieve a higher than normal level of damaged starch as it allows for the addition of more water to the dough BUT it also limits total fermentation time to something like 60 to 75-minutes.

Tom Lehmann/The Dough Doctor

1632

/ [**Re: Volume vs Fermentation**](#)

JPB;

It's simple math, each yeast cell metabolizes sugars during the process which we call "fermentation" as a byproduct each cell produces acids, alcohol, and carbon dioxide plus a small amount of heat resulting from the heat of metabolism. It is primarily the carbon dioxide that is responsible for the increase in volume/decrease in density of the dough during the fermentation period so the more yeast cells you have doing this the more carbon dioxide is being produced within any given period of time and the dough becomes greater in volume. Because commercial yeast is somewhat standardized, meaning if you add "X" amount of yeast, within a given period of time you will get a specific amount of fermentation taking place and if you add "2X" amount of yeast you will (with fairly good predictability) get twice the amount of fermentation taking place (assuming there is sufficient nutrient to feed

all of the yeast). With a sourdough you have a bacterial culture which can exhibit a different growth rate than yeast and add to that you have no idea of the concentration so it's no wonder that you will see a different change in dough volume, you're sorta comparing apples and watermelons from a microbiology point of view.

All things equal, less yeast means less fermentation (less effects of fermentation on the dough and flour) so a dough made with less yeast will show more signs of under fermentation than a dough made with more yeast at any given point of time. This is not to say that doughs made with smaller yeast levels will always show signs of under fermentation, they will just need more time to ferment the dough to the same magnitude that a greater yeast level did in a shorter time. The characteristics of the finished crust will reflect the amount of fermentation the dough received.

Tom Lehmann/The Dough Doctor

1633

/ [**Re: "Goosey" dough issue \(after baking\)**](#)

You may call me anything you want, just don't call me late for dinner, especially if pizza is being served. :-D

The only thing you need to do is to pull the twisted end tighter under the dough ball, you want to have the bag nice and snug around the dough ball.

Tom Lehmann/The Dough Doctor

1634

/ [**Re: Hydration - How low can I go?**](#)

It sounds a lot like a high starch damage flour. Try making a dough, immediately scaling and balling after mixing and open the dough after 60-minutes, let me know if the dough handles OK, allow another dough ball to ferment for 2.5-hours to see if it goes all slimy on you.

Tom Lehmann/The Dough Doctor

1635

/ [**Re: First batch of dough with the NutriMill**](#)

If I might offer a suggestion; reduce the amounts of olive oil and ADY by 50% which will bring them more into line with what is typically used for the dough management procedure it appears that you are using. Also, adjust the water temperature to give you a finished dough temperature in the 75 to 80F range which means you will most likely want to start with 65F water and make further adjustments with following doughs if necessary.

Tom Lehmann/The Dough Doctor

1636

/ [**Re: Having trouble with the bottom of the crust**](#)

If your oven heats from the bottom move the stone to a lower rack position, if it has a broiler you can also turn on the broiler while moving the stone to a lower rack

position, my guess is that your stone isn't retaining sufficient latent heat so it needs to be closer to the bottom heat source. The other option is to get a thicker stone.
Tom Lehmann/The Dough Doctor

1637

/ Re: Help me with making dough

Either one works OK, the carbon dioxide generated by the yeast as it ferments will help to provide a protective blanket over the surface of the dough to further prevent drying. However, "loosely" is a pretty subjective term, my definition could be defined as a piece of foil placed over the container with the overlapping edges pulled down but not crimped or fastened to the fermentation vessel/container. In this case you will still need to allow the container to remain uncovered for 2-hours or more before applying the loose fitting lid, if not you will find condensation forming on the underside of the lid.
Tom Lehmann/The Dough Doctor

1638

/ Re: Having trouble with the bottom of the crust

Where is the stone positioned in the oven and what is the thickness of the stone?
Tom Lehmann/The Dough Doctor

1639

/ Re: Final proof time for pan pizzas (working on Roman al taglio)

The length of proof time will depend on a number of things such as dough temperature, amount of yeast used in the dough, amount of salt used in the dough, room temperature, dough absorption and to some extent the use of fat in the dough as well as the total dough absorption and flour strength. My advice has always been to proof the dough in the pan sufficiently to give you the desired volume/height and crumb structure characteristics that you are looking for. In most cases this time will fall somewhere between 45 and 75-minutes, but in some pizzerias where the dough will be placed in the cooler for storage for use later in the day the final proofing time can be as short as 20 or 30-minutes outside of the cooler, but keep in mind that the dough will continue to proof, to a more limited extent, in the cooler to in reality the final proof time is longer than 20 or 30-minutes.

1640

/ Re: Dough,Dough, Dough

I can't say that I've ever made a "trash" pizza for practice. Instead, I've always tried to make a decent pizza, with whatever I've had on hand. This way it becomes an effective learning process. You can use the house brand tomatoes as well as the house brand mozzarella cheese but always strive to make the best pizza you can, even if you're just practicing opening the dough ball into a pizza skin, make the best you can, you will be rewarded for it as your other skills will improve at the

same time and you will expand your horizons for making pizza with different ingredients and learning how to cope with different quality ingredients, you might be surprised at how good a pizza you can make using "no name" canned tomatoes and "no name" mozzarella cheese. Just about anybody good pizza maker can make a decent pizza using the "best" ingredients (whatever those might be) but it takes a master to do it using common, no name ingredients.

Just the opinion of someone who's been there and done that.

Tom Lehmann/The Dough Doctor

1641

/ [Re: Help me with making dough](#)

To be honest with you, there is absolutely nothing wrong with using a 12%/12%+ protein content flour to make your pizzas. My go to flour has, on average, 12.2% protein content and I use it to make most of my pizzas.

Tom Lehmann/The Dough Doctor

1642

/ [Re: Help me with making dough](#)

At 14mm I think the steel will give better results than the unglazed tile.

Tom Lehmann/The Dough Doctor

1643

/ [Re: Individual proofing boxes from Ikea](#)

When using individual containers like this just remember to lightly oil the dough balls and leave the lids off of the containers until the dough reaches an internal temperature in the 45 to 50F/7.2 to 9.9C range. If you lid the containers right away you will get significant condensation forming in the containers. There have been some recent posts on this very topic. If you don't want to go to the trouble of lidding the dough balls sometime after they have been put into the fridge you can use individual plastic bags for storing the dough balls, with this method all you need to do is to lightly oil the dough ball, drop it into a bag (like 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, no need to come back to it until you are getting ready to make your pizzas. To use the dough ball just remove from the fridge about 90-minutes prior to opening (exact time is determined by the length of time needed for the dough ball to warm to 50 to 60F/9.9 to 15.5C, then just roll the bag down around the dough ball and invert the bag allowing the dough ball to fall from the bag onto a floured surface, flour the dough ball and begin opening it into a skin by your preferred method. The bags can be reused several times if desired. A number of posters here use this method as do I. It works very well for all but the very high absorption doughs.

Tom Lehmann/The Dough Doctor

1644

/ [Re: Help me with making dough](#)

How thick are they?
Tom Lehmann/The Dough Doctor

1645

[/ Re: Vinegar or lemon in sauce](#)

Tomatoes are an acid fruit to begin with, if they are commercially canned citric acid is added to further acidify them to help retain their color and as a food safety measure. Unless it's strictly a flavor thing for some varieties of low acid tomatoes, I don't know why cider vinegar or lemon juice (citric acid) would be added to the sauce. At least with the tomato varieties we work with here in the U.S. (both canned and fresh) if there is a frequent complaint about the sauce it might be that it is too acid, so aside from a flavor thing I'm at a loss as to why additional acid would be added (assuming the sauce is not going to be canned).

Tom Lehmann/The Dough Doctor

1646

[/ Re: "Goosey" dough issue \(after baking\)](#)

I think with a little more practice at opening the dough balls into skins you will be very happy with the results. Try this to see if it will work for you, use a rolling pin or pastry pin to open the dough ball to about 2 to 3-inches smaller than the desired finished diameter, then finish opening the dough by hand to the full diameter. We used this method to train those who were challenged in ability to open the dough into a skin. By partially opening the dough using a pin you get as much more uniform thickness across the entire diameter, once you get the hang of it you will gravitate away from the pin altogether.

Tom Lehmann/The Dough Doctor

1647

[/ Re: Thin Style Pizza](#)

No need to tie a knot in the bag to close it, just twist the open end into a pony tail and tuck it under the dough ball as you place it into the fridge.

Tom Lehmann/The Dough Doctor

1648

[/ Re: Help me with making dough](#)

Note:

In the excellent post by Rolls he recommended a pizza screen in his equipment list, just make sure you season the pizza screen before using it or the screen and pizza will be "as one" after baking. To season the screen just wipe it down with oil and place it into an oven at not over 400F for about 20-minutes, remove it from the oven and repeat the process again. The screen has now been seasoned and is ready for baking. DO NOT wash your screens, instead, just wipe them down with a clean towel, if you get crud on it just allow it to bake off. As you continue to use the screen the seasoning will continue to darken to a black color, this is normal and

desirable. Note that once a screen has been properly seasoned it does not need to be oiled for any future use.

Tom Lehmann/The Dough Doctor

1649

/ [Re: "Goosey" dough issue \(after baking\)](#)

Ditch the Zip-Lock bags and plate, instead go with plastic Food Bags, or in a pinch plastic shopping bags will work OK, lightly oil the dough ball and drop it into the bag, pull the bag down around the dough ball and twist it to close, tuck the twisted pony tail under the dough ball as you place it into the fridge, to use the dough ball just remove from the fridge about 90-minutes prior to the time you want to use it (you are looking for an internal dough ball temperature between 50 and 60F when you open it), turn the dough ball out of the bag onto a floured surface, make sure the entire dough ball is well floured and you're ready to begin opening it into a skin.

My advice is to forget about using the beer for now until you've mastered your first few pizzas, then begin by replacing 50% of the water with a lager beer, master that and increase to your liking.

By the way, adding oil to the dough will not do much for the crust color, you need to add sugar, milk or eggs for that, use sugar for now.

Tom Lehmann/The Dough Doctor

1650

/ [Re: "Goosey" dough issue \(after baking\)](#)

While softened water does contain some sodium it is not sufficient to impact the dough with regards to salt level, additionally, soft water tends to make for a softer dough with slightly less absorption capacity. The best water to use when making dough is just plain old hard water. We have discussed the effects of hard and soft water in previous posts.

Tom Lehmann/The Dough Doctor

1651

/ [Re: Rogers nothing added flour for Canadians](#)

Brent;

That's ascorbic acid, not citric acid. The AA is most likely encapsulated to provide a slower reaction as AA uncoated reacts in the mixing bowl. The enzymes which would be appropriate for use in a bread improver are most likely oxidative enzymes which function in a similar manner to low levels of potassium bromate. The rest appears to be nothing more than enriched wheat flour used as a filler/diluent. In short, it appears that you may have taken the nothing added flour and turned it into a regular bread type flour by adding the improver.

Tom Lehmann/The Dough Doctor

1652

/ [Re: "Goosey" dough issue \(after baking\)](#)

OMG! I agree with the others on the malt, 4% is WAY TOO MUCH for any kind of diastatic malt, and add an extra "WAY" if the flour you're using is already malted. Your dough fermentation rate must be crazy fast too with 1% IDY and only 1% salt. I would suggest reducing the amount of IDY to not more than 0.5% (half of the amount you're presently using) and increasing the salt to something in the 1.75 to 2.5% range. At 1% salt the crust will typically have what is referred to as a "starchy" taste.

Note: A typical characteristic to excessive diastatic malt is an excessively soft, sticky, gummy crumb structure, when you bite into the crust it will stick to your teeth, sound familiar?

Tom Lehmann/The Dough Doctor

1653

/ [**Re: First Pizza**](#)

Without knowing your dough formula and management procedure I can't comment on the dough absorption, but if you're having difficulty handling the dough you might want to back the absorption down by 5% and as you become more proficient then begin increasing the absorption gradually, remember, ever dough has its own sweet spot when it comes to absorption, it is not one of those "one size fits all" type of things and when you add in the proficiency factor you add a whole different dimension to the dough absorption.

Tom Lehmann/The Dough Doctor

1654

/ [**Re: Hydration on very humid days**](#)

The thing that you do want to watch is the finished dough temperature which can change (increase) on warmer days unless you're in an air conditioned environment, but then you wouldn't be concerned over the humidity. As a general rule, 70 to 75F is a good targeted finished dough temperature but your specific method of dough management might call for something different, point is, just strive to keep it constant by adjusting the water temperature as necessary.

Tom Lehmann/The Dough Doctor

1655

/ [**Re: Baking pizza at high altitude**](#)

Harvest King like "00" flour? No way! They are two entirely different flours milled from very different types of wheat.

Tom Lehmann/The Dough Doctor

1656

/ [**Re: Oven Parts**](#)

When it comes to air impingement ovens Lincoln, XLT, and all others except Middleby Marshall you can buy most of the electronics from the industrial supplier McMaster Carr.

Tom Lehmann/The Dough Doctor

1657

[/ Re: Getting closer !!!](#)

From the looks of your first pictures it looks like there is a lot of residual dusting flour on the baked crust which might explain the dry mouthfeel. Two minutes probably isn't sufficient mixing, which would result in a tacky dough requiring more dusting flour and the dusting flour is more likely to adhere to the tacky dough, try going for 6-minutes on your next dough, then go for 8-minutes, go directly from mixer to bench for scaling and balling, then lightly oil the dough balls, and plastic bag them (don't use Zip-Lock bags), hopefully the 0.9% yeast is CY, but if by chance it's IDY reduce the amount to 0.4% or if ADY use 0.5%. Allow the dough to cold ferment for 48-hours, then remove from the fridge and allow to warm to 50 to 60F before opening it into a skin for immediate use.

Tom Lehmann/The Dough Doctor

1658

[/ Re: Baking pizza at high altitude](#)

I've baked pizzas at elevations from San Diego, California to Quito, Ecuador and everything in between, including Denver, Colorado. The fact that the water will boil off sooner at high elevations only results in a drier finished product. To prevent this we typically bake at a higher temperature providing a shorter bake time thus conserving moisture in the product. The reduced atmospheric pressure at the higher elevations will increase oven spring and bake volume (sometimes rather significantly depending upon altitude) which helps with getting a thorough bake with the reduced bake time. This is easily addressed by adjusting the yeast level to give the same volume as achieved at sea level (if that's what we're looking for). Just out of curiosity, have you checked the color of the gas flame to make sure you have sufficient oxygen? I've seen this problem at high altitude a number of times over the years and if the gas fuel mixture is not correctly balanced the oven will still operate but not as efficiently.

Tom Lehmann/The Dough Doctor

1659

[/ Re: How to make dough more relaxed](#)

Jr07;

If you tell us what type of pizza you are making and provide a copy of your dough formula and dough management procedure we might be able to provide you with some helpful suggestions.

Tom Lehmann/The Dough Doctor

1660

[/ Re: Neapolitana Pizza Dough with a Poolish](#)

It's just a matter of preference as to whether one uses a poolish or not but if one is

mixing their dough by hand a poolish makes the mixing process a bit easier.
Tom Lehmann/The Dough Doctor

1661

/ [**Re: What can I add to dough for good browning of pie**](#)

If it's just the outer crust/rim that you want more color on egg wash will work as will milk wash or even just painting it with olive oil.
Tom Lehmann/The Dough Doctor

1662

/ [**Re: 48 hour room temperature proof...bad or not?**](#)

Just don't over work it when you're rolling it out, I think it'll be fine.
Let us know how it turns out.
Tom Lehmann/The Dough Doctor

1663

/ [**Re: bulk retard vs ball retard**](#)

When we reference "ambient" temperature as it pertains to dough storage we are typically referring to temperatures in the 70 to 85F range. But when asking what is the ambient room temperature? It is what it is.
Tom Lehmann/The Dough Doctor

1664

/ [**Re: Browning "white" neapolitan pizza**](#)

Are you following the current posts on this very topic?
Tom Lehmann/The Dough Doctor

1665

/ [**Re: Too much leoparding but very white crust**](#)

To address your question regarding acidity and crust color development, during fermentation three main acids are produced, acetic, lactic and propionic, this is why the pH of the dough and also the finished crust is decreased with longer fermentation times or conditions resulting in a greater amount of fermentation. It is well recognized that lower pH environments have an inhibiting effect upon crust color development, this explains why sourdough breads have such a light crust color. Conversely, a higher pH will promote more crust color development, but before you run off and start thinking about adding soda to the dough remember that yeast is an acid loving micro organism so it fares much better in an acidic environment than it would in an alkali environment (this is why yeast fermentation produces acids as a byproduct, to improve its environment for its own survival), all micro organisms pretty well operate this way, producing byproducts conducive only to their own survival. If you were to add soda to the dough to enhance crust color

the yeast would ferment very sluggishly, if at all, depending upon the amount of soda added, and the finished crust flavor would not be something you would be drooling over.

Tom Lehmann/The Dough Doctor

1666

/ [Re: Hobart A 200 restauration](#)

Here is how you remove those dents from the bowl.

Materials needed:

A bag or two of fine sand

Make a square wood frame about 5 to 6-inches high and about 18-inches square.

What to do:

Pour the sand into the wood frame.

Wet the sand (to about the consistence needed as if you were building a sand castle.

Place the bowl into the sand so the dent you are removing is at the 6 o'clock position.

Push the bowl down firmly to nestle the bowl into the sand.

Using an auto body hammer with a convex face carefully begin working the dent out starting at the edges of the dent and going around it working towards the center. If you don't have or can't borrow an auto body hammer use a carpenter's claw hammer (it has a convex face). Go slow, use many taps from the hammer and the dent will be worked out. The reason for using the wet sand is because it provides support for the surrounding metal so all that is worked out is the dent. Repeat this for each dent. I used to repair dented bowls for our A-200 mixers at AIB this way and they came out just fine.

NOTE: DO NOT USE A BALL PEEN HAMMER.

After you get the bowl "de-dented" let me know if you need help adjusting the bowl clearance.

Tom Lehmann/The Dough Doctor

1667

/ [Re: Introduction - Stiff starter](#)

I don't have a "recipe" but I do have a dough "formula" in bakers percent.

Sponge:

Flour: 60%

Water: 50% (based on the weight of the sponge flour)

Yeast: 0.25% (based on the weight of the sponge flour)

Set Temperature: 70F/21C

Allow to ferment 18 to 24-hours at room temperature.

Dough:

Flour: 40%

Salt: 2%

Sugar: 2% (optional/don't know what type of pizza you are wanting to make)

Water: 60% +/- (based on TOTAL flour minus what was added to the sponge)

Note: Yeast percentage is based on CY (compressed yeast).

Tom Lehmann/The Dough Doctor

1668

/ [Re: bulk retard vs ball retard](#)

Sallam;

Less dense = lighter in weight for a given volume.

Better insulator = resists temperature change.

Resistant to temperature change = more difficult to change the temperature.

In all probability, room temperature fermentation is going to be the best when using a sourdough starter.

Tom Lehmann/The Dough Doctor

1669

/ [Re: Hobart A 200 restauration](#)

Maybe it's just the angle of the picture but it looks more like an A-120 (12-quart) mixer. In any case you will want to replace the useless "J" hook and get a reverse spiral dough arm for your mixer, you'll be glad you did after trying to mix your first dough. That was a really great find, you've got most of the attachments (all of the most commonly used ones) with it too. Good Deal!

Be sure to bolt it down to the table you mount it on, we've had more than one take a walk off of the bench at AIB (not a pretty sight). If the bowl is rusted you can have it tin plated to restore it to "like new".

If there are any dents in the bowl, pretty common) let me know and I'll let you know how to remove them (do NOT go beating away at them with a hammer!). When you get a reverse spiral dough arm you will want to check and probably reset the clearance between the bottom of the dough arm and the bowl, it makes a big difference in how the doughs mix.

Tom Lehmann/The Dough Doctor

1670

/ [Re: Too much leoparding but very white crust](#)

Additionally, I think it's the increase in acidity of the dough that is preventing the crust from developing more color. If you make a pizza from the dough at 24-hours and the crust develops better color this would give validity to that premise.

Tom Lehmann/The Dough Doctor

1671

/ [Re: Flour Source in Eastern MA](#)

Try these:

www.Fourstarfarms.com

www.maine grains.com

Tom Lehmann/The Dough Doctor

1672

[/ Re: What can I add to dough for good browning of pie](#)

You can add sugar to the dough formula about 3% should be right. You can also replace 50% (1/2) of the water with whole milk. Be sure to scald the milk first, then allow it to cool in the fridge for a few hours before using it. Either of these should improve the color of your finished crust.

Tom Lehmann/The Dough Doctor

1673

[/ Re: Mixing Time](#)

Mixing time is the same regardless of how long you plan to CF the dough. Mix the dough JUST until it takes on a smooth appearance, more than that is not necessary or desirable.

Tom Lehmann/The Dough Doctor

1674

[/ Re: bulk retard vs ball retard](#)

It really doesn't work that way, pick one, cold fermentation or room temperature fermentation and go with it. After the dough has cold fermented it will be significantly less dense making it a better insulator and more resistant to temperature change so it will be just all that much more difficult to manage, even in ball form. Another question is, how does your sourdough starter perform under refrigerated conditions? Some starters go all but dormant at refrigerated temperatures so placing the dough in the fridge would be an exercise in futility as not much will happen. Additionally, my comments on a dough made using refrigerated dough management v/s room temperature dough management was based on the use of yeast, not a sourdough starter. The use of a sourdough starter will essentially wipe out any perception of flavor change as it will dominate the flavor profile.

Tom Lehmann/The Dough Doctor

1675

[/ Re: bulk retard vs ball retard](#)

Being a home pizza maker I will "assume" you are working with smaller size doughs, less than 1Kg. in total weight? Please confirm or tell me what your total dough weight is.

Tom Lehmann/The Dough Doctor

1676

[/ Re: What we have here...](#)

Your starter is comprised of various yeast and bacteria strains, refrigerated

temperatures will dramatically slow but not stop the growth rate of both, however some bacteria are more adaptive than others and will adapt to the cooler temperature and thrive thus taking over the medium and becoming the dominant strain (this is how sours are "lost").

Tom Lehmann/The Dough Doctor

1677

/ [Re: Water](#)

Yes it does, hard, potable, tap water is the best just do long as it isn't sulfur water. Distilled and soft water are not recommended as they result in a softer, slightly weaker sough condition.

Tom Lehmann/The Dough Doctor

1678

/ [Re: Dough ball, which side is the bottom?](#)

It also helps to reduce the amount of dusting flour picked up by the dough during the opening process, and because I open my dough by bench stretching the dough slides much easier on the bench top when the top (smooth) side is placed down.

Tom Lehmann/The Dough Doctor

1679

/ [Re: bulk retard vs ball retard](#)

We just recently quite a bit of discussion on this very topic, if you check back a week or two you should be able to find it.

Pizzerias (box chains) use a refrigerated dough ball method of dough management because it allows them to use the dough over a several day period and it provides much better consistency than and of the room temperature/ambient fermented doughs. As a home pizza maker you will most likely be using all of the dough that you make at one time so room temperature/ambient temperature dough management is a viable way to manage the dough, however you will need to modify the dough formula by using less yeast and paying special attention to the finished dough temperature (70 to 75F) failure to do so can end up resulting in over fermented dough. Oven spring will be about the same for both methods of dough management, as for flavor, it's hard to describe as it's pretty subtle, but room temperature/ambient fermentation provides a finished flavor similar to that of white pan bread (U.S. and U.K.) while cold fermentation provides a more complex flavor without the acidity common to crusts made from temperature/ambient temperature managed doughs.

Tom Lehmann/The Dough Doctor

1680

/ [Re: Dough ball, which side is the bottom?](#)

I always orient the dough ball so the top of the dough ball becomes the bottom of the skin.

Tom Lehmann/The Dough Doctor

1681

[/ Re: What am I doing wrong???.....](#)

Sure, you will need to make an emergency dough.

Double the amount of yeast.

Replace 2% of the water with vinegar.

Reduce the amount of sugar in the dough by 50%.

Adjust the dough water temperature to give you a finished dough temperature of 85 to 90F. (about 80F water temperature +/-)

From that point on process as directed but do not CF, instead just bag the dough balls and place on the counter top to ferment for 2-hours, then turn out of the bag onto a flour dusted surface, and open into a skin for immediate use. Don't go expecting much in terms of flavor or "digestibility" and you won't be disappointed. If you want to learn more about Emergency Doughs go back in the archives as we've had quite a bit of discussion on the topic.

Tom Lehmann/The Dough Doctor

1682

[/ Re: Mixing Time](#)

Rolls;

You are correct, we developed that test when we had our AIB Pizza Seminars and it works very well, but there is one problem with it, it is almost impossible to accurately describe how to do it much less interpret the results as your thumbs are pulling apart. I'm planning to do a new pizza video series with PMQ later next month and that is going to be one of the things that I'll be demonstrating, once seen it is easy to understand and do.

Tom Lehmann/The Dough Doctor

1683

[/ Re: Type of flour for scones?](#)

Absolutely correct, the milk will provide lactose sugar which readily browns during baking (the sucrose will not brown during baking unless yeast is present to invert it into reducing sugars). Eggs will also contribute to the browning process, but if you want more color just add some dextrose/corn sugar and you will get all the crust color you want.

Tom Lehmann/The Dough Doctor

1684

[/ Re: New home pizza maker with too much to learn](#)

All commercial wheat varieties, world wide, in use today are hybrid varieties, so much so that they are not even named anymore (not since the 1970's) they are just designated by number sequences. If you want to play with a certified pure variety search for Turkey Red wheat, it is still grown, mostly in N.W. Kansas, and available

on a limited basis. You might be able to find some on the Internet. Once you find it you will need to mill it into flour. I'm not aware of anyone selling Turkey Red flour. If you want to make the crust more digestible, think fermentation.

Tom Lehmann/The Dough Doctor

1685

[/ Re: What am I doing wrong???.....](#)

Additionally, I'm betting that your finished dough temperature is too hot (as indicated by the use of "lukewarm water" as opposed to cool/cold water) A dough that is too hot will experience excessive fermentation (further compounded by the use of 1.7% ADY which is way too high, a better level would be 0.5%) which will result in the yeast consuming all of the available sugars with little or nothing left for browning plus a byproduct of fermentation is acid which will also inhibit crust color development so the excessive fermentation is serving you a double whammy. With only 1.3% salt I'm also betting that the finished crust leaves a bit to be desired in the flavor department, the crust might even taste "starchy" which is an indication of insufficient salt. Since salt also regulates the fermentation rate it is further compounding the excessive fermentation issue cited above, sometimes ya feel like you just cant win.

I can't comment on the malt powder that you're using as I don't know the L (Lintner) value of it. I always use a 20L malt powder at 0.25% when I'm working with an unmalted flour. As for mixing the dough, just mix it until it takes on a smooth appearance. Use just a small amount of the water at 100F to suspend and activate the ADY in and adjust the temperature of the remainder of the water to 60F. Be sure to add the cold water and the yeast suspension to the bowl first, then add the flour, malt powder and salt and sugar if you are using it last, then begin mixing. Mix just long enough to achieve a smooth dough appearance. Measure the finished dough temperature, you are looking for a temperature in the 70 to 75F range. Immediately scale and ball the dough, wipe the dough balls with a little oil and place into individual plastic bread bags (not ZIP-LOCK), twist the open end into a pony tail and tuck it under the dough ball as you place it into the fridge to ferment overnight. When you're ready to use the dough on the following day remove the dough balls from the fridge about 90-minutes before you plan on opening them into skins, once opened, dress and bake immediately.

I think this will get you started to making a much better pizza. Keep us posted on your results.

Tom Lehmann/The Dough Doctor

1686

[/ Re: Mixing Time](#)

In one word: ABSOLUTELY. There are just so many variables at play when it comes to mixing time that providing an approximate mixing time is like trying to predict the weather. The mixing attachment type and speed, the type of mixer, size of the bowl, size of the dough, dough absorption, flour characteristics, dough formulation, even the surface texture of the bowl comes into play. Don't worry about the time, instead mix the dough JUST until it takes on a smooth appearance and then adjust the water temperature to give you the targeted finished dough temperature

Tom Lehmann/The Dough Doctor

1687

/ Re: How should the dough after bulk look like ?

When the dough is bulk fermented prior to CF there is no way I can say how long you will need to CF the dough balls as I have no idea of how much fermentation the bulk dough has already received.

We just recently discussed bulk fermentation and ball fermentation, for many home pizza makers there isn't any difference if you bulk ferment or ball ferment because of the minor difference in dough size. Due to the higher ambient temperature room temperature/ambient fermented dough formulas will contain less yeast than CF dough formulas.

With regard to allowing your dough balls ferment at room temperature (25C/77F) the answer is: only until they can be easily opened into skins.

With regard to allowing the dough balls ferment at 18C/64F) the answer is the same.

Tom Lehmann/The Dough Doctor

1688

/ Re: Found NY style Pizza in Vegas. But, how to make dough without NYC water/flour?

It's just added as you would any other dry ingredient, I've always added it right on top of the flour.

Tom Lehmann/The Dough Doctor

1689

/ Re: Found NY style Pizza in Vegas. But, how to make dough without NYC water/flour?

N.Y. style pizza is made with the highest protein flour commercially available because it provides the desired finished crust characteristics, namely chew and foldability which allows the slice to be folded for consumption on the run. Soft water is easily addressed by the addition of 0.25% calcium sulfate to the dough, or you can "bite the bullet" and just reduce the dough absorption slightly to compensate for the slightly softer dough resulting from the use of soft water as compared to hard water. This has been discussed here at great length and I've also written a published article on the topic.

Tom Lehmann/The Dough Doctor

1690

/ Re: Dough testing and procedure from Austria ;)

Roberto;

Did the shape of the pizza affect the way it tasted? If not, don't sweat it! Free form pizzas are a popular item.

Your finished pizza looks just fine, and I bet it tastes as good as it looks too. :drool:

Tom Lehmann/The Dough Doctor

1691

/ Re: Marsal Oven

Have used them for many years, great performance, great price, just don't buy into the claims that you don't need to rotate/spin the pizzas during baking. Not much not to like about the ovens.

Tom Lehmann/The Dough Doctor

1692

/ Re: Dough testing and procedure from Austria ;)

Your dough ball looks great, I might suggest putting just a "wipe" of oil in the bowl before placing the dough ball in it, this will allow for an easier release (removal) of the dough from the bowl, in some cases you might be able to just invert the bowl for a few seconds or give it a tap on the counter top and the dough ball will fall out on its own giving you a nice symmetrical dough piece to open.

Tom Lehmann/The Dough Doctor

1693

/ Re: How should the dough after bulk look like ?

That is strictly a personal preference. For me, my personal preference is for cold fermented dough. My entire 50+ year career in dough research has centered around bread and pizza (with cookies, pies, pastries, cakes, etc. tossed in for good measure) so I'm very familiar with the fermentation flavor in bread (room temperature/ambient) fermentation (which is the way most commercial breads here are made) so when I eat pizza I like to have a different flavor in the crust which is why I lean towards CF (cold fermentation) doughs. Over the years I've heard many people say their crust tastes "breadly" which comes from the fact that most all Americans have consumed a substantial amount of commercially made bread in their lifetimes so they are, knowingly or unknowingly, familiar with that type of fermentation flavor and are looking for something different in their pizza crusts. Additionally, CF doughs are a lot easier to manage over an extended period of time as evidenced by the fact that most U.S. major pizza chains and pizzerias use some type of CF dough management procedure. In the end though it all boils down to personal preference, what you like and what works best for you is what you will want to use.

Tom Lehmann/The Dough Doctor

1694

/ Re: What is my flour doing to my starter and IDY, and why?

Their "Bread Flour" comes in at 12 to 12.2% protein content. Their commercial equivalents would be any of the following:

Harvest King

Ben Hur

Rex Royal (slightly higher at 12.4%)

Washburn's (slightly higher at 12.4%)

Full Strength and Superlative would also be close at 12.6% protein.

Tom Lehmann/The Dough Doctor

1695

[/ Re: What is my flour doing to my starter and IDY, and why?](#)

What dough absorption are you using and how does the dough feel as compared to using one of the other flours that is working better for you? There is a possibility that the flour has oxidized which would cause it to perform normally at first but become tight and bucky during fermentation, tight/bucky doughs resist expansion and typically produce lower than expected volume bread with a tight/dense crumb structure.

Can you provide any pictures of product made with the flour?

Tom Lehmann/The Dough Doctor

1696

[/ Re: What is my flour doing to my starter and IDY, and why?](#)

I can't answer your question without knowing how you were making the SF starter and I'm not sure I understand your question regarding the IDY.

Tom Lehmann/The Dough Doctor

1697

[/ Re: How should the dough after bulk look like ?](#)

Roberto;

A bulk fermented dough will look gassy if fermented for an extended period of time, that's what fermentation does.

Why bulk ferment? It's just another method of dough management used in making pizza dough, plus it provides a slightly different crust flavor than the cold fermented dough management procedure. As compared to a cold fermented dough it can be more difficult to manage as the dough can be exposed to a greater range of variables including finished dough temperature as well as ambient temperature. As for mixing the dough, the "window pane" test is for making bread, not pizza, so all you need to do is to mix/knead the dough JUST until it comes smooth, more mixing than that is not needed or desirable unless you wish to have a bread like crumb structure in the finished crust.

You say you leave the dough balls come up to room temperature, what is room temperature? The fact is that 18C is roughly 64F which is already about the ideal temperature for opening the dough into skins. (ideal temperature range for opening dough balls into skins is 50 to 60F/9.9 to 15.5C).

Tom Lehmann/The Dough Doctor

1698

[/ Re: Cracker Crust Rise](#)

Kelly;

First, the thermal death point for yeast is 140F so 170F is definitely out of the question. The purpose of the fermentation time (9-hours) is to allow for hydration of the flour resulting in a cohesive dough. Yes, the dough is very tough and difficult to

roll out but that comes with the territory of making a cracker type crust. Additionally, it is the effect of the rolling process that brings the dough together and further helps to make it cohesive, you really don't need a cutter pan, you can roll the dough out and drape it over a screen of desired diameter and cut the excess off using a DULL table knife or bench scraper, then transfer the dough to another baking platform or a baking stone/steel. The one change I would suggest making to the dough formula is to increase the salt level to 2% for improved crust flavor.

Tom Lehmann/The Dough Doctor

1699

[/ Re: Mixing Flours](#)

1) Bought Caputo and didn't like it and trying to use it up by blending with another flour.

2) Trying to achieve a certain protein level and can't buy that flour or don't have it on hand.

I can't come up with another good excuse for blending flours. My approach has always been to find an appropriate flour for the task at hand and work with a single flour whenever possible. Blending the Caputo kinda defeats the reason why it was purchased in the first place, which might take us back to #1.

Tom Lehmann/The Dough Doctor

1700

[/ Re: Types of fire/heat?](#)

Higher absorption doughs tend to experience better bake-out during the baking process which is also why they also tend to give the crispiest pizzas. Lower absorption doughs resist oven spring and are more dense so they do not bake-out as well which results in a potentially less crispy and softer crust feel which is usually somewhat more chewy too.

Tom Lehmann/The Dough Doctor

1701

[/ Re: Introduction - Potential Owner](#)

This may seem silly, but my first question is: Do any of you have any experience operating a pizzeria?

Tom Lehmann/The Dough Doctor

1702

[/ Re: Immediate balling vs bulk](#)

With 15+ pounds of dough weight you can achieve a true bulk fermentation of the dough as it is large enough to not be influenced by the surrounding air temperature and it will also generate and retain the heat being generated by the yeast as it ferments (heat of metabolism). The key step to effectively managing a bulk dough like this is in consistently achieving the targeted finished dough

temperature, even missing it by a few degrees can/will impact the fermentation rate of the dough.

Tom Lehmann/The Dough Doctor

1703

/ [Re: Dough Doh!](#)

And because you are making a suspension (not dissolving the yeast), you will want to keep agitating the suspension (stirring or otherwise) right up to the point where you are ready to weigh out the amount of the suspension that you want to use.

Tom Lehmann/The Dough Doctor

1704

/ [Re: Found NY style Pizza in Vegas. But, how to make dough without NYC water/flour?](#)

While on the island of St. Thomas I came across a pizzeria called Pizza Amore they make a great N.Y. style pizza. Water source: Since the island has no fresh water all of their potable water is processed from rain water (collected locally of course).

The flour being used was General Mills All Trumps (non-bromated).

I've written articles on the topic and I'm on record as saying that there is nothing special about New York City water when it comes to making a N.Y. style pizza.

There is nothing magical about All Trumps flour either (bromated or non-bromated), as just about any quality high protein (13.8 or 14.2%) wheat flour will work just fine.

This is not to say that water doesn't affect the quality of a pizza dough and resulting crust (indirectly) it can and does, just read up on discussions on hard and soft water to learn more. Sulfur water is also deemed to be potable we will want to exclude that but just about anything else will work fine.

Tom Lehmann/The Dough Doctor

1705

/ [Re: Best cookie I've eaten](#)

Speaking just for myself, I've noticed that there is a decided difference between a really, really really good cookie and a really, really, really bad cookie: It takes me just a little longer to eat all of the really, really, really bad cookies. :-D :-D :-D

Tom Lehmann/The Dough Doctor

1706

/ [Re: Thank You Tom](#)

And you didn't invite me to share that great looking pizza with you :'(

You're off to a great start! :chef:

Tom Lehmann/The Dough Doctor

1707

/ [Re: dough with 80% starter](#)

I would also suggest getting some litmus paper strips to monitor the pH as you go through the process.

Tom Lehmann/The Dough Doctor

1708

[/ Re: How long do you let your dough rest?](#)

I allow my doughs to cold ferment for a minimum of 24-hours but I like to leave it ferment for 48-hours whenever possible. Occasionally I'll leave it go for 72 to 96-hours. The reason for the long fermentation time is primarily to develop flavor in the finished crust. If you will read through some of the archived posts here you will find a lot of good discussion on fermentation time. When fermenting the dough you have options of cold fermentation or room temperature/ambient fermentation. Doughs that are managed at ambient temperature will provide a crust flavor that is slightly different from one that has been cold fermented, ambient temperature fermented doughs may also be more difficult to manage, especially for a beginner, as they are more temperature sensitive and can be more inconsistent in performance if not managed properly.

Tom Lehmann/The Dough Doctor

1709

[/ Re: Salt/Yeast direct contact](#)

Salt and sugar seldom ever do good things for a starter, ditto for yeast in a concentrated medium. Could you add the yeast and/or starter to the water with the salt/sugar? Sure you can, but Murphy's Law dictates that one day you will get distracted and leave them together in the bowl too long and impair the fermenting properties of the yeast or starter which will leave you scratching your head for a day or more trying to figure out what went wrong. Make it a good habit to keep the starter/yeast and the salt/sugar separated and avoid disappointment. Think of it like looking both ways before crossing a road, 99% of the time you can get away without doing it but then there is that one time when you should have.

I suggested a spiral mixer only because they are about as "bullet proof"/trouble free as a mixer can get. Don't just take my word for it, poll others here to see what they think about spiral dough mixers.

No need to slurry a starter, it will be worked in just fine by the normal mixing action of any mechanical mixer. When I make a starter it's pretty loose to begin with (actually it's pour able), but even a plastic starter, like a sponge will be incorporated just fine.

Tom Lehmann/The Dough Doctor

1710

[/ Re: Immediate balling vs bulk](#)

It sure wasn't me you were listening to. I always advocate getting the ENTIRE dough scaled and balled WITHIN 20 minutes of stopping the mixer. The reason for this is to get the dough balled and in the cooler before the dough begins to ferment and change in density (become less dense) which effectively makes the dough more difficult to efficiently cool for optimum shelf life properties. Before I can answer

any question on bulk fermentation I need to know the size/weight of the dough that is being bulk fermented. If the dough weight is less than about 1.5-pounds you're kidding yourself with bulk fermentation as you are just fermenting a slightly larger dough ball, if you are talking about bulk fermenting 5-pounds of dough or more, that's a different story, not you can bulk ferment.

So, what's your total dough weight that you're bulk fermenting?

As for removing the dough from the fridge prior to use, you only want to leave it out long enough to reach 50 to 60F internal temperature which is usually around 2-hours, or so.

With a 70% absorption dough the autolyse is probably going to reduce the mixing time a little and possibly give you a little drier dough to work with during scaling and balling.

Tom Lehmann/The Dough Doctor

1711

[**/ Re: Diastatic malt vs sugar in home oven**](#)

The crust color developed through the addition of malt tends to be of a slightly redder hue than that developed through the addition of sucrose.

Most people would not see the difference.

Tom Lehmann/The Dough Doctor

1712

[**/ Re: AP vs. Bread Flour for Sicilian-style pies**](#)

One of the biggest problems with any AP flour is that there is no real standard for it ("all purpose" just what is that flour intended for?) it can be milled from soft wheat varieties (think cake and pastry flours) or it can be milled from hard wheat varieties like bread flours are. This can pose a problem when changing brands of AP flour too. I've seen protein levels for AP flour from a low of something in the 9% range to as high as 11.5%, this is why some swear by AP flour while others swear at AP flours. It is also why I don't ever recommend using an AP flour. Bread flours, on the other hand, are designed for baking bread and bread like products (pizza included) and as such they are much better defined as to the type of wheat they are milled from as well as the protein content falling within a usable range for making pizza.

Tom Lehmann/The Dough Doctor

1713

[**/ Re: Salt/Yeast direct contact**](#)

When hand mixing we found it best to put the salt (and sugar if used) into the bulk of the dough water then suspend the yeast (regardless of the type used) in a small portion of 95 to 100F water for ADY (ADY will need a 10-minute activation period) or IDY (IDY requires no activation period), but you can just dip a small amount of the dough water out of the bowl (before adding the salt/sugar) to suspend the CY in as it is not temperature sensitive, add the suspended yeast to the dough water containing the salt/sugar and immediately add flour and begin mixing.

When mixing by machine put the dough water in the bowl and add the salt/sugar,

then add all of the flour and add the CY or IDY on top of the flour and begin mixing. If using ADY you will need to suspend it in a small portion of 95 to 100F water to hydrate/activate it, then after 10-minutes activation add it on top of the flour and begin mixing.

A sourdough can be added to the dough water when hand mixing just as the yeast suspensions are added, but when machine mixing it is better to add it on top of the flour just prior to starting the mixer.

Hopefully you're considering one of the spiral dough mixers for mixing your doughs.

Tom Lehmann/The Dough Doctor

1714

[/ Re: Salt/Yeast direct contact](#)

Before answering your question I would like to know if you are machine mixing (assuming you are) and more importantly, what type of yeast are you using?

Tom Lehmann/The Dough Doctor

1715

[/ Re: New here! Opening a new place soon!](#)

We recently had quite a bit of discussion here on DELCO pizza which might be of interest to you.

Tom Lehmann/The Dough Doctor

1716

[/ Re: What am I doing wrong???.....](#)

Before I can really help you I've got to ask you to put your dough "recipe" into a dough "formula" based either in weight measures or bakers percent, that will help tremendously with the diagnostics allowing us to give you some meaningful direction, also it will go a long ways in helping you produce a more consistent product.

Tom Lehmann/The Dough Doctor

1717

[/ Re: What is your favorite pizza cutter for high traffic events?](#)

If you are planning to sell whole pizzas a rocker knife is fast and easy to use.

Tom Lehmann/The Dough Doctor

1718

[/ Re: Wondra Flour for Pizza Crust Recipe?](#)

It would get up to full operating temperature, eventually. With the elements not generating full heat potential the oven would cool when opening the door, like you never need to to that when using a deck oven! Multiple bakes were impossible

unless we waited about 15-minutes before loading the oven again as the deck was sooo ssslllooowww to recover.

What a breath of fresh air when we got the Marsal gas oven! :chef:

Tom Lehmann/The Dough Doctor

1719

/ [Re: How much oil is enough](#)

Equal parts fat and flour/100% fat = a roux, great for thickening a gravy.

Even a pie crust with 35 to 50% fat will have some water in it to form some gluten as a binder.

From a practical standpoint 15 to 25% fat will be about the maximum amount used in making pizza crusts. A number of years ago croissant pizza crusts were popular. These were made with roughly 20 to 25% fat or which 5% was incorporated into the dough with the remainder added as hard fat flakes and incorporated into the dough at the end of the mixing stage. You saw the same dough being used by Burger King in making their breakfast sandwiches.

Tom Lehmann/The Dough Doctor

1720

/ [Re: Understanding dough ball structure](#)

There are a whole lot of other things at play here which can cause flattening of the dough ball.

- 1) Some gluten development is needed to retain leavening gas but in pizza production it isn't as important as it is in bread production.
- 2) Flour strength will play a significant role in determining how well the dough ball retains shape during fermentation.
- 3) How tight the dough is rounded will impact how well the dough ball retains its shape.
- 4) The dough absorption also affects how well the dough ball retains its shape.
- 5) The amount of salt used also plays a role.
- 6) The amount of yeast used will have an impact.
- 7) The finished dough temperature will play a role.
- 8) The use of oil in the dough will also impact how the dough ball looks after fermentation.
- 9) Failure to cross-stack is a major contributor to dough ball collapse.
- 10) Improper (warm) cooler/fridge temperature.

Any one or combination of these factors can/will affect how the dough ball looks/performs after the fermentation period. It is impossible to say that any one factor has caused a dough ball to flatten or collapse without knowing the dough formulation, flour strength characteristics and dough management procedure in great detail.

Tom Lehmann/The Dough Doctor

1721

/ [Re: How much oil is enough](#)

You will need to use about 5% oil to see a significant softening effect but if you mean creating a more tender eating crust 2% is a good starting point.

Tom Lehmann/The Dough Doctor

1722

[**/ Re: Two different flours, same hydration question**](#)

Damaged starch is usually limited to something between 6 and 12% in most flours (we've discussed the impact of damaged starch when its at a high level before, very high dough absorption but the damaged starch is the first to be hydrolized so it quickly releases its water turning the dough into soup). On average, gluten forming protein (VWG) has an absorption of 2 to 2.5 times its weight. The remainder of the water that we add (which isn't absorbed primarily by the protein and damaged starch) is used to adjust the viscosity of the dough.

Tom Lehmann/The Dough Doctor

1723

[**/ Re: Time in balls vs extensibility**](#)

JPB;

It is true that increasing the dough absorption plays a part in how well the dough opens but not as much as fermentation or relaxation time.

Tom Lehmann/The Dough Doctor

1724

[**/ Re: Two different flours, same hydration question**](#)

Every flour is different and unique in it's own way, or said another way, no two flours are alike. Each and every flour will exhibit its own absorption and mixing properties, some flours exhibit sticky or slightly sticky dough characteristics which can be inherent in the flour and for all practical purposes, impossible to correct while others demonstrating the same characteristics can be addressed by changes to the dough absorption or mixing time.

Typically, a dough that is made using an autolyse (I think that's what you were referring to) will be less sticky and easier to handle than a dough made without using an autolyse.

If you are faced with a sticky dough make sure you are not adding diastatic malt in combination with a malted flour or that you are not using it in excess as too much malt will create a sticky dough condition that cannot be addressed.

Tom Lehmann/The Dough Doctor

1725

[**/ Re: Wondra Flour for Pizza Crust Recipe?**](#)

When we had an electric deck oven and it was failing it took close to 15-minutes to bake our thin crust pizzas. We replaced it with a Marsal gas deck oven and our baking times went down by approximately 50%. Additionally, there are a good number of deck ovens in use for making pizzas that are not actually designed for

making pizza, they were designed to bake bread so they will always have a steel deck and a burner BTU capacity of around 85,000 BTU. Not exactly the oven you would want to have for a high volume shop.

Tom Lehmann/The Dough Doctor

1726

[/ Re: Time in balls vs extensibility](#)

Once the dough is balled it is typically allowed to cold ferment anything from 18 to 96-hours or more, it is then removed from the fridge and allowed to warm to 50 to 60F before opening.

If you use a different dough management procedure where the dough is fermented for a period of time prior to scaling and balling you only need to allow the dough balls sufficient rest time to relax sufficiently for ease of opening.

Tom Lehmann/The Dough Doctor

1727

[/ Re: Types of fire/heat?](#)

Nick57;

It potentially could. That's how we bake pound cakes and fruit cakes in retail bakeries where we want to bake longer without overly drying out the product or developing an overly thick, heavy crust on the product. In many cases you can get the same effect by simply spraying water on the pizza or just the rim immediately before placing it in the oven.

Tom Lehmann/The The Dough Doctor

1728

[/ Re: Types of fire/heat?](#)

Good news and bad news about burning wood with a higher moisture content.

The Good News: It will potentially give a very slight increase the moisture content/humidity within the oven which can result in better heat transfer to the pizza and possibly shorten the baking time by a few seconds.

The Bad News: High moisture content wood does not burn as hot as dry wood thus effectively negating the good news.

Note: DO NOT confuse this with adding low pressure steam to an oven, in that case you're flooding the oven with steam which condenses on the product thus cooling it and delaying setting of the crust structure and enabling the product to be baked longer.

Tom Lehmann/The Dough Doctor

1729

[/ Re: Flour suggestions for NY Thin Style dough](#)

You're on the right track, however, I might suggest that you begin your experimenting using what would be termed a strong bread type flour (12.2 to

12.8% average protein content). Make your doughs sufficiently large so as to get at least three dough balls from each dough, make a pizza from each dough ball at 48, 72 and 96-hour intervals. Always make the same pizza and photograph your results as well as entering your comments into a log book.

Have fun doing it. We look forward to hearing about your results.

Tom Lehmann/The Dough Doctor

1730

/ [Re: Dough problem after bake](#)

George;

That certainly might be, there is a reason why the manufacturers put an expiration date on their products, not that the product will fail after that date but they know, through their own testing, that they cannot ensure satisfactory product performance after that date. To further cloud the issue it the yeast packets, at any time since they were packaged, were subjected to less than ideal storage conditions the shelf life would be compromised so the yeast performance would be even poorer than expected after the expiration date.

Tom Lehmann/The Dough Doctor

1731

/ [Re: How to get multiple rises with yeast ratio](#)

1) Define a "rise". I know what a "full" rise is, by definition it is when the dough rises and then begins to recede on its own, this is also typically considered to be about 80% of the full fermentation time the flour can handle.

2) Finished dough temperature is what drives the rate of fermentation, the warmer the dough (within reason) the faster it will ferment.

3) Yeast needs some nutrient to sustain vigorous fermentation, this can be in the form of malted flour or added sugar.

4) Flour strength also plays a significant part in fermentation, the stronger the flour or the greater its tolerance to fermentation the greater the time needed to reach the first "full" rise as described above.

Dough absorption and water carrying capacity of the flour can impact the rate of fermentation too and it will also significantly impact the way the dough looks at any stage of fermentation. With high dough absorption the dough can look to be well fermented but in reality still be under fermented.

Tom Lehmann/The Dough Doctor

1732

/ [Re: Keeping pizza hot and not soggy when transporting to customers](#)

Delivery no, customer pick-up yes. It took a bit for customers to get used to the concept but they're on board now. No customer complaints that the pizza was delivered later than promised, no complaints that the pizza was stuck to the top of the box, seldom ever a complaint, and no headaches associated with delivery. Like Walter said, if you really want a great pizza, come in and enjoy one!

Tom Lehmann/The Dough Doctor

1733

[**/ Re: Types of fire/heat?**](#)

Dry wood and gas bake pretty similarly at the same temperatures, both release moisture into the oven as a result of combustion (assuming a direct fired oven which most home ovens are), electric ovens on the other hand create a very dry heat which conducts heat rather poorly so products baked in an electric oven typically require a longer baking time which can be as much as 20% longer than that required in a wood or gas fired oven baking at the same temperature. With wood it is also possible to have a variable in the amount of moisture in the wood being burned which can affect the way products bake. With all of this said, I've never heard of anyone adjusting the dough absorption due to the fuel being burned in the oven. However, as a rule, most wood fired ovens are operated at a higher temperature than gas ovens which allows the operator to increase the dough absorption to achieve specific finished crust characteristics not otherwise achievable when baking at lower temperatures. In this case I'm referencing baking at temperatures in the 800 to 1,000F range.

Tom Lehmann/The Dough Doctor

1734

[**/ Re: Dough problem after bake**](#)

George;

Your salt level is really very low at just over 1% which can result in an inconsistent fermentation rate. The next time you bake you might want to increase the salt level to 25 to 30-grams which is a more realistic level for pizza dough and as a side benefit it will improve the flavor of the baked crust. I'm guessing right now your crust has a slightly "starchy" like taste, the increased salt level will effectively address this. Additionally, how long do you pre-heat your oven prior to baking?

Tom Lehmann/The Dough Doctor

1735

[**/ Re: Help with pizza sticking to pan**](#)

Just use clarified butter/ghee as regular butter will burn.

Tom Lehmann/The Dough Doctor

1736

[**/ Re: Newbie Questions regarding Dough Recipe**](#)

If you are making a N.Y style pizza you really need to be using a high protein content flour, something in the 12.8% to 14.2% protein content will work best for this application. In New York All Trumps flour is very popular, it has a protein content of 14.2%. An easy to find flour is Pillsbury Bread Flour aka Pillsbury Breadmaker Flour which has a protein content of about 12.2% and is available in most supermarkets.

Tom Lehmann/The Dough Doctor

1737

[/ Re: Prebaking a shell and preventing burnt crust](#)

Par-bake crusts can easily be stored for up to a total of 4-days at room temperature. Not knowing the time of the year or the relative humidity of the room in which the crusts are being stored I suggest wrapping the cooled crusts in stretch wrap (not tightly) to prevent further moisture loss. Don't worry about staling, that is not an issue with pizza crusts but mold is, this is what we recommend not storing for more than 4-days since mold will usually begin colonizing on the 5th day.

If you go back in the archives here you will find more posts on par-baking pizza crusts.

Tom Lehmann/The Dough Doctor

1738

[/ Re: Help with pizza sticking to pan](#)

One thing that will usually help in cases like this is to blend at least 25% Crisco or some other plastic shortening into the oil. For example, if you make a blend of 3-ounces of oil and 1-ounce of Crisco and heat in the microwave to melt the Crisco into the oil then use this blend for your pan oil. This is a trick I learned when I was working in a bakery to prevent bread loaves from sticking in the pan.

Also, I know not what type of oil you are using but be aware that sometimes a changer in the type of oil being used will also help. Peanut oil is what has been used commercially for a good many years.

Tom Lehmann/The Dough Doctor

1739

[/ Re: Help with recipe conversion from standard measurement to percentages](#)

We have discussed this many time here, maybe Peter can dive back into the archived and reference some of the posts for you.

When changing a "recipe" based on volumetric portions into bakers percent it is recommended that you portion out the ingredients three times and weigh the sum on each ingredient then divide the sum by three which will give you the average ingredient weight. With all of the average ingredient weights written down we can begin changing your recipe into a dough formula based on bakers percent. Assign 100% to the flour weight as it is ALWAYS 100% regardless of the weight. Now, using your calculator, divide each ingredient weight by the weight of the flour and multiply by 100, this will give you the bakers percent for each ingredient.

Example:

Flour weight: 650-grams.

Ingredient weight: 17-grams.

Divide 17 by 650 X 100 = 2.61%

To use bakers percent:

Decide how much flour you want to use.

Tip: If you want to double the dough size just double the amount of flour. If your dough makes 3 dough balls and you want to increase the dough size to make 4

dough balls just use 1/3 more flour weight.

To calculate ingredient weights:

Put 100% next to your new flour weight, remember flour is ALWAYS 100%.

Using your calculator, enter the flour weight then press X and enter the percent of the ingredient you want the weight for then press % and read the weight of the ingredient in the display.

Example:

Your new flour weight is 975-grams.

The ingredient percent is 2.61%

975 X 2.61 (press the "%" key) and read the ingredient weight in the display.

If you are "math challenged" there are several spread sheets out there that I'm sure anyone here can direct you to that will do all the work for you, all you will need to do is plug in the flour weight, can't get much easier than that.

Tom Lehmann/The Dough Doctor

1740

[/ Re: 73% hydration dough](#)

Amen to that!

A little dusting flour or oil on your hands doesn't hurt a thing, adding more flour is a totally different thing which is what you were probably told not to do.

Tom Lehmann/The Dough Doctor

1741

[/ Re: 73% hydration dough](#)

If it was collapsing when touched it was most likely over proofed.

What was the finished dough temperature?

How much of what kind of yeast was used?

Did you leave the container open for a couple of hours after you placed it in the fridge?

A little dusting flour or oil on your hands will go a long ways in helping you handle a soft/sticky dough.

Tom Lehmann/The Dough Doctor

1742

[/ Re: King Arthur Flour's "Pizza Flour Blend": problems](#)

While it was difficult to read the bag label it does not appear to indicate that the flour has been malted. If your dough formulation does not already contain at least 2% sugar you might try it again with at least 2% sugar included in your dough formulation. The cake like texture is a direct result of the baking powder contained in the flour "cocktail" as I like to call it. To improve the crumb structure increase the amount of yeast you're using. You are including yeast in the dough formulation as opposed to just adding water to the "cocktail" , aren't you? If you are not doing do what you are making is reminiscent of the old Chef Boy Ardee pizza kit, but even that has some sugar in the dough formula but in this case since there is no

yeast the sugar HAS TO BE dextrose/corn sugar.
Tom Lehmann/The Dough Doctor

1743

/ [Re: Dissolving Instant Yeast](#)

NO.
Tom Lehmann/The Dough Doctor

1744

/ [Re: Is "Savory" really an ingredient?](#)

Rather than going into a detailed explanation, if you Google it you will find a definition of the spice "savory".
Tom Lehmann/The Dough Doctor

1745

/ [Re: Dissolving Instant Yeast](#)

In a dough the water is pretty well taken up already by the flour and other ingredients, the 5-minutes mixing allows for a slow/controlled rate of yeast hydration while also at the same time ensuring thorough distribution of the yeast throughout the dough. When you put the IDY into 95F water there is no other competition for the water aside from the yeast so it hydrates much faster but as I've said numerous times before, this is also a problem in that you will get some glutathione being leached out of the yeast cells, yes, even with 95F water but the damage will be minimized.
Tom Lehmann/The Dough Doctor

1746

/ [Re: Different yeast](#)

I'd say that was a fair statement. Most pizza makers, both home and pizzeria, use IDY for its ease of use, greater consistency and long shelf life.
Tom Lehmann/The Dough Doctor

1747

/ [Re: Different yeast](#)

That's not the question you asked, but you your "wondering" question is included in my response as I have indicated how they are used/added to the dough. Kinda reminds me of a Little Suzie an Joke. Little Suzie comes home from school one day and asks her mother "where did I come from?" Her mother proceeds to explain the "facts of life" to her in full detail, then she asks Suzie why she asked about it, little Suzie responds "Well, my friend Johnny said he was from Pennsylvania and I was just wondering where I came from" :-D
Tom Lehmann/The Dough Doctor

/ Re: Different yeast

Compressed Yeast: C.Y./fresh yeast/wet yeast/brick yeast/block yeast.

About 70% moisture content.

Must be stored under constant refrigeration, should not be frozen in a static freezer.

Highly perishable.

Shelf life about 3-weeks.

Can be suspended in the dough water (any reasonable temperature) but usually just crumbled and added on top of the flour when machine mixing.

Active Dry Yeast: ADY/dry yeast.

About 8% moisture content.

Unopened shelf life of 6 to 12-months.

Opened shelf life of about 3-months.

Must be suspended and activated in 100 to 105F water prior to use.

Once activated it can be added directly to any reasonable temperature dough water.

Instant Dry Yeast: IDY/instant yeast.

About 3% moisture content.

Unopened shelf life 12 to 24-months.

Opened shelf life: 3 to 6-months.

Is usually added dry to the flour when machine mixing but should be suspended in 95F water when mixing doughs by hand or employing machine mixing times of less than 5-minutes.

Once the IDY is suspended in 95F water it can safely be added to the dough water at any reasonable temperature.

IDY when suspended in 95F water is to allow for hydration of the yeast, it is not to activate it as is done with ADY.

NOTE: The word "instant" in this case refers to the hydrating properties of the yeast, not the activation of the yeast.

IDY is extremely sensitive to the temperature of the water it is suspended in, even a 5F variance can/will impact yeast performance to some extent.

IDY can be used in the making of "goodie bags" whereas ADY cannot.

When an autolyse is used in making the dough the IDY can be sprinkled on top of the autolysed dough and machine mixed. Note that a minimum 5-minute mixing time is necessary.

Conversions:

CY: 16-ounces

ADY: 8-ounces

IDY: 6-ounces

Tom Lehmann/The Dough Doctor

Maybe you have a very thin white sauce?
Tom Lehmann/The Dough Doctor

1750

[/ Re: Crispy crust ?](#)

Without know which flour you are using I can only say:
Use a dough absorption of about 60%.
Cold ferment the dough for 12 to 24-hours.
Make sure you have at least 2% sugar in the dough formula or 0.25% of a 20L diastatic malt.
Tom Lehmann/The Dough Doctor

1751

[/ Re: King Arthur AP recall](#)

Welcome to the wonderful world of wheat flour. :)
Tom Lehmann/The Dough Doctor

1752

[/ Re: Dissolving Instant Yeast](#)

When mixing the dough by hand both types of yeast will perform very well but I tend to give the nod to the use of ADY in this application since it is designed specifically to be suspended and activated prior to use while the IDY could conceivably suffer some damage by being suspended in the water if the temperature isn't correct (it is more sensitive to the temperature of the water in which it is suspended than ADY), this is why I might give the nod to ADY over IDY in this specific application, on the other hand the IDY has better shelf life properties so if you are planning to open a large package and use from it over a period of time the IDY might provide more consistent performance over the long haul, six of one, half a dozen of the other, take your pick.
Tom Lehmann/The Dough Doctor

1753

[/ Re: Desired Dough Temp & Fermentation Temp](#)

If you are asking if the finished dough temperature influences or is influenced by the temperature at which the dough will be fermented, the answer is yes, but regardless of at what temperature the dough will be fermented, 76 to 78F is still a good target finished dough temperature but do keep in mind that when you will be fermenting at elevated temperatures such as room temperature fermentation consistency in achieving the targeted finished dough temperature is more important than the actual finished dough temperature itself. Where long dough fermentation times are employed it is the common practice to develop a targeted finished dough temperature and then adjust the yeast level to accommodate the fermentation time, when doing this the temperature of the dough must be a constant so achieving the targeted temperature is critical.

Tom Lehmann/The Dough Doctor

1754

[/ Re: Crispy crust ?](#)

which "00" flour are you using?

Tom Lehmann/The Dough Doctor

1755

[/ Re: Caputo 00 Pizzeria vs Americana](#)

Another thing to consider is the correct, and many time "legal" dosage for some of the more commonly encountered additive ingredients such as potassium bromate, azodicarbonamide, ascorbic acid, and L-cysteine hydrochloride which is measured in ppm (parts per million) based on the flour weight.

Tom Lehmann/The Dough Doctor

1756

[/ Re: Dissolving Instant Yeast](#)

Either ADY or IDY will work equally as well in situations such as you have described, however, since ADY is designed to be pre-activated I might lean a little more towards using ADY for applications where the yeast must be suspended and activated prior to use. Why ADY over IDY in this specific application? Because, overall, IDY tends to be a little temperamental with regard to the temperature of the water it's suspended in so there exists a potential for damaging the yeast if one gets careless with the temperature of the water the yeast is put into. ADY while still responsive to water temperature is not as temperamental. In reality I'm probably "cutting hairs" since as I stated in another post recently any difference in yeast performance is going to be hard, if not impossible, to see under home baking conditions. On the other hand, if defense of IDY, it has better shelf life properties than ADY so if you do not use an entire package of ADY within a given period of time the IDY will most likely prove to provide more consistent results over a longer period of time. Like the grocer says, "six of one, half a dozen of the other", take your pick.

Tom Lehmann/The Dough Doctor

1757

[/ Re: Blown dough?](#)

Walk-in coolers have significant in and out traffic during the hours the store is open and few, if any are actually operating at the set temperature, most are doing good to be operating at 50F truth be known. This would be especially so if the dough is placed anywhere near the door and the door opening isn't equipped with plastic strip curtains in addition to the regular door. We always made our dough at the end of the day when there was minimal traffic in and out of the cooler, and then there was no traffic during the night when the dough was cooling down.

Tom Lehmann/The Dough Doctor

1758

[/ Re: Blown dough?](#)

Good call Peter, I totally agree. Anything over 24-hours is a bit of a stretch for a dough made with 72% absorption to begin with.

Tom Lehmann/The Dough Doctor

1759

[/ Re: Caputo 00 Pizzeria vs Americana](#)

Danny;

This very topic was just discussed the other day. 0.25% of 20L diastatic malt powder is the answer you're looking for.

Tom Lehmann/The Dough Doctor

1760

[/ Re: Blown dough?](#)

Your IDY is high at 0.55%. I suggest reducing it to 0.375%. One question, what is the temperature of your walk-in cooler, and what time of the day did you make the dough?

Tom Lehmann/The Dough Doctor

1761

[/ Re: Caputo flour rescue](#)

I was also thinking not more than 12-hours at room temperature or if you want to go to 24-hours use a cold fermentation procedure: Mix; scale; ball; cold ferment 24-hours; temper AT room temperature for 90-minutes, open dough balls into skins for immediate use.

Tom Lehmann/The Dough Doctor

1762

[/ Re: 80% hydration dough](#)

I agree with Rolls that for most home ovens with limited temperature capability a dough absorption in the 55 to 65% range works best. My personal "go to" absorption for most of my home pizza making is 62% absorption unless I'm trying to make something different/special like ciabatta, and even then it's only in the 70 to 75% range. You also learned a valuable lesson too, colder doughs are easier to open/handle than room temperature/ambient temperature doughs, this is why we seldom allow a refrigerated dough to warm fully back to room temperature for opening, instead we only allow the dough to warm to something in the 50 to 60F range (internal dough ball temperature) before opening it into a skin.

Tom Lehmann/The Dough Doctor

1763

/ Re: Dissolving Instant Yeast

It's the temperature of the water that causes the fissures to close up so the faster you can wet the IDY the better off you'll be in the long run when the IDY is exposed to so much water all at one time.

Tom Lehmann/The Dough Doctor

1764

/ Re: Purposely undercooking crust

Adding fat to the dough always helps to make for a softer, more tender eating crust. If you want to see first hand what fat will do just buy two packages of tortillas, one fat free the other one with normal amount of fat, you'll be surprised. Another thing to do is to add lecithin to the dough, lecithin is an emulsifier which will allow the fat to bind to the water for increased water retention.

Tom Lehmann/The Dough Doctor

1765

/ Re: Dissolving Instant Yeast

Craig;

You thinking is spot-on, for those applications as well as those where the dough will not be machine mixed for at least 5-minutes suspending the IDY in a small amount of 95 to 100F water is the preferred way to go. You won't need to wait for it to activate, just add it to the water and stir or whisk until it is completely suspended and it's ready to add directly to the colder dough water.

Tom Lehmann/The Dough Doctor

1766

/ Re: the dough underneath the sauce was still raw, what could it be ?

I can't tell anything from your pictures as the slice is shown as cut from the top down. In order to tell if we are looking at a real gum line or just a false gum line I need to ask you to show a picture of the edge of the slice when cut from the bottom to the top. To do this just invert the slice and carefully cut through the crust using a VERY SHARP serrated knife or a razor knife. By cutting it in this manner you will not drag sauce and cheese down into the crumb thus obscuring vision of the important crumb just under the sauce, with that I should be able to determine just what we have going on there.

Tom Lehmann/The Dough Doctor

1767

/ Re: Sifting

Peter;

Sifting doesn't impact the total flour absorption, it can, and I say that cautiously, allow the flour to hydrate more quickly as there can be a greater surface area exposed to the water, but the amount of water actually absorbed (total absorption) is not affected. Lumpy/clumpy flour is a result of exposure to high humidity or Indian Meal Moth infestation (their webbs result in clumping of the flour), both of which are good signs that the flour should probably be discarded. While flour may clump as a result of packaging, the clumps readily break-up so they really don't create a problem, even when mixing totally by hand. While nobody wants to talk about it the main reason for sifting flour goes back to when baking at home was not just a hobby, but part of everyday life, the flour was stored in a metal lined deep drawer, or metal lined box and it was too valuable to through out (for any reason) as a result the flour became infested over time and sifting made it all good again (my, how times have changed). I was raised on home made bread, the store bought bread, which was bought when we went into town every two weeks, was a treat for us kids (because it was soft) but it was an act of kindness for the women who got a reprieve from needing to bake bread for a couple of days, did I mention that our kitchen cook stove was dual fuel? Yep, dual fuel, corn cobs or wood. Mostly corn cobs as we were a small dairy farm. Now think of this, an Illinois farm, summer, hot and humid, no air conditioning and no fans and baking bread with that cook stove three times a week (need I say more?) The house was heated by dual fuel too, either corn cobs or coal (both burned long and hot, but in the winter it was always coal at night as the huge pieces that we burned lasted through the night). The farm is now a subdivision and those who live there don't have a clue about what the land once was. Sorry to digress.

Tom Lehmann/The Dough Doctor

1768

/ [**Re: Sifting**](#)

As it pertains to making yeast leavened doughs, it will remove insects and larvae (worms) from the flour, it will remove any non-flour material (paper, string, etc.), it will give you a little exercise (could be a good thing) but aside from that, no, sifting flour today serves no real useful purpose.

Tom Lehmann/The Dough Doctor

1769

/ [**Re: Please describe the various types of thin crust pizza**](#)

In Chicago, Ceresota brand flour is a very popular flour to use for thin crust pizzas, it comes in at around 11.8% protein content.

Tom Lehmann/The Dough Doctor

1770

/ [**Re: Dissolving Instant Yeast**](#)

The "I" in IDY (instant dry yeast) stands for instant hydrating (it hydrates much faster than ADY (active dry yeast), this is why the manufacturers recommend that it be added to the flour, not to the water when making a dough. The flour will compete for the water and allow for a more controlled rate of water absorption by

the IDY, if the IDY is placed into an environment where there is an abundance of water the yeast will absorb water faster than the fissures in the particles can seal closed which allows for a flushing effect upon the yeast cells as water freely enters and leaves the cells, this flushing effect removes glutathione (the amino acid contained within the yeast cell) which severely impairs the ability of the yeast to ferment as it should. This is why if you read the direction on a 1# bag of IDY it clearly states to mix the IDY with the flour. We did studies on this many years ago at AIB and found that yeast performance became quite variable when the IDY was suspended in 60F water (average dough water temperature). We didn't do tests on water colder than that but I'll put money on the table betting that the IDY won't fare any better (probably worse) since the colder water slows the sealing of the fissures. We did look at suspending IDY in warm water and found that 95F water was the best water temperature for suspending the IDY in. It is interesting to note that when the water temperature was at 90F we found a 5% loss of gassing power from the same IDY. At 100F the gassing power was essentially the same as when the IDY was suspended in 95F water so for this reason we (and I believe the manufacturers do too) that when necessary, the IDY be suspended in 95 to 100F water.

OK, I understand that this means little to making pizza dough at home where the standard deviation is measured in light years and a 5, 10 or 15% loss of yeast gassing power will most likely go unnoticed, even a slightly softer, more extensible dough (remember that glutathione is a reducing agent, think "dead yeast") will most likely go unnoticed, so take it as you may, the IDY is still being damaged, to what extent is a great unknown and as I used to tell my students "Consistency is the most important ingredient in making pizza or any other product", without it, what do you have?

Tom Lehmann/The Dough Doctor

1771

/ Re: why after baking, the pizza dough is hard as rock? what mistakes am i doing?

With your addition of more flour during the dough mixing (this is not recommended) it is impossible to determine just what is happening with your dough but I have a very strong suspicion that the dough "recipe" is all out of balance, because of this I'm suggesting that you start over again but this time following a known dough "recipe". After you have mastered the "recipe" we'll get you started on working with a dough "formula" which is based on ingredient weights rather than inaccurate volumetric portions. To see a dough "recipe" for home made pizza please go to the Pizza Marketing Quarterly web site at [<www.pmq.com>](http://www.pmq.com) and click on the RECIPE BANK option, once there use "home made pizza dough" for your search and you will find my home made dough recipe listed. We have used this "recipe" for many years and it works well for making both thin and thick crust pizzas. As a side note, I think you will find my dough "recipe" much easier to put together than what you have been working with.

Tom Lehmann/The Dough Doctor

1772

/ Re: Please describe the various types of thin crust pizza

Danny;

I sounds like a New York style crust is what you are looking for. I would suggest using a lower protein flour, possibly something in the 12% protein content range (Pillsbury Bread Flour) to reduce the chewiness to what you are looking for.
Tom Lehmann/The Dough Doctor

1773

/ [Re: Mack and Manco dough](#)

From the looks of the pizza I'm guessing that it might have been baked in a very hot oven. This would allow for a short bake time resulting in reduced color to the top of the pizza while still providing a darker bottom crust color. Short baking times are notorious for giving pizzas with a soft eating characteristic and little to no crispiness in as little as a minute after baking.

Tom Lehmann/The Dough Doctor

1774

/ [Re: adding diastatic malt powder to my flour to match all trumps malted](#)

Like I said, we used 0.25% 20L malt powder to replicate typical malting done by the flour miller, 0.249 is close enough, I'm not going to argue over 0.001%

Tom Lehmann/The Dough Doctor

1775

/ [Re: Dissolving Instant Yeast](#)

QJ is spot-on, you actually run the risk of damaging the IDY by putting it into suspension prior to adding it to your dough. Just add it dry right on top of the flour and it'll be just fine. That's how it is designed to be added. There are only two times when the IDY really needs to be suspended in 95F water prior to addition, one is when mixing the dough entirely by hand and the other is when mixing the dough by machine but the total mixing time will be less than a total of 5-minutes.

Tom Lehmann/The Dough Doctor

1776

/ [Re: Hydration Test](#)

Unless you are approaching the absorption carrying capacity of the flour, increasing the dough absorption will contribute to a firmer, more crispy crust, but as you aptly noted, it can also become more difficult to handle.

Tom Lehmann/The Dough Doctor

1777

/ [Re: adding diastatic malt powder to my flour to match all trumps malted](#)

Foreplease;

There is no way of telling just how much malt has been added to the flour, even the Falling Number won't help since it only provides an indication of amount of total

diastatic activity (natural in the flour + added malt), not just the malt that is added by the flour miller. If you have an unmalted flour made from good, sound wheat, the addition of 0.25% of a 20L diastatic malt powder should provide the flour with a FN value something under 300 (indicating a normally malted flour). The actual amount of malt added by the miller is totally immaterial and unless you have access to a FN instrument the best you can hope for is to get close to a normally malted flour. We determined the use level of 0.25% 20L diastatic malt powder using the Amylograph instrument (prior to the invention of the Falling Number which is much faster). If you want to replicate the exact malting of a flour you first need to get a FN value of the flour, then add whatever amount of diastatic malt or amylase enzyme is needed to give the flour a FN value in the 200 to 250-second range.

Tom Lehmann/The Dough Doctor

1778

/ [Re: Purposely undercooking crust](#)

Norma;

Yes, a Fish brand oven is a reel type oven. I'm not familiar with the pizza referenced but it might be a thin crispy type crust (typically made with 40 to 45% absorption) or a cracker type crust made with 45 to 50% absorption but mixed only 45-seconds, or so, and handled much like a long flake pie dough or possibly a biscuit dough. Both of these pizza types generally turn out pretty crispy regardless of the type of oven used. They're also great for pizza buffets too, think Mr. Ghatti's or Incredible Pizza, Pizza Street, Pizza Ranch, etc.

Tom Lehmann/The Dough Doctor

1779

/ [Re: First major success](#)

Good, open cell structure, strong bottom bake (I bet it's crispy!) and a very good top bake, (I like it that way) can't ask for much more than that! Great looking pizza! Fantastic, considering it's only your fourth attempt! :drool:

Tom Lehmann/The Dough Doctor

1780

/ [Re: Purposely undercooking crust](#)

Peter;

Since the term is used so frequently in reference to reel type ovens I assumed, maybe incorrectly, that it was in reference to the reel oven, but then we all know about those who "assume". :-D

Tom Lehmann/The Dough Doctor

141

/ [Re: Can you explain my observations?](#)

So your question is; Why is there a variation in the amount of flour in bags from the same delivery.

Your observations are spot on, we've seen this all the time over many years, but we don't see much variation in the actual weight of the bag when you include the tape and thread. This is why I've always advocated weighing each and every bag of flour. The variations you are encountering are from the fact that the bags are automatically filled on high speed handling equipment. While any one bag might be "off weight" if you weigh a group of ten bags the average of the ten will be correct. By the time the equipment adjusts for an off-weight the bag has already moved on and the next bag is being filled. This is why the weight seems to float between slightly heavy and slightly light with a few spot-on for good measure. It's only the bags that are out of set tolerance that are automatically pulled from the line. We've also documented that the closer you are in dough absorption to either of the extremes of high or low, the more apparent these variations become.

Also, keep in mind, as I've said so many time before, flour is not a constant, it's really quite variable. The age of the flour or wheat from which it is milled will affect it, the conditions under which it's stored will affect it, and the grist (collection of wheat varieties) from which it is milled will affect it. The millers do a great job in providing us with flour as good and consistent as it is. I have two heroes in my life, the flour miller and Betty Crocker!

Tom Lehmann/The Dough Doctor

142

[/ Re: Flour , water , salt, yeast. What is the right order to add them?](#)

When mixing dough by hand I like to add the water then the salt and sugar and the yeast (both ADY and IDY are added in a water suspension) then the flour, I then begin hand mixing to incorporate everything, then I allow the dough to rest (autolyse) for 45 to 60-minutes before continuing with my hand mixing process. When machine mixing I add the water first, then the salt and sugar followed by the flour. IDY or CY are added right on top of the flour, but ADY is added in a water suspension. Mixing is then started. If oil is used I follow the delayed oil addition dough mixing method.

Tom Lehmann/The Dough Doctor

143

[/ Re: Metal Proofing Pans vs Plastic Proofing Trays](#)

The one place where the individual tins really shine is when you're dealing with a high absorption dough.

Tom Lehmann/The Dough Doctor

144

[/ Re: Tom Lehmann's guide to burger buns](#)

I'm, still trying to find the pizza in it? :-D

Tom Lehmann/The Dough Doctor

145

[/ Re: Pizza boxes?](#)

There are generic pizza boxes and there are pizza boxes with custom printing on them. Many pizzerias will sell advertising space on their pizza boxes to help off-set the cost of the boxes.

Tom Lehmann/The Dough Doctor

146

[/ Re: Dots on pizza dough](#)

The spots, actually "speckles" as they are referred to as are most commonly associated with oxidized particles of wheat bran, they are harmless and don't show up in the baked product. Once in a while we come across something that's similar which is caused by yeast agglomerates resulting from using ADY as one would IDY (adding it directly to the flour or dough rather than suspending it in water to hydrate and activate prior to addition). The same can result from the addition of IDY directly to the dough and not mixing the dough long enough after the IDY addition (5-minutes is recommended). This is why my preferred method is to add the IDY directly into the flour as it's hard to go wrong that way.

Tom Lehmann/The Dough Doctor

147

[/ Re: Ground Tomatoes](#)

Why not just make your own? A food mill will allow you to make your own from fresh or canned tomatoes.

Tom Lehmann/The Dough Doctor

148

[/ Re: Rounder and divders](#)

What are the dough weights and production numbers we're looking at? Will this be for a conventional (yeast leavened) dough or a sourdough?

Tom Lehmann/The Dough Doctor

149

[/ Re: Tom Lehmann's guide to burger buns](#)

I'm not sure about hamburger buns being more "healthy" than pizza but here goes.

0) No "rules" or "standards" but they are expected to be soft and pliable.

1) A strong bread type flour with 12 to 12.8% protein content works best.

2) Typical salt level is 2%, this is to provide a controlled rate of fermentation, dough strength, and flavor to the finished bun.

3) Typical sugar level is 13%.

4) Dough absorption is variable between 58 and 62% depending upon the absorption properties of the flour.

5) No need to use milk in a hamburger bun dough formula.

6) If you want to achieve a flavor from the milk use at least 5% butter milk solids.

NOT LIQUID MILK.

7) I can think of no logical reason for wanting to use milk of any kind in a hamburger bun aside from flavor see #6 above.

8) Absolutely correct.

9) This process is essentially a small portion of the flour made into a roux and added as an ingredient. If the flour is not malted, does not contain any amylase enzymes and has been milled from wheat with absolutely NO sprout damage it can be beneficial in making a softer bread/bun BUT if the flour has been malted or contains amylase enzymes or has been milled from wheat having ANY sprout damage the enzymes will hydrolyze the damaged starch(cooked starch) in the roux converting it to sugar and releasing the water to create a wet, sticky dough.

10) 4 to 6% fat is typically used.

11) Today oil is mostly used as it promotes a softer crumb structure but indeed butter could be used.

12) If a plastic fat is used it can be added up front but if an oil is used it should be added 1 to 2-minutes into the mixing process (delayed oil mixing procedure).

13) When potato flour is used it is common to add it at 2% of the flour weight. Be sure the dehydrated potato DOES NOT contain any sulfites.

14) Yes, that's how it was done prior to the advent of dehydrated potatoes.

15) 80/20 Sponge & dough process with 3.5-hours sponge fermentation time.

16) It provides the necessary control over fermentation to produce finished buns with the desired flavor and even more importantly, finished shape characteristics along with the resilience needed to hold up to having a hot meat patty placed in it along with high moisture content condiments without either cracking into pieces or turning soft and gummy in the consumer's hands.

The sponge is made using 80% of the flour, 55% absorption based on sponge flour weight and 3% compressed yeast, set temperature is 75F/23.8C, sponge mix time is generally 4 to 5-minutes, sponge is then allowed to ferment for 3.5 to 4-hours, it is then brought to the mixer where it is incorporated into the remainder of the dough ingredients and mixed to FULL gluten development and in many cases a little more. It is then given a 5 to 10-minute rest period and divided, given a final proof time of 5 to 8-minutes and rolled to a diameter slightly larger than the pan cup, it is then panned, given a final proof (100 to 105F/37.7 to 40.5C) with 86 to 88% R.H. and baked at 440F/226.6C for about 12-minutes.

17) I've not had good success making hamburger buns as described above using the cold fermentation process. The internal crumb structure is always too open and porous.

18) You are looking for a very small and fine crumb structure.

19) Each is formulated differently as there are different expectations for the finished bun.

20) Brioche Buns:

AP Flour: 100%

Salt: 2%

Butter milk (scalded): 5%

IDY: 1%

Sugar: 6.75%

Whole egg: 22%

Unsalted butter (slightly softened): 8%

Water: (100F) 50%

Place water in mixing bowl, add salt, sugar, buttermilk and beaten whole egg, add flour, IDY and butter. Mix using a flat beater until a dough is formed, allow to ferment 3 to 4-hours, scale to desired weight and form into balls, flatten balls to about 3/8-inch/9.5 mm., place on greased baking sheet and allow to proof until at

least double in height, apply egg wash or milk wash, bake with steam in the oven at 400F. (if over doesn't have steam place a sheet pan filled with hot water in the oven 30-minutes prior to baking, do not remove until after the buns have been baked).

Potato Buns:

Strong bread type flour: 100%

Salt: 2.5%

Sugar: 4%

Butter: 5%

IDY: 1.25%

Re-hydrated Potato Flakes: 8%

Water: 55%

Target finished dough temperature: 80F

Remixed straight dough procedure:

Place water in mixing bowl, add salt, sugar, flour, potato, IDY and butter.

Mix to form a well incorporated dough (about 7-minutes).

Allow to ferment for 2-hours.

Remix to a smooth, extensible consistency.

Allow dough to rest for 15-minutes.

Divide into desired weight pieces and form into balls.

Allow dough balls to rest for 10-minutes (variable).

Roll out to desired diameter.

Place formed dough pieces on a greased baking sheet.

Allow to final proof (95 to 100F/35 to 37.7C) with 85 to 87% R.H. (proofing time will be variable).

Bake at 420F/215.5C for approximately 15-minutes.

Regular burger buns:

Sponge:

Flour: 80% (strong bread flour)

Water: 55% of the sponge flour weight.

Compressed Yeast: 3%

Mix together for 5-minutes (target temperature is 75F).

Allow to ferment for 3.5 to 4-hours.

Dough:

Flour: 20% (strong bread flour)

Salt: 2%

Compressed yeast: 1%

Sugar: 13%

Oil: 5%

Water: 58% based on TOTAL FLOUR WEIGHT. To find the dough water weight calculate total dough absorption and subtract the weight of water in the sponge, the remainder will be the ACTUAL amount of water to add at the DOUGH side.

Procedure:

Add the dough water to the mixing bowl, followed by the salt and sugar, then add the flour and the compressed yeast.

Mix at low speed for 2-minutes, add the oil or shortening and the fermented sponge, mix at low speed for 2-more minutes, then mix at medium speed until the dough is fully developed and extensible. Target finished dough temperature is 80F/26.6C.

Allow the dough to rest for 10-minutes, then scale into desired weight pieces and form into balls.

Allow dough balls to intermediate proof for about 8-minutes (or until they can be

rolled/pinned out to desired size)

Place on greased baking sheet and allow to proof at 100 to 105F/37.7 to 40.5C for about an hour or until the buns are fully proofed.

Bake at 440F/226.6C for about 12-minutes or until the buns have a solid brown color.

21) A good replacement for egg wash is whole milk. Do you really sacrifice an egg every time you make egg wash? I just fry up what I have left over as a treat for the baker "ME" :chef:

22) Tips:

Always remove baked buns from the baking pan immediately after baking. Cool on a wire rack/screen.

Add variety to the buns by spraying them with whole milk before baking and sprinkling with sesame seeds, poppy seeds, grated Parmesan cheese, fine chopped onion, garlic, or a blend of herbs.

If the buns do not flow out sufficiently during proofing and baking (look like baseballs) the dough may need more fermentation, mixing or increased dough absorption.

I worked with Weber's Bakery in Germany helping them produce hamburger buns for their McDonald's contract back in the 80's during which time I was on the McDonalds International Bakery Products Task Force working with different baking companies world wide helping them produce hamburger buns aka "McDonalds Buns" for their McDonald's restaurants.

Tom Lehmann/The Dough Doctor

150

/ [Re: Pizza Slap Practice Dough](#)

There is also a commercial product called "Through Dough" that works quite well. Its main use is to practice acrobatic dough tossing.

Tom Lehmann/The Dough Doctor

151

/ [Re: How much Cheese on a pizza?](#)

It would be a step in the right direction. You're at 1.25% sugar right now, I'd go to 0.5% and bench mark from there. If your flour is already malted you might be able to delete the sugar entirely if necessary.

Tom Lehmann/The Dough Doctor

152

/ [Re: Higher hydration doughs](#)

Oil is a lubricant and the lubricity it provides to the dough helps it to expand. Oil also helps to seal the gas cells within the dough which helps them to better retain the leavening gas produced by the yeast, together these two benefits of oil will

result in improved oven spring. However, like all good things too much can be bad too. The addition of up to about 5% oil can be beneficial to oven spring but more than that could have a detrimental affect upon oven spring (it would depend upon the dough formulation). The addition of oil will also have a significant impact upon the mastication properties of the finished crust (oil is a tenderizer) but I did not address this because the question was on oven spring. Oil can also interfere with gluten development which we address through the delayed oil addition mixing method, maybe that's what happened to cause your crusts to go flat during baking?
Tom Lehmann/The Dough Doctor

153

[/ Re: Has anyone else had trouble since the pandemic?](#)

Great answer!!! ^^^
Makes perfect sense.
Tom Lehmann/The Dough Doctor

154

[/ Re: my dough balls are not baby butt smooth](#)

The dough appears to be a little under mixed but it won't hurt in the least. It'll be just fine.
Tom Lehmann/The Dough Doctor

155

[/ Re: How much Cheese on a pizza?](#)

Not knowing anything about your oven, but can you "dome" your pizzas to achieve the cheese melt (assuming you meant "now as opposed to not), this is done a lot of times where we need to dry off the top of the pizza to achieve the top color and cheese melt we're looking for. The moisture being released from the toppings is blanketing the top of the pizza during baking thus effectively keeping the top cool, by doming the pizza you move the pizza into the intense heat at the top of the oven at the end of the baking cycle just long enough to achieve the top characteristics you're looking for.
Tom Lehmann/The Dough Doctor

156

[/ Re: Question About Using Nutritional Yeast](#)

It sounds just like the product RS-190 aka "dead yeast" from Lesaffre/Red Star Yeast. The active ingredient in the dead yeast is glutathione, an amino acid contained within the yeast cell. The cell membrane has been denatured allowing for the release of glutathione into the dough where it acts as a reducing agent much like L-cysteine which is the active ingredient in PZ-44, an ingredient commonly used to impart added extensibility to a dough. Too much will certainly result in a "droopy" dough condition which we used to affectionately refer to as "elephant snot". These materials are potent with actual use levels measured in ppm

(parts per million) based on flour weight. Because of this the L-cysteine in PZ-44 is cut with whey to make scaling easier, the RS-190 has a lot of "fluff" remaining from the yeast cells so the material is not pure glutathione. In both cases (PZ-44 and RS-190) the recommended use level is generally considered between 1 and 2% of the flour weight. Like Brylcream, use more only if you dare. ;D
Tom Lehmann/The Dough Doctor

157

/ [Re: Higher hydration doughs](#)

That work shows what we we found as a difference between "true" bulk fermentation and balled dough CF, even to the point of needing more than 24-hours CF to achieve decent finished crust characteristics (this is why I have always said that a dough that is scaled and balled right after mixing and cold fermented can be used after 24-hours but is at its best with at least 48-hours cold fermentation. We saw pizzerias go through something of a hybrid dough stage at one point where they were still bulk fermenting but placing the bulk dough in the cooler, what they accomplished was a finished dough that had bulk fermented characteristics on the inside (core) of the dough mass and CF characteristics where the dough was up against the fermentation container as this allowed heat to transfer away from the dough so the fermentation was totally different in that area, the issue now was that when the dough was used there was no way to distinguish between the two different fermented areas and they were roughly mixed together, the end result was finished pizzas with a blotchy/mottled crust color (less crust color development from the center of the dough mass due to more fermentation and less color from the outer portion of the dough mass where the dough was fermented more like we see in a CF dough). When using strong, tenacious U.S. flours fermentation is a vital key in achieving a tender eating and crispy finished crust characteristic, this is because fermentation conditions the gluten and sets the stage for the oven spring and resulting open crumb structure needed to achieve these characteristics. Weaker flours, milled from soft wheat varieties, typically yield dough that is much more extensible due to the nature of the gluten so they do not usually require a long fermentation time to achieve these characteristics but without the fermentation time there is not the same flavor development either, which is a good case for the use of a biga or sourdough starter with soft wheat flours.

Tom Lehmann/The Dough Doctor

158

/ [Re: Higher hydration doughs](#)

When we did the work we saw very little difference between bulk and balled dough when the total dough weight was 1.5-Kg. The benefits of bulk fermentation come when the dough is sufficiently large so as to continue to heat up due to heat of metabolism which allows the dough to actually increase in the rate of fermentation due to its increasing temperature over the fermentation time. Smaller size doughs/dough balls simply do not have the mass to allow for this to happen and because of this the rate of fermentation is not as predictable or consistent as the dough will be more impacted by the temperature of the room. As an example, when I first started in the baking industry we used to have special rooms with highly controller temperature and humidity (fermentation rooms) just for fermenting our

bulk doughs. This was all based on small scale testing that showed this was needed in order for the bulk dough to maintain a predictable/consistent rate of fermentation, then it was discovered that the mass of the bulk dough retained so much latent heat and developed such good insulating properties that it was all but impossible to impact the rate of fermentation of the dough through environmental influence. Based on this, almost overnight the fermentation rooms disappeared and doughs/sponges were bulk fermented at room temperature (regardless of whatever it might be). This practice is still in place today. This is what got us to looking at bulk v/s balled fermentation as it pertains to pizza production back in the early 80's.

Tom Lehmann/The Dough Doctor

159

/ Re: Repacked Caputo flour

You just want to know WHICH Caputo "00" flour you're getting as it can make a big difference in how you manage the dough.

Tom Lehmann/The Dough Doctor

160

/ Re: Which are the factors that affect digestibility?

YT is good but it does have its limits....don't believe "everything" you see and hear on YT. :o

Tom Lehmann/The Dough Doctor

1781

/ Re: Why Does This puff Up So

The idea is to bring the dough balls out of the cooler and allow them to warm (temper) to 50-55F at most pizzerias but at home we typically go up to 60-65F as we will only be working with a very limited number of dough balls. The dough has already been fully fermented when we remove it from the cooler and we really don't want it to ferment any more than necessary if at all possible after that. If a pizzeria were to allow the dough to come up to 75 or 80F they would need to use all of the dough within a very short period of time (well under 2-hours) or it would over proof resulting in an out of "spec." finished pizza. Additionally, the dough is extremely difficult to open when right out of the cooler and it will bubble profusely too when baked, by allowing the dough to temper as described above the dough opens much more easily and bubbling is minimized or eliminated completely. Depending upon one proficiency at opening the dough balls as well as the dough absorption, many home pizza makers find that a colder dough is easier to manage than a warmer one.

Tom Lehmann/The Dough Doctor

1782

/ Re: Purposely undercooking crust

The Roto Flex ovens are a horse of a different color than the reel type ovens, they're designed specifically for baking pizzas. Additionally, they rotate horizontally as opposed to vertically for the reel ovens.

Tom Lehmann/The Dough Doctor

1783

/ [Re: Purposely undercooking crust](#)

When baking pizzas in "reel" type ovens it is all but impossible to achieve a very crispy crust characteristic unless the pizzas are par-baked, this is why true Chicago thin crust pizzas have the unique eating properties of something approaching cooked ravioli. Those ovens were never designed for baking pizza (they're bakery ovens) but in specific applications they serve the purpose quite well.

Tom Lehmann/The Dough Doctor

1784

/ [Re: adding diastatic malt powder to my flour to match all trumps malted](#)

That's the amount you would add to an non-malted flour to achieve the same malting as used by the flour miller in making malted flour. The exact amount will occasionally be varied by the flour miller depending upon the quality (sprouting damage) of the flour he/she is milling at the moment. The more sprouting damage the less malt or amylase enzyme they will add and the less sprouting damage the more malt/enzyme they will add. High quality flour always has little to no sprouting damage but in some years, especially those where there is significant rainfall during the harvesting period, sprouting damage cannot be avoided so the miller addresses it by adjusting the malt/amylase enzyme amount that is added to the flour at the time of milling.

Tom Lehmann/The Dough Doctor

1785

/ [Re: Proofing multiple batches](#)

I would suggest targeting a finished dough temperature of between 70 and 75F. A container that is tall, like a trash container (but approved for food contact) is better than a wide, open container since it will allow for the entrapment of carbon dioxide (heavier than air) over the dough (greenhouse effect) which will help to protect the dough from moisture loss as well as temperature changes in the room. The loose covering is only to prevent air movement in the room from disturbing this protective layer of carbon dioxide. This is how the "BIG BOYS" do it in commercial bakeries.

Tom Lehmann/The Dough Doctor

1786

/ [Re: adding diastatic malt powder to my flour to match all trumps malted](#)

That's an easy one to answer, use 0.083% based on the total flour weight.

Tom Lehmann/The Dough Doctor

1787

[**/ Re: Proofing multiple batches**](#)

If you are referring to bulk fermenting the dough (proofing is done after forming in some manner) and the time will be 24-hours or more you shouldn't have any issues with just tossing them all into a single appropriately sized container, loosely lidding/covering it and allowing it to ferment in that manner.

Tom Lehmann/The Dough Doctor

1788

[**/ Re: Proofing multiple batches**](#)

That depends, what will the time difference be between the first dough off of the mixer and the last?

Tom Lehmann/The Dough Doctor

1789

[**/ Re: AVPN recipe**](#)

If you are asking if you can suspend C.Y. in 75F water, the answer is yes. The temperature of the dough water is used to control the finished/mixed dough temperature.

Can you adjust the dough formulation so no refrigeration is required, yes you can. I'd start by adjusting the C.Y. level to about 0.15%, target a finished dough temperature of 80F (about 70F water temperature), scale and ball immediately after mixing and allow to ferment at ambient until the dough can easily be opened into skins. I can't say how long this will take as the time will vary with the strength of the flour as well as the ambient temperature. Time to roll up the sleeves and begin experimenting.

Tom Lehmann/The Dough Doctor

1790

[**/ Re: How to prepare many pizzas in advance before baking ?**](#)

Your procedure is a sound one that others have successfully used, but worried about the expense of the olive oil that you're brushing on the edge of the skin? OMG! How much are you using? Seriously, I can't envision you using more than a few grams at most, far less costly than the other ingredients you are putting on the pizzas for your guests. However, if this is an issue for you why not just use any low cost vegetable oil? Or how about using a blended oil such as one made by blending 20% olive oil into 80% vegetable oil. This is commonly done in cases where economy is an important factor.

Depending upon the viscosity of the sauce that you are using, pre-saucing for as much as 20-minutes before baking can lead to moisture migration into the dough which will lead to creation of a gum line after baking, you probably don't want to hear the solution to this problem but it involves the application of a very thin layer of oil to the surface of the skin prior to saucing. This very thin layer of oil creates a

barrier which helps to prevent the movement of moisture from the sauce (which is about 90% water) into the dough.

Another option to explore is to utilize the assistance of a helper in preparing the pizzas. You can have everything pre-portioned for each pizza so while one pizza is being baked the next one is being prepped.

If your dough is dry enough you might also try placing the skins on seasoned pizza screens, this would allow you to fully prep all of the pizzas ahead of time (no more than absolutely necessary), and place the pizza into the oven on the screen, after a very short baking time you will be able to lift the pizza off of the screen to finish baking right on the deck. This procedure has been discussed a number of times here in earlier posts, the procedure is referred to as "decking" the pizza.

It looks like you might want to do a little experimenting in preparation for your next pizza party. :pizza:

Tom Lehmann/The Dough Doctor

1791

[/ Re: Dough recipe for use in a rocbox?](#)

One other thing, will you be machine mixing or hand kneading the dough?

Tom Lehmann/The Dough Doctor

1792

[/ Re: Dough recipe for use in a rocbox?](#)

Before getting into the nuts and bolts of your request, you say you only have "granulated" yeast available to you. This is what us "Yanks" refer to as dry yeast. Can you tell me if it is ADY (active dry yeast), directions will call for it to be activated prior to addition to the dough, or is it IDY (instant dry yeast) not necessary to activate prior to addition to the dough. If in doubt, send a photo of the packaging and we should be able to tell.

Tom Lehmann/The Dough Doctor

1793

[/ Re: AVPN recipe](#)

Not really. you're kinda at the mercy of your supplier unless you can see a manufactured/package date on the package. If there is no packaging well???? Old time bakers used to take an egg size piece of dough immediately after mixing and form it into a ball then toss it into a bucket of warm water, if it floats in a few minutes the yeast is still alive but quality still unknown. Outside of laboratory instrumentation, that's about the best you can hope for. By the way, color and aroma are not good indicators of quality either. The one thing that does indicate sub-par quality in C.Y. is a slimy appearance and feel to the C.Y. wet and/or sticky are OK but not slimy.

My son has a place on Boot Lake, about 20-miles east of Park Rapids.

Tom Lehmann/The Dough Doctor

1794

/ [Re: AVPN recipe](#)

No way! If, and that's a BIG "if" the yeast is fresh and hasn't been temperature abused in any way, expect something more like 3-weeks shelf life. With ADY you will get 6 to 12-months and with IDY up to 12-months, assuming proper handling. Whereabouts in Northern MN? Close to Park Rapids or D.L.?

Tom Lehmann/The Dough Doctor

1795

/ [Re: Pan Pizza](#)

While I'm not familiar with the dough formulation cited, in looking at it the procedure says it all, after mixing the dough (not actually kneading) remove it from the mixing bowl and pin it out to size, place it into the prepared 14" diameter pan (1/2-cup of oil seems like a lot of oil) and allow it to proof until the dough fills the pan, then cover and place in the refrigerator for 4 to 24-hours, remove from the fridge, dress and bake.

Here are my issues with the dough formula and procedure: The formula only contains 0.89% salt which is really not enough for optimum flavor, instead it should be between 1.75 and 2.25% for best crust flavor. The temperature of the water is not cited so I would recommend using 70F water but reserve 1/4 cup heated to 100F to activate the ADY in. Once activated, the ADY can be put into the colder water in the mixing bowl. You should be looking for a finished dough temperature of about 80F after mixing. I do not recommend proofing the dough to fill the entire pan because it will continue to proof in the fridge and you need to allow space in the pan for the increase in dough volume, instead, only allow the dough to proof to filling about 1/2 of the pan, then cover and place in the fridge where it will continue to proof until the dough is sufficiently cooled to slow the rate of fermentation. Once stabilized in the fridge the dough should keep for about 24-hours without any problems. Many operators of pizzerias manage their deep-dish/pan style pizza dough in a similar manner. To use the dough just remove from the fridge, dress the fully proofed dough (be gentle) and bake.

The length of time needed to get the initial 1/2 proof will depend upon the kitchen temperature as well as the actual finished dough temperature, expect about 45 to 60-minutes if you hit the numbers cited. How long in the fridge? I'd go at least 12-hours with 24-being even better for flavor. Deep-dish pizzas are all about the flavor of the crust (because there's so much of it) it isn't good you have to wallow through so much of it that it destroys the pizza experience. Experiment using butter instead of oil in the dough, or how about blending some ghee into the pan oil? Have fun experimenting! You'll be rewarded with a lot of great tasting pizza!

:chef:

Tom Lehmann/The Dough Doctor

Tom Lehmann/The Dough Doctor

1796

/ [Re: AVPN recipe](#)

CY is indeed the same animal as "fresh yeast" I used that as the yeast type since you were referencing the AVPN dough formulation which requires the use of only CY (compressed yeast)/fresh yeast/wet yeast. To use IDY (instant dry yeast) use

40% as much IDY as CY. This figures out to 0.3% IDY to replace 0.75% CY. As for your questions on the yeast levels the amounts you are referencing are for the AVPN type dough formulation, NOT the dough formulation that I provided for you. If you plan to use the supplied dough formulation used the yeast amounts cited in the dough formulation with the conversion to IDY if that's the type of yeast you wish to use.

Please note that there are two different yeast levels cited, one is for a same day dough while the other is for a 2-day (48-hour) dough.

Tom Lehmann/The Dough Doctor

1797

/ [Re: AVPN recipe](#)

Here is a one day pizza dough formula that we used in our Woodstone wood fired oven.

Flour: 100%

Salt: 2.25%

CY: 0.75%

Water: 58%

Put water (75F) in bowl, reserve a small amount for the salt, add the CY and stir to suspend the yeast in the water. Add 1/2 of the flour and stir in. Allow to rest for 30-minutes, add the salt to the reserved water and add it to the dough along with the remainder of the flour. Mix until free of lumps and allow to ferment for 1-hour, turn out of the bowl onto a floured bench and knead until smooth (about 10-minutes).

Scale into desired weight pieces, form into balls, wipe the dough balls lightly with oil and place into individual plastic bread bags, pull the bag snug to the dough ball and twist the open end to form a pony tail, tuck the pony tail under the dough ball as you place it into the fridge, allow to cold ferment for at least 6-hours but can go longer. To use, remove from fridge and allow to set at room temperature for 2 to 3-hours before turning the dough ball(s) out of the bag onto a floured surface, open by hand into skin for immediate use. Once you begin opening the dough balls they will remain good to use for about 2-hours.

To make this into a 2-day dough just reduce the yeast to 0.5%. Manage the dough in the same manner except hold it for 48-hours in the cooler before use. In my opinion, a 2-day dough is MUCH better than a 1-day dough.

Tom Lehmann/The Dough Doctor

1798

/ [Re: Pan Pizza](#)

Could you please provide the specific dough formula and dough management procedure you are planning to use.

Tom Lehmann/The Dough Doctor

1799

/ [Re: Side crust color and dough handling](#)

Your pizza looks really good. :chef:

Tom Lehmann/The Dough Doctor

1800

/ [Re: agitating dough vs kneading](#)

The word "agitate" is being used as a synonym for "mix" , in many cases the mixer manufacturers refer to the different mixing attachments as agitators too. Kneading the dough by hand is a very gently way of developing the gluten, so unless you're a "gluten" for punishment and want arms that would put the village blacksmith to shame, it is all but impossible to over develop the gluten when hand kneading. The main reason for this is because kneading the dough exposes the gluten matrix to air/oxygen which repairs the gluten bonds being broken by over mixing, sorta like an endless loop. But on the other hand, high speed mixing, like when a VCM is used can easily turn an otherwise good dough into soup by over mixing, which might only take a couple of minutes.

Tom Lehmann/The Dough Doctor

1801

/ [Re: AVPN recipe](#)

I'm confused by your dough formula. 58% = dough absorption; 0.2% = (compressed yeast?); 0.11% = ? Salt should be in the 1.75 to 3.25% range and yeast (as compressed yeast) in the 0.175 to 0.2% range.

Are you planning to do your mixing by hand or machine for your same day dough? Do you want to stay close to the AVPN concept or are you just looking for a good same day dough for your wood fired oven?

Tom Lehmann/The Dough Doctor

1802

/ [Re: Non-diastatic malt syrup](#)

Diastatic (enzyme active) malt contains amylase enzymes which hydrolize starch into sugars, it does not hydrolize proteins. Non-diasratic malt does not contain any viable amylase so it does not hydrolize any starch into sugar, hence non-diastatic malt is nothing more than just another sweetener (sugar).

Tom Lehmann/The Dough Doctor

1803

/ [Re: Barley malt syrup](#)

Agreed, 2% would be a good starting point. The difference in dough absorption with and without malt syrup would be easily within standard deviation for absorption and undetected. Yes, you can also use molasses, just be sure it's un-sulfured.

We used to use molasses or industrial grade honey (very dark) at 3% in our multi-grain crusts along with butter for the fat source.

Tom Lehmann/The Dough Doctor

1804

[/ Re: Non-diastatic malt syrup](#)

Yep.

Tom Lehmann/The Dough Doctor

1805

[/ Re: Barley malt syrup](#)

Actually, it's the kettling process that gives the traditional bagel that chewy texture, those that are used for making bagel sandwiches are typically made using the steaming process since it makes for a more tender eating bagel. The non-diastatic malt syrup used in a bagel formula provides for the crust color that is characteristic to a bagel and to an extent, the "nutty" flavor of the bagel. A good number of posters here have used it in their pizza doughs too.

Tom Lehmann/The Dough Doctor

1806

[/ Re: Non-diastatic malt syrup](#)

Non-diastatic malt is a type of sugar. Like sucrose (table sugar) it provides residual sugar for crust browning while at the same time providing a unique "malty" (think malted milk balls/candy) flavor when used at higher levels.

Tom Lehmann/The Dough Doctor

1807

[/ Re: Was this dough overproofed? Please take a look at my latest pies with Poolish](#)

The yeast level looks OK (but I have a question: How do you have a "preferment without any yeast?) so I would reduce the bulk fermentation time by 8 to 12-hours and proceed from there as normal.

Tom Lehmann/The Dough Doctor

1808

[/ Re: Should my metal peel have a sharpened edge?](#)

Either flat or rounded works fine. If you are tearing the bottom of the pizza when turning/spinning you are not allowing the pizza to set undisturbed long enough.

Tom Lehmann/The Dough Doctor

1809

[/ Re: Pizza Peel Question](#)

There is no seasoning of a peel but a new wood peel should be sealed using mineral oil. If you check back in the archives you should find any number of discussions on the topic including how to seal a wood peel using mineral oil. Just DON'T EVER

WASH IT, wipe it down with a slightly damp towel but don't put it in the water. With time/use you may find the surface getting a bit rough, just lightly sand the top surface with a 200-grit, or finer, sand paper and reseal and you'll be good to go again.

Tom Lehmann/The Dough Doctor

1810

/ [**Re: Was this dough overproofed? Please take a look at my latest pies with Poolish**](#)

It does appear that the bulk dough was somewhat over fermented which is why it was so gassy and difficult to ball. When faced with that situation I normally degas the bulk dough by slapping in on the counter top several times and then proceed with scaling and balling.

Tom Lehmann/The Dough Doctor

1811

/ [**Re: Effects of bake temps vs bake times**](#)

It's in pizza dough, regardless of what it's baked in or on.

Tom Lehmann/The Dough Doctor

1812

/ [**Re: Can't get toppings to cook no matter the temperature before crust burns**](#)

Setting the pizza on a screen will create an air gap/thermal break which will slow down the rate at which the crust bakes thus allowing more time to get the toppings done without burning the crust.

Tom Lehmann/The Dough Doctor

1813

/ [**Re: Non-diastatic malt syrup**](#)

Unless you are using non-diastatic malt at very high levels, above 5% the effect of the malt will be on the crust color only.

Tom Lehmann/The Dough Doctor

1814

/ [**Re: Hydration Test**](#)

In a practical setting the answer might be no but in a research setting where we are looking for differences due to the affect of a variable which we introduced, the answer is absolutely.

Tom Lehmann/The Dough Doctor

1815

/ [**Re: What causes "pock marks" on cheese?**](#)

The appearance of those pizzas is very reminiscent of diced cheese. The issue can stem from the use of frozen cheese or subjecting it to too high of a temperature during baking.

Tom Lehmann/The Dough Doctor

1816

[**/ Re: Can't get toppings to cook no matter the temperature before crust burns**](#)

In a deck oven (which you have) the typical baking time is about 7-minutes. This is why you are seeing the best bake at around the 7-minuter mark. Your oven does not have the top heat capability to provide a faster bake.

Tom Lehmann/The Dough Doctor

1817

[**/ Re: Effects of bake temps vs bake times**](#)

Fat in one form or another is a pretty common ingredient in pizza doughs. It provides lubricity to the dough, it helps to seal the gas cell within the dough for improved oven spring, it also helps to retard moisture migration from the sauce and toppings into the dough/crust, and it helps with finished pizza flavor by imparting its own unique flavor such as is the case with olive oil or non-deodorized lard or capturing and retaining flavors otherwise lost during baking. We have discussed this a number of times before and it might be included in the function of ingredients here.

Tom Lehmann/The Dough Doctor

1818

[**/ Re: Cold Bulk Ferment and the process**](#)

Waiting for the dough to come to room temperature will involve quite a bit of additional fermentation which will become a variable with future doughs, I would suggest scaling and balling the bulk dough as soon as it comes out of the fridge as that will provide for a more consistent form of dough management.

Tom Lehmann/The Dough Doctor

1819

[**/ Re: Hydration Test**](#)

If the bake temperature wasn't confirmed before each bake all bets are off of the table. I withdraw my comments. Only one variable at a time is allowed.

Tom Lehmann/The Dough Doctor

1820

[**/ Re: What causes "pock marks" on cheese?**](#)

A couple of different things come to mind, can you provide a picture?

Tom Lehmann/The Dough Doctor

1821

/ [**Re: Bigger black bubbles on Neapolitan**](#)

My experience is that it's mostly a matter of oven temperature with #2 being baked in a hotter oven than #8, however, both fermentation and dough temperature as well as dough absorption can impact bubbling too.

Tom Lehmann/The Dough Doctor

1822

/ [**Re: Hydration Test**](#)

I can see a progression in edge thickness as the dough absorption is increased. Could tell more if the slices had been cut from the bottom as this gives a much better view of the center section of the crust.

Tom Lehmann/The Dough Doctor

1823

/ [**Re: not sure - stretching, baking, thickness**](#)

Your pizzas look like they were baked at too low of a temperature which would explain the dull appearance too.

Tom Lehmann/The Dough Doctor

1824

/ [**Re: Cold Bulk Ferment and the process**](#)

It really doesn't matter much if you take a bulk dough of that size directly to the fridge or if you allow it to ferment for a period of time prior to placing it in the fridge. If it were me, I'd scale and ball the dough immediately after mixing, and get it into the fridge right away. Let biochemical gluten development do the work for you and as an added bonus you will have better consistency in your doughs. I like to lightly oil the dough balls and place them into individual plastic bread bags as there is no cross-stacking/leaving and down-stacking involved (leaving the dough un-lidded for a couple of hours in the fridge before lidding the containers). To use the dough just remove it about 2-hours prior to use, and allow it to warm to 50 to 60F before opening the dough balls into skins.

Tom Lehmann/The Dough Doctor

1825

/ [**Re: Dough handling+baking**](#)

I don't remember, but if you contact Steve Green at PMQ Magazine <steve@pmq.com> I'm sure he can provide you with information and probably even contacts as they have a person in Japan and a presence at the show. I did a series of seminars at one of the food shows in Japan a few years ago, I no longer remember the name of the show or the venue but it was the large building shaped

like an upside down pyramid, you can't miss that building!
Tom Lehmann/The Dough Doctor

1826

/ [Re: Effects of bake temps vs bake times](#)

Beg my pardon? For what? :-D Feel free to jump in at any time.
Tom Lehmann/The Dough Doctor

1827

/ [Re: Effects of bake temps vs bake times](#)

Chicago pizzas are baked for a very long time. Thin crust pizzas typically in the 25 to 30-minute range and deep-dish pizzas in the 40 to 45-minute range. I can't speak about HRI pizzas as I've done too much work for them over the years.
Tom Lehmann/The Dough Doctor

1828

/ [Re: Mixing in steel cut cracked wheat w/ 2 other flours](#)

No, that's not what I said. What I said only applies to cracked or steel cut. Whole-wheat flour can be used at 100% to make a whole wheat crust since you can develop the gluten in the whole wheat flour it includes as a part of the flour equation so when you add up the white flour percent and the whole-wheat flour percent the sum is 100%. Due to the VERY SLOW hydration of the bran portion of the whole wheat flour it is advisable to prepare a "soaker" with water and whole wheat flour and allow this to soak for 30 to 60-minutes prior to addition to the dough. I've written an article on how to determine the absorption of whole-wheat flour and I've discussed it several times here in previous posts. If you don't get it right the finished crust will eat more like cardboard than anything else. Done correctly, whole-wheat crusts are a bit soft and chewy with a somewhat crispy outer layer.

Tom Lehmann/The Dough Doctor

1829

/ [Re: Break and shred](#)

That is a very high and broad protein range for an A.P. flour. The problem is, do you know anything about their cake flour? High ratio cake flour or low ratio cake flour? There's a HUGE difference. Is their cake flour milled from hard or soft wheat varieties? BIG difference. Minnesota Girl (11.8% +/-) or Buccaneer (11.4 +/-) would be a much better route to go without the need to blend. Do you have any of these available to you?

Tom Lehmann/The Dough Doctor

1830

/ [Re: Effects of bake temps vs bake times](#)

To answer your question on bake time v/s temperature, bake time has the greatest impact upon the crispiness of the finished crust in respect to achieving a crispier crust as it allows more time to develop a crispy layer on the crust. Think of a Neo. pizza baked at 900+ F. It's crispy when it first comes out of the oven but within a minute or so it's like limp pasta.

The oven being referenced is called a "reel" oven, they're a mainstay pizza oven in Chicago.

Tom Lehmann/The Dough Doctor

1831

/ Re: Hydration Test

If you want to see differences in dough absorption you really need to make 2% incremental changes.

Tom Lehmann/The Dough Doctor

1832

/ Re: Break and shred

12% protein content flour is a bit on the high side for white pan bread. Most white pan bread producers use flour with a protein content in the 10.8 to 11.6% range.

Typically, the higher the protein content the more pronounced the B&S will be.

Tom Lehmann/The Dough Doctor

1833

/ Re: Mixing in steel cut cracked wheat w/ 2 other flours

Steel cut wheat is not considered as part of the flour equation as you will get very little gluten development from it. Instead, look at it as just another ingredient added to the dough. Unless you want the grittiness of the steel cut wheat in the finished crust they really need to be soaked for an hour or more prior to addition to the dough. Steel cut wheat, like whole wheat will have an absorption of something close to 75%. If you will search back to previous posts on whole wheat flour you will find the procedure for determining the absorption of your specific product at hand. The best way to add the steel cut wheat is to mix the dough for about 50% and then add the soaked steel cut wheat and mix to completion. They will add a chunky texture and something of a "nutty" flavor to the finished crust.

Tom Lehmann/The Dough Doctor

1834

/ Re: Break and shred

As long as it is controlled, by that I mean the break isn't excessive and the shred isn't wild and the top crust is still attached. It's one of the criteria we used to quality score breads on when we offered product scoring (evaluation) as a service to the industry. Large wholesale bakeries like to minimize B&S as if you have it you must be able to control it, this is a critical aspect for them as a poor shred can have jagged pieces of crust sticking out from the loaf which will snag on the bag as the

loaf is being mechanically bagged resulting in a slit in the bag and an unsaleable product. If the break is excessive the loaf may not fit into the bag, just all kinds of problems when you're bagging bread at upwards of 60 loaves per minute from a single bagging machine with multiple machines bagging 7,500 loaves per hour for each bread line.

Tom Lehmann/The Dough Doctor

1835

/ [Re: How do I store ADY?](#)

It says in the literature "room temperature" for storage. It is not recommended that you store it in the fridge as this will lead to condensation forming in the container over time which will ultimately adversely impact yeast performance. The literature also says the container has a "use by" date on it. This is all provided at the link you supplied.

One thing I might add, back in the 60's when we were looking at some of these non-domestic (for the U.S.) yeasts we found that we got slightly better shelf life by transferring the yeast to a small plastic bag and placing it back into the original container. Twist the top of the bag to close and apply the lid. This seemed to help keep moisture away from the yeast when stored for longer periods of time. I had even recommended this to the manufacturers at the time. I don't know if they ever acted on it or not.

Tom Lehmann/The Dough Doctor

1836

/ [Re: Pizza dough expiration / max fermentation](#)

So much of the answer to this question depends upon variables such as:

Strength of the flour.

Amount of yeast used.

Amount of sugar used,

Amount of salt used.

Temperature of the fridge.

How well the fridge holds a CONSTANT temperature.

Finished dough temperature.

Those are the highlights.

Tom Lehmann/The Dough Doctor

1837

/ [Re: difference between IDY and ADY \(glutenboy method vs what Gemignani says\)](#)

Suspending IDY in cold water can result in leaching out of the glutathione from the yeast cells, IDY is especially prone to this problem due to the "I" in its acronym. The "I" stands for instant as in instant (actually fast) hydrating. IDY should always be suspended in 95 to 100F water in cases where it needs to be suspended prior to addition to the dough.

Tom Lehmann/The Dough Doctor

1838

/ Re: Differences in dry active yeasts?

Remember it's designed specifically for high sugar (above 5%) dough formulations, also keep in mind that this specific type of yeast has a very low sodium tolerance. If the salt level is above 1% it will significantly impede the yeast action.

Tom Lehmann/The Dough Doctor

1839

/ Re: Break and shred

The gap between the cap and the side wall is the break and the striated portion (looks like shredded wheat) is the shred. It is a desirable feature in white bread. You can minimize it by placing the dough into the pan with the seam straight down the center of the pan. Also more mixing which creates a softer, more extensible dough will help to minimize it, while most strengthening additives will promote it as will SSL or DATEM. The use of a weaker flour will also minimize it too. Like a goof farmer takes great pride in plowing straight rows a good baker takes great pride in making loaves with about 1-inch of break and a well controlled shred.

Tom Lehmann/The Dough Doctor

1840

/ Re: The best pizza recipe regardless the price, the time, the equipment, etc. ?

Because all equipment is different as are kitchens it all boils down to experiment with what you have, read/learn as much as you can and most importantly, PRACTICE, PRACTICE, PRACTICE.

Tom Lehmann/The Dough Doctor

1841

/ Re: Side crust color and dough handling

While I have seen experimentally grown winter wheat flours with protein levels in the 20% range the highest commercially available flours are just a tad over 14% protein content. Most pizzas are best made with flour having a protein content in the 12 to 13% range.

Tom Lehmann/The Dough Doctor

1842

/ Re: Differences in dry active yeasts?

Forget the jar, you're obsessed with the jar (sounds like a movie line), just roll the package down onto the yeast and secure with a rubber band. The package is designed to protect the contents for upwards of 6-months to a year (unopened of course) so the jar isn't serving any useful purpose unless you're pulling a vacuum on it.

Tom Lehmann/The Dough Doctor

1843

/ Re: Side crust color and dough handling

Yael;
You stole my line. :-D
Tom Lehmann/The Dough Doctor

1844

/ Re: Actually 2 questions

The answer to both questions is yes. You will need to experiment to find the mixing time and speed that works best for the bread. I'm guessing that you might have better luck with a spiral mixer than a planetary mixer in this case. Regarding no knead pizza dough, it's been done effectively on a commercial basis for more years than I've been around. The processing facility will have to be designed from the ground up around the process. In both cases you will most likely need to deviate from the original procedures to some extent but that goes with the scale-up.
Tom Lehmann/The Dough Doctor

1845

/ Re: Side crust color and dough handling

Yep, that's why I mentioned the oven as a possible cause first,
Tom Lehmann/The Dough Doctor

1846

/ Re: Why Does This puff Up So

My New York style pizza dough ball weights are typically based on a dough loading of 0.106-ounces per square inch regardless of the diameter.
Tom Lehmann/The Dough Doctor

1847

/ Re: Differences in dry active yeasts?

Once the yeast packet is opened it is best to just discard the remainder but if you want to save it DO NOT remove it from the packet, instead just fold the packet down tightly against the yeast left in the packet and secure the folded top with a binder clip or paper clip.
Tom Lehmann/The Dough Doctor

1848

/ Re: Side crust color and dough handling

Is there a reason why you are adding so much VWG? Usually half of that amount is sufficient. Additionally, you are using 70% absorption but do you realize that of that 70% the gluten by itself is accounting for nearly 20%? That means the effective dough absorption is only around 50% which would explain why the dough is so

elastic. As for the whit edge I'm guessing it is due to one of two things, either the oven or late/delayed oven spring. You see the same thing on hamburger buns where it is called the "break" and it forms a white ring around the circumference of the bun just below the crown. It is also present in white pan bread where we call it "break and shred", in this case it usually occurs on only one side of the loaf (but it can be present on both sides). If this is the case the cause for it is excessive dough strength (remember all that VWG? That's where it's coming from). So if that's the case, a simple reduction in VWG should address the problem. For starters I would recommend reducing the VWG to 5%, you will need to reduce the absorption at the same time so for each 1% VWG increase or decrease the dough absorption by 2%.
Tom Lehmann/The Dough Doctor

1849

/ Re: Why Does This puff Up So

Do you know what was missing? No mention of the finished dough temperature. If the dough was ready to open in just 12-hours and the dough appeared to be gassy I'm putting my money on the horse that says your finished dough temperature was too high. The nearly 0.5% IDY didn't help matters any either. I'd suggest reducing the IDY to not more than 0.4%, adjusting the water temperature to give you a finished dough temperature of 75 to 80F, balling the dough immediately after mixing, lightly oiling the dough ball, placing it in an open bowl in the fridge for 2-hours, then covering/lidding the bowl, allow the dough to cold ferment for a minimum of 18-hours (not 12) but longer is better, bringing the dough out of the fridge for at least an hour prior to use (look for an internal dough ball temperature of 55 to 60F).

Tom Lehmann/The Dough Doctor

1850

/ Re: minimum time between balling and cooking

I was once asked this very question by a major box pizza chain, the answer was 1-hour. We mixed the dough at 95F, just barely balled it, after an hour it was opened into a skin, dressed and baked for our lunch. More typical time between balling and baking I would say is 24-hours. For me, using cold fermentation I normally use 48-hours as that is where my preference for crust flavor is at. I totally agree that there are many variables that can affect the time between balling and baking, some of those variables have to do with dough handling properties while other variables have to do with personal flavor preferences. For the shortest rest time between balling (assuming balling immediately after mixing) and baking formulate the dough with 2% compressed yeast (or equivalency in IDY or ADY), dough absorption about 60%, moderate protein content flour (11 to 12%), target a finished dough temperature of 95 to 100F, mix the dough to full gluten development, ball moderately loose, lightly oil the dough ball, it should be ready to open in 45 to 60-minutes. DO NOT complain to me about the flavor! ;D
Tom Lehmann/The Dough Doctor

1851

/ Re: Dough just won't come together? No gluten development?

Amount of protein present in a serving divided by the serving weight (in the same weight units) X 100 will give you a very rough estimate of the amount of protein in the flour. However, this does not address the issue of gluten forming quality of the protein. This is why it is also important to know what the intended use of the flour is. An example of this would be durum semolina flour, it can have a protein content of say 13%, the same as a high protein bread type flour but in application they perform very differently.

Tom Lehmann/The Dough Doctor

1852

/ Re: Crust Color Differences between Sauced and Unsauced Pizzas

Basically, it's just a difference in moisture content of the two types of sauce. Red sauce is, on average, about 90% water so as the pizza bakes the moisture is driven off of the sauce, the moisture laden air is cooler than the surrounding air so it settles down around the pizza, enveloping it in a cooling layer of moisture laden air, thus reducing crust color development. Whit sauce doesn't have this amount of water (at least mine don't) so this cooling effect is either diminished or not in play which allows the crust to begin developing color faster with more total color development. This DOES NOT apply for baking in an air impingement oven as the high velocity airflow in these oven remove the cooling, moisture laden air (that's one of the ways they are able to bake faster than a conventional deck oven).

Tom Lehmann/The Dough Doctor

1853

/ Re: Differences in dry active yeasts?

There are different types of dry active yeast, such as active dry yeast (ADY) and instant dry yeast (IDY) and even protected active dry yeast (PADY) and within the IDY spectrum there are various strains for specific applications such as high sugar, and freeze tolerant and a new one that is extremely temperature sensitive.

However, if you are asking if there is a significant difference in the same yeast types between the different manufacturers, the answer is no.

Tom Lehmann/The Dough Doctor

1854

/ Re: Why Does This puff Up So

If you will provide your exact dough formula by weight and bakers percent as well as your complete dough management procedure I might be able to determine just what the cause is.

Tom Lehmann/The Dough Doctor

1855

/ Re: Sifting and autolyse?

Gluten is formed when the wheat proteins glutenin and gliadin are agitated/mixed in the presence of water. Biochemical gluten development is the result of a number

of factors coming together including movement of the dough as it ferments and changes to the protein due to exposure to acids and enzymes from the yeast and byproducts of fermentation which all work together to develop gluten in either cold or warm fermented dough. Biochemical gluten development is by far, the oldest method for developing gluten, and I might add, still the best. The only reason why it isn't used more as the sole method for gluten development is due to the initial poor handling properties of the dough and the amount of time it takes to accomplish. When making yeast leavened products at home neither of these are typically an issue so the process is well implemented for home baking but it's a whole different story in a commercial setting.

Tom Lehmann/The Dough Doctor

1856

[**/ Re: Dough just won't come together? No gluten development?**](#)

I might suggest that you find out what flours are available to you and who the manufacturer(s) is/are and then contact the manufacturer directly and ask them what the protein content and typical application of those flours are. You should be looking for a strong bread type flour with 12 to 13% protein content. Even here in the U.S. we find that many flour suppliers are just merchants and know little about the flour they're selling, to them flour is just flour, we have six different kinds, which one do you want? Sound familiar? Many of us here at this web site will contact manufacturers directly with questions regarding flour or whatever when we have a question.

Tom Lehmann/The Dough Doctor

1857

[**/ Re: Flour Storage Products**](#)

Six gallons is about 50-pounds of water but flour has a much lower density so the volume needed for 50-pounds of flour is much greater.

Tom Lehmann/The Dough Doctor

1858

[**/ Re: Sifting and autolyse?**](#)

Cakes are a different story when it comes to sifting the flour as it helps to prevent lumps in the batter. Depending upon the type of cake being made some like to sift the flour and sugar together with the minor ingredients.

Tom Lehmann/The Dough Doctor

1859

[**/ Re: sourdough pizza acidity / ferment identification / criscito**](#)

What he said is correct, some sourdoughs are significantly less sour/tart than others. We did a study on this quite a few years ago where we made Panatone using a sourdough and it turned out quite good. It all has to do with the bacteria that you're culturing and how it's managed.

Tom Lehmann/The Dough Doctor

1860

/ [Re: crispy crumbly](#)

Crispy? Crunchy Chicago style thin crust? I can't say that I've ever seen those adjectives used in the same sentence with Chicago style thin crust. The four corners (party cut) are always the first to go as they have a little something that might be construed as being crispy, but the rest of the pizza is closer to a ravioli (it's that soft). That's not to say that a crispy Chicago style pizza isn't a good thing, and it can be made, but it really isn't a Chicago style pizza when made crispy/crunchy.

Tom Lehmann/The Dough Doctor

1861

/ [Re: Sifting and autolyse?](#)

Sifting of flour is helpful if you are bored and have nothing else to amuse yourself with or just need the exercise. It can also be helpful if you have infested (buggy) flour or potentially infested flour and really don't want to eat the little critters or need the additional protein they contribute to the flour.

As for the autolyse, it is still used by a lot of home bread and pizza makers, especially if you are making doughs with a high absorption.

Tom Lehmann/The Dough Doctor

1862

/ [Re: Dough deflates during cold fermentation?](#)

What was the finished dough temperature? A dough that is too warm will act exactly as you've described.

Tom Lehmann/The Dough Doctor

1863

/ [Re: Dunkin' Donuts Yeasted Donuts copycat](#)

The honey, or dried honey (a special product designed specifically for these types of applications, is used only in the glaze. For your glaze use 100% powdered sugar, add 10% boiling water and 5% dark colored honey. Heat to 115F and adjust the final viscosity through the addition of simple syrup (2-parts sugar and 1-part water boiled together until clear) add to the icing hot. If you need to adjust the honey flavor you can replace a portion of the simple syrup with honey. Too much honey will prevent the icing from setting up resulting in a wet, sticky donut. While yeast raised donuts don't typically contain eggs they can be used. Whole egg will make for a firmer donut crumb while egg yolk will make for a softer donut crumb. 2 to 5% egg can be used but remember to take the water content into consideration when calculating the dough absorption. Whole egg is 75% water and egg yolk is 50% water.

Tom Lehmann/The Dough Doctor

1864

/ Re: Dough handling+baking

Michael;

There are a number of good places to find pizza peels on the Internet but for your specific application you might want to see if you can get your hands on a piece of aluminum that you can shape into a simple pizza peel for transferring the pizzas from the counter to the oven. While not a permanent piece of equipment, you can also use a piece of corrugated cardboard too, or how about 1/4-inch thick plywood, or some tempered Masonite? You will want to have your peel about an inch wider X longer than the largest size pizza you plan on making and the handle only needs to be 6 to 8-inches long, use a sanding block or file to put a mild taper on the bottom of the leading edge and you're good to go. Remember, DO NOT wash it! Only wipe it down with a slightly damp towel. If you make one out of wood you might want to seal it using white mineral oil. We have discussed this a number of times here in previous posts.

There is a food show in Japan with an American Pavilion where pizza is demonstrated along with ingredients and supplies. If you want to get information on the show contact Steve Green at PMQ Magazine <steve@pmq.com>

Tom Lehmann/The Dough Doctor

1865

/ Re: Salt vs.Yeast

Given sufficient time either salt or sugar can kill the yeast but the greatest issue is that of damage to the yeast cells which can impair their ability to ferment a dough so what you get is inconsistent yeast performance, like previously said, not a big deal with home bakers and pizza makers but it can be a real game changer for any kind of bakery or pizzeria. Additionally, when the salt/sugar pulls moisture out of the yeast it is also removing some of the amino acid glutathione which is a reducing agent, making the dough softer and to some extent weaker. This may not be a problem for the home baker but again at the commercial level where failure is not an option it can be a game changer when the dough begins to collapse or otherwise fail out at 3 or 4-days refrigerated time.

Give the potential for damage to the yeast it is still not a good idea to allow the yeast to come into direct contact with the salt or sugar.

Tom Lehmann/The Dough Doctor

1866

/ Re: Dough just won't come together? No gluten development?

The first pizza slice being handled is definitely thicker across its entire cross section than the other pizza slices. The fact that it has also been docked might lead one to believe that it has been proofed prior to dressing and baking. This is common at pizzerias where they pre-open the skins which allows them to proof for a period of time prior to use.

Tom Lehmann/The Dough Doctor

1867

[/ Re: Dough handling+baking](#)

The foil is reflecting a lot of the heat away from the pizzas during baking so I don't recommend its use. 30-minutes is an unrealistically long baking time for anything but some of the pan pizzas, which I assume you are not making. You can bake directly on the steel unless you have some aversion to doing so, or you can bake the pizza on a piece of ovenable aka bakers parchment paper. It sounds like you may not be adding any sugar to the dough formula? If you can share your dough formula and tell us what kind of flour you're using it would also help.

Tom Lehmann/The Dough Doctor

1868

[/ Re: dialing in the dough](#)

Did I miss it or something? You don't ever mention anything about temperature in your post. Without temperature control you cannot have effective dough management. you can adjust the yeast level up or down but unless you can achieve effective dough management inconsistency will rein supreme in your land. Forget about the ambient humidity, instead concentrate of finished dough temperature, trying to achieve a finished dough temperature in the 75 to 80F range is a good starting goal. Do this by adding flake or shaved ice to the dough water to get a temperature of 65F. For dough mixing use the delayed oil mixing procedure and assuming (we all know what that means) you are using a 60 or 80-quart planetary mixer with a reverse spiral dough arm you should put the water in the bowl first, followed by the flour then the remainder of the dry ingredients, mix at low speed just until you don't see any dry flour in the bowl (about 1.5 to 2-minutes, add the oil and mix another minute in low speed, then mix 8 to 10-minutes at medium speed or just until the dough takes on a smooth, satiny appearance. Measure the finished dough temperature. Take the dough directly to the bench, do not "pass go" do not collect \$200.00, immediately scale and ball, lightly oil each dough ball, place into your individual containers, leave the lids off for at least 2-hours before lidding. Make sure you get the entire dough processed within 20-minutes, this is an important step. This should give you a dough that will be good to use over a 3 to 4-day period with the "sweet spot" at about 48-hours. To use the dough, remove from the cooler, allow to temper AT room temperature until the internal dough temperature reaches 50F, you can then begin using the dough, it will remain good to use for the next 2 to 3-hours.

An even better method is to place the dough balls onto aluminum sheet pans and cover each pan of dough balls with a food contact approved plastic bag, place the pans of dough in a wheeled rack in the cooler, no need to cross-stack or lid anything. Follow the same procedure for using the dough. We have discussed this procedure here a couple of time in previous posts.

Tom Lehmann/The Dough Doctor

1869

[/ Re: Smiling With Hope Pizza Closing for a bit](#)

Walter;

Wishing you a a very speedy and complete recovery!
Tom Lehmann/The Dough Doctor

1870

/ [Re: Oil in 00 dough](#)

If you want to see the delayed oil addition mixing method just go to my web site <doughdoctor.com> and watch my dough making video series. You would be surprised at how few pizzeria operators actually understand very much about the technology involved in mixing dough and making pizza in general. We are trying to educate operators and we're succeeding at it too, just look at the knowledge here in dough mixing as well as at the PMQ web site <www.pmq.com>, it just takes time.

Tom Lehmann/The Dough Doctor

1871

/ [Re: Dough help, still not quite right](#)

Yep, just make sure you oil the dough balls lightly prior to placing in the bags, then just grab a bag as you need it just as you do when using dough boxes. From the time you open the first dough ball the rest will remain good to use for for 2 to 2.5-hours on average.

Tom Lehmann/The Dough Doctor

1872

/ [Re: NY Style Dough Too Crispy](#)

Based on a 20 degree L. malt powder use 0.25% to replicate commercial malting of the flour then add whatever amount of non-diastatic malt powder or syrup you need to achieve the desired crust color.

Tom Lehmann/The Dough Doctor

1873

/ [Re: Instant Sourdough Yeast](#)

Sourness from the cultured rye flour (it's quite acidic) plus fermentation from the yeast (remember it's accelerated due to the increased acidity) would create accentuated sourness over time. ?

Tom Lehmann/The Dough Doctor

1874

/ [Re: Instant Sourdough Yeast](#)

IF the cultured rye flour is indeed inactive as stated, it's my guess that what has been observed is yeast fermentation from minute particles of the IDY which would be impossible to identify much less sort out of the mixture and the acidity of the cultured rye flour would certainly help to accelerate any yeast activity. Just my

"SWAG". :)

Tom Lehmann/The Dough Doctor

1875

/ Re: Instant Sourdough Yeast

Please send me your e-mail address at <thedoughdoctor@hotmail.com> and I'll copy you on my correspondence with the National Accounts Manager, Sandi Cazalet (she was at P.E.).

Tom

Lehmann/The Dough Doctor

1876

/ Re: Instant Sourdough Yeast

I've contacted Lesaffre and got the answer directly from the manufacturer. It contains no viable lactobacillus. It is indeed a mixture of inactive cultured rye flour and IDY.

Tom Lehmann/The Dough Doctor

1877

/ Re: NY Style Dough Too Crispy

That's a lot of baking, fine if you want it crispy but if you want the softer (fold-able) texture common to the N.Y. style pizzas you will need to bake at a higher temperature for a shorter time. This may not be possible in your oven so I would suggest adding 2% sugar to the dough formulation which will help to reduce the baking time thus giving you a softer, more pliable finished crust. One other thing, you might also try increasing the dough absorption in 2% increments as I think you might be a bit low on absorption considering the durum flour and the spelt in the dough formulation.

Tom Lehmann/The Dough Doctor

1878

/ Re: Flour

Typically, thin crust pizzas are made using a higher protein content flour than thick crust/pan style pizzas are made from. That might have been the difference?

Tom Lehmann/The Dough Doctor

1879

/ Re: Dear Dough doctor..... pizza dough leftovers

Pizza, pretzels, bagels, French bread/baguette, bread sticks, and croutons can all be made using the very same basic dough formula. The only minor difference might be an adjustment in dough absorption if your pizza dough has an absorption over 55%. For home use in making croutons just form the dough into a ball, place it onto

a lightly greased sheet pan, cover it with a suitably large bowl to prevent drying and allow it to proof for about 2-hours or until it at least doubles in size, then dock the dough by cutting a couple slits across the top, spray it with water and bake it at 400F until golden brown, remove from oven, cool on rack, when cooled place in the fridge overnight (place in a paper bag for best results). Then cut into 3/8 to 1/2-inch thick slices, cut each slice into 1/2-inch square cubes, transfer the cubes to a sheet pan and place in a 350F oven to toast lightly. For savory croutons place into a bowl, spray with oil (lightly) add savory as desired, cover the bowl and shake to coat the cubes. Pour out onto a cookies sheet and place back into the oven at 350F for a few minutes (just to heat the croutons up, then immediately transfer to an air tight container for storage. Store at room temperature.

Tom Lehmann/The Dough Doctor

1880

/ [Re: Instant Sourdough Yeast](#)

It has to do with the U.S. labeling regulations, the "cultured rye flour" is the flavoring and the fact that the LAB is shown in brackets immediately following the cultured rye flour means that these are the ingredients used to make the cultured rye flour. You will see similar things on the label of various bakery products such as where lecithin is shown as an ingredient immediately followed by brackets showing the source of the lecithin.

Tom Lehmann/The Dough Doctor

1881

/ [Re: Flour](#)

If it's something that you just add water to to make a pizza dough, it really isn't "flour", instead it's what is referred to as a "mix", in this case a pizza dough mix because it contains other ingredients than just flour. While they may not want to share with you the amounts of those other ingredients they should be willing to tell you what those other ingredients are.

Tom Lehmann/The Dough Doctor

1882

/ [Re: Instant Sourdough Yeast](#)

That would be the cultured rye flour.

Tom Lehmann/The Dough Doctor

1883

/ [Re: Flour](#)

Since none of those you mentioned contains any gluten forming proteins the short answer is no, they will not work as a sole flour for making pizza crust, but for the most part they could potentially be utilized as a part of the flour blend, making a composite flour. In this capacity they might be used to replace up to about 20% of the total wheat flour.

Tom Lehmann/The Dough Doctor

1884

/ [Re: Instant Sourdough Yeast](#)

The "cultured rye flour" is the tip off that it's a dry, inactive sourdough material that is being added. The ingredients following it in brackets are the ingredients of the "cultured rye flour".

Tom Lehmann/The Dough Doctor

1885

/ [Re: Dough just won't come together? No gluten development?](#)

Mineral yeast food was once widely used by all bakeries across the U.S. but now most large retail bakeries as well as essentially all wholesale bakeries have eliminated using it as it has little demonstrated impact upon the dough or finished product. A typical mineral yeast food consists of calcium salts (the most effective ingredient), ammonium salts (this is where M.Y.F. got its name) and usually some type of oxidizing agent (used to be bromate) but now widely discontinued. Bakers have, for the most part, replaced M.Y.F. with calcium sulfate at 0.25 to 0.5% flour basis.

Tom Lehmann/The Dough Doctor

1886

/ [Re: Dough Knead problem](#)

Yael;

I agree with you on the absorption as the dough does appear to be under absorbed, with that in mind, since we don't know anything about the flour, I'm beginning to wonder if this might be one of those flours that are milled to a higher than normal level of starch damage? This would explain the abnormally high dough absorption. If my suggestion to ferment it for a couple of hours is followed this might provide some insight. If the dough softens excessively during this fermentation period the problem is most likely one of high starch damage, if it doesn't it might be a case of just poor gluten quality, remember, this is a soft wheat flour and soft wheat flours are not known for their gluten forming quality characteristics, hence their main application in cakes, cookies and pastries.

Tom Lehmann/The Dough Doctor

1887

/ [Re: Dough Knead problem](#)

The dough looks to be very rough to me. If you are sure of your scaling weights I would suggest allowing the dough to ferment at room temperature for about 2-hours (maybe a bit longer), then turn it out of the bowl and try kneading it at that time. If this produces a better product you might then want to look at testing with a higher yeast level.

Tom Lehmann/The Dough Doctor

1888

[/ Re: a two-hour pizza](#)

There was recently some discussion on making a sourdough starter and then drying it to be added to a dough at a later time as a flavoring material. This would work great using the poorboy's sourdough, then you can store the dried material in the fridge to be added to your emergency doughs . We have been doing this for nearly 30-years now in commercial crust production where the dough is never really fermented but yet we still want to have a decent crust flavor. As an added plus....it's a lot cheaper than what they are asking for the sourdough yeast product! Tom Lehmann/The Dough Doctor

1889

[/ Re: Need a digital scale: looking for best value..is a Taylor what I need?](#)

KD-8000 is also my preference in scales. It's a great scale and uses common flashlight batteries. Cost is now about \$45.00 but worth every penny. We also use it when making jerky and when canning. Tom Lehmann/the Dough Doctor

1890

[/ Re: Dough just won't come together? No gluten development?](#)

Ascorbic acid is used in ppm (parts per million), a typical use level would be between 90 and 180 ppm. Tom Lehmann/The Dough Doctor

1891

[/ Re: a two-hour pizza](#)

The size of the mixture has little to do with it, over a 24-hour period of time at ? temperature the yeast will have consumed all of the available nutrient available to it, once this happens it will begin to cannibalize itself to ? extent. due to the great number of unknowns it is safer to assume the yeast is spent and not include it in the yeast percentage. Tom Lehmann/The Dough Doctor

1892

[/ Re: Activating CY](#)

"Proving the yeast" is rarely done in a pizzeria setting and never done in a commercial setting here in the U.S. I Europe the practice is more common. Tom Lehmann/The Dough Doctor

1893

/ [Re: a two-hour pizza](#)

I think the "after taste" you are referring to is just a lack of flavor in the finished crust, most people relate it to a "starchy" taste. If you want to develop a bit more flavor and stay with a no-time type of dough process you might try using a "poor boy's sourdough". The day before you intend to make pizza, into a cereal bowl add 25-grams of flour and 25-grams of water and 1/5 to 1/4 of your total SAF IDY. Stir it together, drape it with a piece of plastic wrap and allow it to ferment at room temperature until you are ready to make pizza on the following day. To use, just pour it into your dough water but remember to reduce the dough water by 25-grams (which is already in the sourdough), use the full complement of yeast as that which is in the sourdough is pretty well shot.

If you like the flavor contribution you can experiment with different amounts of the sourdough addition.....A word of CAUTION! This can become addictive! :-D

Tom Lehmann/The Dough Doctor

1894

/ [Re: Emergency dough in a Blackstone oven](#)

If you provide your dough formula I can convert it to a short time dough for you.

Tom Lehmann/The Dough Doctor

1895

/ [Re: a two-hour pizza](#)

No, just double the amount that you would use for a "normal" fermentation time.

Tom Lehmann/The Dough Doctor

1896

/ [Re: Activating CY](#)

Peter;

This is a good example of where IDY is suspended in warm water and allowed to hydrate/activate prior to addition to the dough as it covers both bases for hand and machine mixing of the dough.

Tom Lehmann/The Dough Doctor

1897

/ [Re: a two-hour pizza](#)

For an "emergency" dough such as you are making double the yeast, cut the sugar in half, and adjust the finished dough temperature to 90 - 95F, immediately after mixing scale and ball, allow the dough to ferment for 1.5-hours, then open into skins, dress and bake. Why the double amount of 60-L malt? If it was flavor you were going for you can go with 4 to 5% non-diastatic malt for a malted milk like flavor in the finished crust.

Tom Lehmann/The Dough Doctor

1898

/ Re: Dough just won't come together? No gluten development?

While the vitamin C tablets are essentially the same as those intended for use as a dough strengthener, there is one significant difference, the vitamin C that you buy to take as a vitamin supplement is not micro-encapsulated so it reacts very fast in the dough, it has pretty well fully reacted by the time the dough comes off of the mixer while the micro-encapsulated form intended for use in strengthening dough doesn't fully react for at least an hour, maybe a little more.

Tom Lehmann/The Dough Doctor

1899

/ Re: Why is the humidity higher in plastic dough boxes??

Because in the box the humidity cannot be dissipated as it is in the house. Additionally, the dough balls gain temperature and this too cannot be dissipated due to the insulating properties of the box.

Tom Lehmann/The Dough Doctor

1900

/ Re: Why is the humidity higher in plastic dough boxes??

Heat can very easily pass through cling wrap as it is a very poor insulator as insulators go.

Like I said previously, the environment will pretty well stabilize at about 85% R.H. without any apparent condensation, now, if you were to place that box into a cooler, as the walls of the box get colder the moisture in the box will begin to condense on the colder surface of the box walls and eventually drip onto the dough balls creating a wet, sticky mess at the time of opening them into skins.

Tom Lehmann/The Dough Doctor

1901

/ Re: Dough just won't come together? No gluten development?

Something else to consider is that the garlic you are adding is a reducing agent (it weakens the dough) so you might want to run a test without the addition of the garlic powder, also you are adding 3% potato flakes, check the ingredient label on the box to see if the potato flakes are sulfited (some form of sulfite, like sodium metabisulfite, would be shown as an ingredient). Sulfites are added to potato flakes to help keep them white and prevent them from turning darker in color during processing, sulfites are also a reducing agent so you want to make sure you are using a product without added sulfites. While on the topic of potato flakes, 3% potato flakes will account for about 5% absorption so your dough with 56% absorption and 3% potato flakes is going to handle more like a dough with only 50 to 51% absorption which may account for the crust not rising and baking properly, especially around the edge.

Tom Lehmann/The Dough Doctor

1902

[/ Re: Why is the humidity higher in plastic dough boxes??](#)

I'm sorry but I don't understand "the warm air from the dough did not escape into the box". Cling wrap will allow for transmission of moisture. Just wrap something in it and place it in the freezer for a couple of months.

I don't know what your finished dough temperature was so I cannot comment but it seems to me that it might be easier to just target your finished dough temperature to be the same as the room temperature, but do keep in mind that due to the heat of metabolism the dough is warming at the rate of approximately 1F per hour which can also lead to increased humidity (warm air holds more moisture than colder air). With a RH of about 75% the dough is usually pretty easy to handle but above that things begin to get a bit dicey.

Tom Lehmann/The Dough Doctor

1903

[/ Re: Why is the humidity higher in plastic dough boxes??](#)

The increase in relative humidity (RH) that you are seeing is coming from your dough as it is giving up moisture to the warm air surrounding the dough balls. When you put the dough in the fridge you cooled the box as well as the air in the box but the dough balls were warmer than the air so the moisture given up by the dough condensed on the inside of the box. The air will ultimately stabilize when the RH reaches about 85 to 87%. Remember, anytime the surrounding air temperature is cooler than the dough temperature you are going to get some condensation to a greater or lesser extent.

This is why we always want to cross-stack/or leave the boxes open for a period of time when using dough boxes in the cooler/fridge as it reduces/eliminates the condensation problem.

Tom Lehmann/The Dough Doctor

1904

[/ Re: Activating CY](#)

Compressed yeast is an agglomerate of billions of yeast cells, it is not melted, nor is it dissolved, it is suspended in water (that's the correct term).

While yeast and salt can be put together in water it is generally not a good idea since if you get too much salt in the water it will damage the yeast impairing its ability to ferment. The same can be said for sugar too, so, while not necessarily deleterious to the yeast it is not a good idea to put the salt and yeast together in the water. When making sponges for making bread it is common to put salt into the sponge to help control the rate of fermentation of the sponge. A sponge for bread making will typically contain 60 to 80% of the total flour, all or most of the yeast, salt can be from none to 2% of the total flour weight and water at 50 to 55% of the weight of the flour in the sponge.

Tom Lehmann/The Dough Doctor

1905

[/ Re: Wooden pizza peel in WFO?](#)

What you are experiencing is called "raising the grain", we need to do this when refinishing gun stocks too. We wet the wood and allow it to dry, then using 220 grit or finer sand paper lightly sand off the "whiskers" as they are called, then repeat again until no more whiskers are raised, it's then time to apply any stain (only on the gun stocks, not on a peel) and the final finish which in your case should be mineral oil.

Tom Lehmann/The Dough Doctor

1906

[/ Re: Activating CY](#)

Rolls is absolutely correct, one thing I might add though is you are mixing your dough totally by hand it is easier to incorporate the compressed yeast (CY) if you first suspend it in the dough water. Otherwise, just crumble it on top of the flour and begin mixing.

Tom Lehmann/The Dough Doctor

1907

[/ Re: Dough just won't come together? No gluten development?](#)

Are you cross-stacking the dough boxes? If you don't cross-stack you will get condensation in the boxes which can raise havoc with opening the dough balls into skins. With cold fermentation I think the best flavor is had at between 48 and 72-hours.

Tom Lehmann/The Dough Doctor

1908

[/ Re: Dough vs peel...Pros vs well, me](#)

Most of my "go to" pizzas are N.Y. style and I use 10-ounces of dough for a 12-inch pizza which gives a dough loading of 0.08849 (ounces per square inch).

Tom Lehmann/The Dough Doctor

1909

[/ Re: Wondra Flour for Pizza Crust Recipe?](#)

We did look at it at one time but since it is really not intended for pizza application we did not pursue any further evaluation. Our impression of the flour was that it was designed to be more of a "chef's" flour, for general use in the kitchen but not specifically as a baking flour. There were just too many other flour options that worked just as well and at a lower cost too.

Tom Lehmann/The Dough Doctor

1910

[/ Re: Dough vs peel...Pros vs well, me](#)

You say "as thin as possible", there is such a thing as getting the skin too thin. Remember, thin does not equate to crispy. Thin equates to a finished crust that is crispy only for the first minute or two after removing the pizza from the oven, it then quickly picks up moisture from the air as well as the toppings and becomes quite soft, sometimes even tough and chewy.

Tom Lehmann/The Dough Doctor

1911

/ Re: Correct way to make pizza?

Additionally, you do not want to fully develop the gluten, instead, mix the dough JUST until it takes on a smooth, satiny appearance, then as the dough is fermented biochemical gluten development will take care of the gluten development for you providing a dough with good extensibility characteristics, ready to be opened into a pizza skin for dressing and baking. If you are planning to cold ferment the dough for about 24-hours you can go with as much as 1% fresh yeast/compressed yeast/CY.

Adjust the water temperature to give you a finished dough temperature of 75 to 80F/23.8 to 26.6C. Scale and ball the dough immediately after mixing, lightly oil the dough ball and cold ferment it for at least 24-hours. I like to cold ferment my dough balls using the plastic bag method (discussed here in numerous posts), then remove the dough from the fridge and allow it to temper AT room temperature for about 60-minutes before turning it out of the bag onto a floured surface and opening it into a skin ready for dressing and baking.

Tom Lehmann/The Dough Doctor

1912

/ Re: Dough just won't come together? No gluten development?

The dough is SUPPOSED to tear pretty easily when it is correctly mixed. Pizza doughs are UNDER MIXED by design. With this said, biochemical gluten development takes place during the cold fermentation period giving the dough a very fine, well developed gluten structure that has very extensible characteristics. If you take a dough ball that has been cold fermented for at least 24-hours and stretch it in your hands you should be able to see a very nice, strong but yet extensible gluten film. As for the dough balls, after the cold fermentation process they should be "just kissing" as shown in your picture of the boxed dough balls. Is it possible that you are looking at this all wrong?

Tom Lehmann/The Dough Doctor

1913

/ Re: Wondra Flour for Pizza Crust Recipe?

I think it's a combination of two things, the Wondra Flour is milled very fine and it is "instantized", they do this by a process of wetting the flour and then drying it again, this procedure allows the flour to hydrate more quickly.

Tom Lehmann/The Dough Doctor

1914

[/ Re: Dough vs peel...Pros vs well, me](#)

Wrinkling is generally caused by the dough contracting, snapping back. A major cause of this is insufficient dough fermentation. This might be an area you would want to investigate further in your testing.

Tom Lehmann/The Dough Doctor

1915

[/ Re: difference between IDY and ADY \(glutenboy method vs what Gemignani says\)](#)

DOP;

SAF/Red Star/Lesaffre Yeast recommends that IDY be suspended in 95 to 100F water for addition when very short mixing times (under 5-minutes) are employed.

Tom Lehmann/The Dough Doctor

1916

[/ Re: Wondra Flour for Pizza Crust Recipe?](#)

Wondra Flour has a protein content averaging about 10.5% and is available both malted or un-malted so you will need to read the label to see if it is malted or not if that's important to you. As for formulation, any decent dough formulation should work OK but owing to the low protein content keep the finished dough temperature between 75 and 80F while keeping the total dough fermentation on the short side. I would expect that the total dough absorption would be in the 56 to 58% range. Wondra Flour is designed to hydrate quickly so it may look different in the bowl at first.

Tom Lehmann/The Dough Doctor

1917

[/ Re: Dough just won't come together? No gluten development?](#)

To begin can you share a picture of your mixer and the dough agitator with us? Also, what is the bowl capacity and what is your flour weight? How many speeds does your mixer have? At what speed are you mixing the dough?

Tom Lehmann/The Dough Doctor

1918

[/ Re: Pizza shops handling raw sausage bare handed?](#)

Just washing the hands isn't enough. you have to scrub with a hand brush and that won't even thoroughly clean the hands. Just look at your hands under a magnifying glass to understand why. Gloves make it a lot easier to clean and sanitize the hands which is why any USDA inspected processing/manufacturing facility requires that all line personnel upstream from packaging wear gloves.

Tom Lehmann/The Dough Doctor

1919

/ Re: Pizza shops handling raw sausage bare handed?

It's all the cracks and fissures in our skin and under the fingernails that make our hands so difficult to clean thoroughly. Gloves eliminate 95% of that making the hands much easier to clean. Don't forget to sanitize each time after a thorough washing too, gotta do both. ;D

Tom Lehmann/The Dough Doctor

1920

/ Re: Pizza shops handling raw sausage bare handed?

The only benefit that gloves provide is that your hands can be more thoroughly cleaned when wearing them. If not used properly they are of no value.

Tom Lehmann/The Dough Doctor

1921

/ Re: Pizza shops handling raw sausage bare handed?

The issue isn't one of contaminating the sausage as the oven should take care of any contamination but instead it's an issue of cross contamination. Any ground meat is more prone to contamination than sliced meat but even that doesn't address the cross contamination issue. Would you ever consider putting raw sausage on a salad? Of course not but that's essentially what happens when you handle raw meat/sausage and then go directly to prepping a salad without removing the gloves or thoroughly (operative word being "thoroughly") washing ones hands.

Tom Lehmann/The Dough Doctor

1922

/ Re: Bulk Cold Ferment vs Dough Ball Cold Ferment

It all depends upon the size/weight of the dough and how well you are capable of consistently achieving the targeted finished dough temperature and to a lesser extent how consistent the room temperature will be. Since the dough is much more prone to change in the bulk form I would have to say that anytime you are bulk fermenting you are going to experience significantly more variability in the finished dough as well as the finished pizzas.

tom Lehmann/The Dough Doctor

1923

/ Re: Dunkin' Donuts Yeasted Donuts copycat

The last turn brings the smooth side back to the top and the rough side to the bottom so as the donuts are lifted out of the fryer the rough side will drain rather than hold the oil resulting in less fat absorption.

I just realized too that I forgot to add the whole eggs to the dough formula.

Typically 8 to 10% whole egg is used in the dough formulation. remember that whole egg is 75% water when calculating the dough absorption.

Tom Lehmann/The Dough Doctor

1924

[/ Re: Starter timing confusion](#)

After the poolish has matured to the desired level add it to the dough side ingredients but keep in mind that an 18-hour poolish is a long fermentation time for a poolish so in all probability the flour contained in the poolish will be "shot" as the protein will be badly degraded so I suggest not using more than 10 to 20% of the total flour in the poolish. Add the poolish to the dough ingredients as you would any other ingredient but make sure to take the water content into account when calculating the total absorption, you can then manage the dough in your usual manner.

Tom Lehmann/The Dough Doctor

1925

[/ Re: Dunkin' Donuts Yeasted Donuts copycat](#)

Donuts are fried in one of two ways, surface frying which requires that the donut be flipped/turned so as to fry both sides. The other is to fry the donut submerged using a submersion screen on top of the donut. Submersion limits donut expansion but can contribute to uniformity of shape. A good example of submerged donuts is that of the Bismark (not the battleship, the jelly filled donut). Most Bismarks are submersion fried since the white ring due to dough expansion during surface frying will be a weak spot for the jelly to leak through during injection.

My first shop started out as a donut shop for several years until donuts became a bad thing so we transitioned into a pizza and sandwich shop. I was also a training consultant for Pillsbury when they acquired the Mr. Donut chain.

2% shortening is correct but the range can go as high as 5%.

On average, your donuts should weigh the same coming out of the fryer as the dough did when going in. Total fat absorption will be some place between 16 and 20%.

Tom Lehmann/The Dough Doctor

1926

[/ Re: Dunkin' Donuts Yeasted Donuts copycat](#)

Begin your experimenting with 10% sucrose. The type of flour to use will be a strong bread flour with 12.8 to 13.2% protein content. Yeast will be about 3% CY with salt at 2%, shortening at 2% and water at about 54%. Mix to a smooth dough plus two minutes. Finished dough temperature should be 80 to 82F. After mixing allow the dough to bulk ferment for 1-hour, then divide into smaller manageable pieces and form into loaves, not balls as you will be rolling it out into a rectangular shape later on. Set the dough loaves aside, cover with a sheet of plastic and allow to ferment again 45 to 60-minutes. Exact time may vary. Roll out dough to 3/8 to 1/2 -inch thickness and place onto an oiled pizza screen for final proofing. Proof at 85 to 90F with 75% relative humidity. Proofing time will be about 45-minutes. Fry at 365F for about 20-seconds on the first side, turn and fry about 55-seconds on the second side, turn again and fry about 30-seconds before removing from the fryer.

Place onto a screen to drain. Allow donuts to cool about 1-minute before icing, this is important as the heat of the donut helps the icing flow over the donut. Use the hand dip method for icing the donuts.

Tom Lehmann/The Dough Doctor

1927

[/ Re: How long can we store the dough in the fridge ?](#)

How was the dough bulk fermented? Plastic bag, lightly covered bowl, uncovered, tightly lidded, other?

Tom Lehmann/The Dough Doctor

1928

[/ Re: What is the point of ADY when IDY appears to be superior?](#)

SAF IDY contains sorbitan monostearate and ascorbic acid as "added ingredients" in their commercial packages of IDY. The sorbitan monostearate is used to help with rehydration of the dry yeast and the ascorbic acid is added to counter the slight reducing (dough softening) effects of the glutathione present with all forms of dry yeast.

Tom Lehmann/The Dough Doctor

1929

[/ Re: How and when to turn the pizza in the WFO oven ?](#)

Remember what I was once told: "Every oven is a law unto itself and only itself" Literally translated: Every oven is different. You will need to experiment to find out what works best for YOUR pizza, made by YOUR dough formula, managed by YOUR procedure, in YOUR oven. I can sat this though, make sure you allow the pizza to set, undisturbed after peeling it into the oven, long enough for it to release cleanly from the deck. Failure to do so will result in tearing the skin/crust as you try to move it leaving a pile of toppings on the deck while you're busy creating some new four letter words. Think of it as you would when searing a steak.

Tom Lehmann/The Dough Doctor

1930

[/ Re: Critique my dough/process - first time "experimenting"](#)

Without at least the sauce on the skin it is literally impossible to learn anything from baking an un-topped skin. If you had flipper the crusts over after about 15-seconds and then baked for another 15 to 20-seconds you would have made pita not pizza. Pita is baked at 750 to 900F for 25 to 30-seconds. Just for the record, pita and pizza can be made from the same basic dough formula, (flour: 100%/Salt: 2%/ CY: 1%/Water: 52%/ Oil: 1% optional) it's all in how the dough is handled and baked.

Tom Lehmann/The Dough Doctor

1931

/ Re: Proper Quantity of yeast

No, that's used for bread doughs. The dough should not show signs of collapse and when you begin to open it the dough will not fight you (too elastic).

Tom Lehmann/The Dough Doctor

1932

/ Re: Question about streamlining dough process

In one word...no. At 50F you will still get fermentation taking place.

Tom Lehmann/The Dough Doctor

1933

/ Re: What is the point of ADY when IDY appears to be superior?

I agree with Craig, especially when you consider that you can pitch both and go with a natural starter if you're so inclined and still make a great product.

Tom Lehmann/The Dough Doctor

1934

/ Re: Proper Quantity of yeast

The highest I ever go with the salt is 2.5% and when fermenting in a similar manner I use 0.15% CY. If you go too low on the yeast you run the chance of not having sufficient leavening power to support the weight of the topping ingredients and the pizza collapsing during baking resulting in a difficult to bake crust with the eating properties of shoe leather.

Tom Lehmann/The Dough Doctor

1935

/ Re: Question about streamlining dough process

Some pizzerias will manage their dough directly out of the walk-in cooler but to do so the type of pizza being made must accommodate dough absorptions in the 60% range and a dough sheeter will be required to open the dough into a skin. Where hand forming methods are use (the majority of pizzerias) the dough is brought out of the cooler, and allowed to warm to 50F before being used, once the dough warms to 50F it will remain good to use for up to a maximum of 3-hours. Any dough not used in this period of time can be opened into skins, placed onto screens and then into a wire tree rack, placed in the cooler and after 30-minutes covered with a food contact approved plastic bag and saved for use as pre-opened skins during the next rush period. To use these pre-opened skins they will turn them off of the screen and finish opening them to full size or just touch them up a bit before dressing and baking.

A few stores will also convert any unused dough balls into bread sticks, garlic knots, etc. These will be par-baked and only require a short finish bake at the time of final use.

Tom Lehmann/The Dough Doctor

1936

/ Re: What is the point of ADY when IDY appears to be superior?

IDY isn't "stronger" than ADY, it is just more concentrated as it has a lower total moisture level.

As for hydrating/activating the ADY prior to addition to the dough, it has been proven scientifically many times that overall yeast performance as well as dough consistency are improved when the ADY is hydrated in 100F water prior to addition. IDY was developed specifically for addition directly to the dough without any pre-hydration/activation. Studies that I did at AIB many years ago showed that IDY has a shelf life of up to two years while ADY has a projected shelf life of 12-months. Because of the fact that it doesn't need activation and its better shelf life properties IDY had gained a lot of popularity for use in goodie bags as well as complete pizza mixes.

Tom Lehmann/The Dough Doctor

1937

/ Re: CY % in Poolish vs. Final Dough????

If you are making a "master poolish" 20% would be about right but if you're making pizza at home why not put all or at least half of the yeast in the poolish?

Tom Lehmann/The Dough Doctor

1938

/ Re: Best & Fast way to prep chicken breast toppings?

As I was reading your question poaching them was exactly what I had in mind.

Tom Lehmann/The Dough Doctor

1939

/ Re: How long can we store the dough in the fridge ?

Without knowing the bulk dough weight as well as the finished dough temperature and how it's being stored in the fridge it's impossible to answer your question outside of a SWAG.

IF your dough size is small, under 1Kg. in weight, there is little to no difference between fermenting the dough in bulk as opposed to fermenting it in scaled dough ball form. If your total dough weight is at or under this weight the finished dough temperature and how you are storing the dough will be the determining factors as to how long the dough can be held in the fridge.

Need more information.

Tom Lehmann/The Dough Doctor

1940

/ Re: Pedantic Question

The percent dough absorption used will be determined by both the flour absorption properties as well as the style of pizza you are making. If by YOUR dough management procedure YOU find that you can open the dough balls easier using a slightly lower dough absorption, by all means do so. As for dough management with high absorption doughs, if you want you can go with an autolyse to give you a slightly easier dough to handle at the same total dough absorption. If you are looking for a dough management procedure that works well with dough absorption values up into the mid to high 60% range I can send you my Dough Management Procedure that has a very long standing track record of giving very manageable doughs for both hand and machine opening without being sticky on the peel (if you do your part). To get a copy of my Dough Management Procedure just e-mail me at <thedoughdoctor@hotmail.com> and ask for my Dough Management Procedure.
Tom Lehmann/The Dough Doctor

1941

/ Re: Low Calorie Pizza

Low calorie for pizza is all about the toppings. Here is a good dough formula:
Flour: 100% whole white wheat flour.
Salt: 1.75%
Oil: 1%
IDY: 0.375%
Water: 67% (variable)

For the toppings:
Ripe tomato slices for the sauce.
Light on the cheese.
Concentrate more on vegetable toppings.
For a meat topping consider skinless chicken breast.
NOTE: Check at your local supermarket to see if they have a Mozzarella cheese analog from Galaxy Nutritional Foods. This is a soy tofu based product with "0" cholesterol and when blended 50/50 with your regular cheese makes a decent healthy cheese alternative.
Tom Lehmann/The Dough Doctor

1942

/ Re: Did I let my dough proof too long?

While the dough was over fermented, it was not over fermented to the point of full collapse so it appears that there was still sufficient strength left to support the weight of the toppings, that being said, fermentation develops flavor in the finished/baked crust so it would be expected to be flavorful but difficult to handle the dough. From the looks of the crumb structure it appears to be in the process of collapsing as evidenced by the thick, heavy cell walls, a reduction in yeast level should still give a good flavor but with improved handling properties and a finer, more porous finished cell structure in the crust which will most likely result in a crispier crust too.
Tom Lehmann/The Dough Doctor

1943

/ Re: Pedantic Question

The idea with the bags is to eliminate all head space within the bag, not to reduce drying but to eliminate condensation which will form within that head space. Pull the bag into direct contact with the dough ball, give it a spin to form the pony tail and tuck it under the dough ball as you place it in the cooler/fridge.

If you make a dough without yeast and allow it to set at room temperature for 24-hours you will have an un-risen dough, without any yeast after the 24-hour period. I've done it before, not on purpose, but it still came out the same way.

Tom Lehmann/The Dough Doctor

1944

/ Re: Lehmann's naturally leavened recipes

Your dough will exhibit a pronounced tendency to stick to an un-seasoned screen, pan or disk. To season your screen wipe it with salad oil and place in the oven at 425F. for about 20-minutes, remove, allow to cool for a couple minutes and repeat. After the second application you should see the aluminum taking on a slight amber tint, this will continue to darken with use. DO NOT wash any seasoned pan or screen as it can result in the seasoning coming off like a bad sunburn. Instead, if they ever need to be cleaned because debris is beginning to clog the screen openings, turn your oven to its highest setting and bake the screen for 30-minutes, then you can just tap the screen to dislodge most of the offending material and at the very worst it will now be easier to clear the openings using a common table fork.

Tom Lehmann/The Dough Doctor

1945

/ Re: Bakers Percent/Formula Question

Could have been a typo (maybe they meant to show "1.5%") it's close to 1.47%? In any case, don't sweat it, go with the calculations.

Tom Lehmann/The Dough Doctor

1946

/ Re: Did I let my dough proof too long?

Agreed, the dough really appears to be over fermented.

The only time I ever go over 1% compressed yeast is when I'm making an emergency dough for use within about 2-hours. You don't indicate what kind of yeast you are using but even if it's compressed it's too much and if ADY or IDY wwaayy too much for what you are doing.

Tom Lehmann/The Dough Doctor

1947

/ Re: Scaling dough recipe up

Allow me to elaborate on my previous response.

The ingredient amounts can very easily be scaled up or down to give you any size dough you wish to make but the issue is in the dough management procedure (unknown to me at this time), there are some dough management procedures that just do not lend themselves to being scaled up into a production size dough as they will not be able to provide the overall dough tolerance and consistency needed in a pizzeria operation where failure or inconsistency is not an option. If you want to see a copy of a bullet proof dough management procedure that you can use as a template for developing your own effective dough management procedure feel free to contact me at <thedoughdoctor@hotmail.com> and I'll be glad to send you a copy. Just ask for my Dough Management Procedure.
Tom Lehmann/The Dough Doctor

1948

/ [**Re: Bakers Percent/Formula Question**](#)

Yael;
You're a pretty smart "cookie"! ^^^
You nailed it!
Tom Lehmann/The Dough Doctor

1949

/ [**Re: Polish %**](#)

OMG! Where to begin....
The polish provides flavor and sets the stage for potential crispiness and to some degree tenderness. Depending upon the amount of fermentation and temperature it can also impact crust color too.
The % of polish and its impact upon the dough are dependent upon such things as the strength of the flour, the fermentation tolerance of the flour, the amount of yeast used in the polish, the temperature of the polish and the fermentation time.
All I can say is that when I use a polish with a 12.8% protein content strong bread flour I use 100% absorption, 1/2 of my yeast and 85F water. I will typically allow the polish to ferment for about 90-minutes. I'm sure others have their own favorite ways to use a polish.
Tom Lehmann/The Dough Doctor

1950

/ [**Re: What is the worst pizza you have eaten?**](#)

We once had a lab tech that made his pizza using ketchup for the sauce. Can't say I took an immediate liking to it.
Tom Lehmann/The Dough Doctor

1951

/ [**Re: Scaling dough recipe up**](#)

Without knowing your dough management procedure it's impossible to say if it can

be scaled up or not.
Tom Lehmann/The Dough Doctor

1952

/ Re: Pre-made Pizza Crust

The easiest way to make a par-baked crust is to add about 1/2 of the sauce to it prior to baking, this will limit the bubbling significantly. Once it's par-baked you can store it at room temperature for up to 3-days. If you refrigerate it be sure to allow a couple hours at room temperature for the crust to warm up before adding the remainder of the sauce and dressing it for baking. Best results will be had by baking it on a pizza screen as opposed to on the deck for the final bake.

Tom Lehmann/The Dough Doctor

1953

/ Re: Bakers Percent/Formula Question

Whenever you want to reduce or scale up a dough in size all you need to do is to adjust the total flour weight then use bakers percent to calculate the amounts of the other ingredients. I have no idea where that dough formula is coming from? ???

Tom Lehmann/The Dough Doctor

1954

/ Re: Changing recipe for bulk ferment

After any bulk fermentation process the dough is going to be gassy and difficult, if not impossible to cool for stabilization so you're going to be looking at bulk fermenting, scaling and balling and then using the dough balls within the next 2 to 4-hours or so. The only option would be to open the balls into skins as soon as possible, place onto screens for storage and place into a wire tree rack stored in the cooler, be sure to place a plastic bag over the rack after an hour to prevent drying. By opening the balls into skins they can be more efficiently cooled for holding throughout the day.

Tom Lehmann/The Dough Doctor

1955

/ Re: Lehmann's naturally leavened recipes

Are your screens seasoned? From what I see in the picture it appears that they may not be seasoned?

Tom Lehmann/The Dough Doctor

1956

/ Re: Kid-friendly pizza dough recipe

If you go to the PMQ (Pizza Marketing Quarterly) web site <www.pmq.com> and go into the Recipe Bank, use "home made pizza dough" for your search you will

find my time proven home made pizza dough formula/recipe that I developed for local farm families to use when making fast and easy pizza. I use it all the time when I'm at my son's home and he wants me to make pizza for dinner.

The pizza dough mix that we used when I was a child was essentially a slightly modified baking powder biscuit mix, you can make something similar by putting together a simple pizza dough (be sure it contains some honey or corn sugar, don't use table sugar as it will not develop crust color) and replace the yeast with baking powder at 5% of the total flour weight. Mix all ingredients together, scale, ball, cover with a piece of plastic, and set aside to rest for about 20-minutes, then lightly oil your fingers and begin opening the dough onto a lightly greased pan, immediately sauce and dress as desired and bake at 425F/218C.

Tom Lehmann/The Dough Doctor

1957

/ [Re: Lehmann's naturally leavened recipes](#)

After re-balling you will typically need to allow the dough ball to rest for at the VERY MINIMUM, an hour but this can easily double in time before you can re-stretch the dough.

Is your sourdough active at refrigerated temperatures?

Tom Lehmann/The Dough Doctor

1958

/ [Re: Kid-friendly pizza dough recipe](#)

When I was a very young child I would always look forward to making pizza using the Chef BoyArdee Pizza Kit that my mother would buy from the supermarket (food store back in those days). The dough (as a dry mix, just add water) and the sauce are provided, so you just add water, mix and spread out onto an greased pizza pan or cookie sheet, add the sauce and your choice of toppings and 20-minutes later we were eating pizza. Not fancy or extravagant but for my first real introduction to making pizza it wasn't a bad experience. The good news is that you can still buy it at your local supermarket! :chef:

After the kids get the hang of making pizza you can always advance them on to making your own yeast leavened dough but if the kids attention span is anything like mine was doing that right up front would have been second only to sitting out in the yard and watching the grass grow.

Tom Lehmann/The Dough Doctor

1959

/ [Re: Changing recipe for bulk ferment](#)

Q.J. is spot on, consistency is the name of the game. If the cross-stacking and down-stacking are posing a problem you can always place the dough balls onto an aluminum sheet pan, lightly oil the dough balls and slip a food contact approved plastic bag over each sheet pan. This procedure has been discussed in a previous post. Store the sheet pans in a vertical pan rack for mobility and you're good to go as there is no need to cross-stack or down stack when using this process, it will cut at least two or more hours off of the process before kissing the dough good night.

Tom Lehmann/The Dough Doctor

1960

/ [Re: Dough help, still not quite right](#)

You might start with this:

Flour: 100% (KABF)

Salt: 2%

Sugar: 2% (optional)

Olive oil: 2%

IDY: 0.4%

Water: 65% (70F)

Procedure:

Put water in mixing bowl first, then add the salt and flour, add the IDY on top of the flour, mix just until you don't see any dry flour in the bowl, then add the oil and mix just until the dough takes on a smooth consistency. Targeted finished dough temperature: 80F.

Immediately scale and ball, lightly oil the dough balls and place into individual plastic bread bags, twist the open end into a pony tail and tuck under the dough ball as you place it into the fridge to cold ferment for 24-hours. Remove from fridge, allow to warm AT room temperature for 1-hour, open into a skin, dress and bake. The dough, when made in this manner should be able to be used as soon as 24-hours to a far out as 48-hours, maybe a little more. This process allows you to make the dough at a time when it's convenient for you and use it anytime within the next 2-days or so.

Tom Lehmann/The Dough Doctor

1961

/ [Re: Dough help, still not quite right](#)

Your dough fermentation time seems rather short to me (lack of sufficient fermentation time is a major contributor to excessive elasticity in the dough). My suggestion is to mix, scale, ball, and cold ferment the dough balls for 24 to 48-hours before opening them into skins and dressing for baking. If you don't want to go that route I'd suggest increasing the finished dough temperature to increase the fermentation rate. I see in your last post that you are up to 1.5% IDY which is a very high yeast level for a pizza dough, so if this doesn't improve the handling properties of the dough concentrate your efforts on either temperature or changing over to a cold fermentation process. As a last resort you might need to change your flour or flour blend to something a little weaker and better suited to your short fermentation process.

Tom Lehmann/The Dough Doctor

1962

/ [Re: Dough to throw?](#)

Craig;

That's the "Through Dough" I had previously mentioned. Back in the days of the

"Pizza Cruise" excursions, classes were held using this product to teach the art of pizza tossing/spinning. For a number of years it was all the rage at Pizza Expo. The wet towel works well too but this stuff is much closer to the real thing.

Tom Lehmann/The Dough Doctor

1963

/ Re: Dough to throw?

The idea here is to make a single dough which all contestants will have to work with. The dough has to be totally stable at room temperature so yeast is never used. Remember, it's for exhibition purposes only. The All Trumps flour was used to provide the necessary gluten for extensibility without tearing. Because there is no yeast in the dough it has to be mixed/developed to essentially full gluten development being careful not to over develop the gluten. You want to have good extensibility while still retaining sufficient elasticity so the dough will withstand the rigors of being continually tossed. We always worked with the Team to get the extensibility/elasticity balance just the way they wanted it.

Tom Lehmann/The Dough Doctor

1964

/ Re: Changing recipe for bulk ferment

Anne;

I don't recommend what you are proposing for a pizzeria operation, instead, how about just adjusting your dough formula to allow you to mix, scale and ball the dough in the evening when you have the walk-in space and dough boxes available and then be able to use the dough on the following day, I'm presuming at around 11:00 a.m.? This would mean modifying your dough formulation for an 18-hour cold fermentation process. I assume you are using IDY? If that's the case the only change you will need to make will be to the dough water temperature. You will need to adjust the water temperature to give you a finished dough temperature in the 80 to 85F range. Assuming you are using a planetary mixer and a mixing time of about 10-minutes your water temperature should be between 70 and 75F. With a dough ball weight of about 10-ounces your cross-stack time will be about 2-hours.

Tom Lehmann/The Dough Doctor

1965

/ Re: Dough to throw?

We used to make exhibition dough aka acrobatic dough for the U.S. Pizza Team the formula which we used was as follows:

Flour: 100% (All Trumps)

Salt: 6%

Oil: 2%

Water: 65% (variable).

You need to machine mix the dough to develop a smooth, extensible consistency.

Targeted finished dough temperature: 80F

Immediately after mixing scale and ball the dough. It will be ready to use in

approximately 30-minutes and remain good to use for ??????

If you are looking for something to practice acrobatic dough tossing you might want to look into "Through Dough".

Tom Lehmann/The Dough Doctor

1966

/ [**Re: Slapping it around**](#)

"Whacking" the dough down on the bench top actually helps to relax the dough for the following handling procedure. Bread bakers have been doing it for hundreds of years just prior to forming the dough ball into a shaped loaf.

Why do some do it and others don't? Habit, training, who knows? In the end you do what works for YOU and what YOU are comfortable with.

Tom Lehmann/The Dough Doctor

1967

/ [**Re: In need of guidance**](#)

To achieve a finished dough temperature in the 70 to 75F range you will need to use colder water when making your dough. When I was working with Greenwich there in the Philippines we were using dough water in the 60F range to achieve our targeted finished dough temperature.

Tom Lehmann/The Dough Doctor

1968

/ [**Re: Oil option\(s\)**](#)

A little oil on the hands, wipe your hands on the dough ball(s) and drop it into the bag.....done.

We did a study a number of years ago to determine if spraying of hand wiping put more oil onto the dough ball. Spraying put significantly more oil onto the dough ball than wiping the oil on with your hands.. This was done as part of a study where we were trying to reduce the fat content of the dough as much as possible.

Tom Lehmann/The Dough Doctor

1969

/ [**Re: Oil option\(s\)**](#)

Expense, and I've already got the salad oil so why stock yet another ingredient? Over spray can be an issue too.

Tom Lehmann/The Dough Doctor

1970

/ [**Re: Will Tenderflake Deep Dish Pie Shells work for Chicago Deep Dish Pizza?**](#)

I've never done it before but it should give you an interesting take on a Chicago type of deep-dish pizza. Without question it should be tender and flaky. If it works

for you an experiment you might want to look at would be using a double thickness (two pie skins) as this might give a crust thickness more in keeping with a Chicago style pizza.

Keep us posted on your results.

Tom Lehmann/The Dough Doctor

1971

/ Re: Kneading AT and Autolysing

The only time I use an autolyse is when I'm working with high dough absorptions (above 70%). When using a mechanical dough mixer you can use 100% of the flour in the autolyse but when hand mixing I suggest not going over 75% as the remaining flour will help to disperse the ingredients into the dough after the autolyse period. When hand mixing it takes some effort to mix the dough to a smooth consistency much less actually over mix it, and with bromated flour it is all but impossible to over mix the dough by hand.

Tom Lehmann/The Dough Doctor

1972

/ Re: Murenking / Aikok dual hook mixer

Craig is correct, most, if not all planetary type mixers do have a dough weight sweet spot that falls within a fairly narrow range. I've found over the years that this applies to essentially every mixer utilizing a vertical bowl design. Spiral dough mixers which utilize a horizontal bowl design typically have a much wider dough weight range sweet spot. It all has to do with the way the dough interacts with the agitator and the bowl. In a spiral design mixer the dough reacts more with the agitator than the bowl, hence the difference.

Tom Lehmann/The Dough Doctor

1973

/ Re: Sourness in Pizza Dough

Victor;

Since every starter culture is different it is not unusual to achieve different flavors or magnitudes of sourness/tartness from the different cultures. The micro flora that your specific culture consists of is most likely producing a lower pH which results in the more tart flavor profile of the finished/baked crust. I would suggest using less of the starter when making your doughs. A good starting point would be to use 5% less and bench mark from there.

Tom Lehmann/The Dough Doctor

1974

/ Re: Life's Meaningful Quotes.....

My personal favorite:

Death....Natures way of saying "slow down".

Tom Lehmann/The Dough Doctor

1975

/ [Re: Pizza Dough](#)

We used to demonstrate frozen dough in our pizza seminar. What we found to work quite quite well with frozen dough is to slack it out in the cooler over night on an 18 X 26 aluminum sheet pan, then bring it out of the cooler, brush the dough balls lightly with salad oil and slip a large, food contact approved, plastic bag over the sheet pan containing the dough balls, pull the bottom of the bag up over the dough balls and then bring the top down and tuck everything under the pan. Allow the dough balls to remain at room temperature for 1-hour, then place back into the cooler for 24-hours. After the 24-hour cold fermentation period the dough balls will be ready to open. Because most commercially made frozen dough contains L-cysteine you should be able to take the dough directly from the fridge to the prep-table for opening and immediate use. I would suggest using a dough docker with your frozen dough. Any dough balls not used during the first day of use can be left in the cooler for use on the following day but remember FIFO.

This process will give your frozen dough much of the flavor characteristics typically obtained with dough that's made in-house and you will also find that it's much more consistent when managed in this manner.

Tom Lehmann/The Dough Doctor

1976

/ [Re: Multiple pizzas](#)

Suggestion, have you thought about par-baking the crusts with only the sauce, then add the remainder of toppings and just finish baking. This will reduce the baking time by about 50% for most pizzas. You can make the par-baked crusts about an hour in advance of using them without any issues at all.

Tom Lehmann/The Dough Doctor

1977

/ [Re: Food Quotes](#)

Craig;

I'm betting if she was on a diet that she'd have the pizza cut into only two slices!

:-D :-D :-D :-D

Tom Lehmann/The Dough Doctor

1978

/ [Re: Food Quotes](#)

If the food was good, don't ask to see the kitchen.

I've never had a pizza I couldn't learn to like.

Tom Lehmann/The Dough Doctor

1979

/ Re: Wooden pizza peel in WFO?

Great looking peel!

Treat it with mineral oil to protect it and it should last a very long time.

Tom Lehmann/The Dough Doctor

1980

/ Re: Pizza with last minute balling ?

I think what you were seeing was the loose ends of the piece of dough being tucked into the body of the dough as it was being prepared for sheeting, this is a far stretch from actual rounding/balling of the dough.

Tom Lehmann/The Dough Doctor

161

/ Re: Higher hydration doughs

Just as an FYI, there is essentially no difference when bulk fermenting 1.5 Kg. of dough as opposed to fermenting in dough balls. The reason for this is because up to about 1.5-Kg. dough weight a bulk dough is really nothing more than a larger size dough ball. True bulk doughs will ferment much differently than a dough ball which is the reason why so many pizzerias have transitioned away from bulk fermentation to dough ball fermentation over the past 50-years.

Tom Lehmann/The Dough Doctor

162

/ Re: Which are the factors that affect digestibility?

6C (42F) is not considered to be a safe food storage temperature. In a commercial application it is not even considered as a legal refrigerated temperature, and this doesn't take into account what happens when we are in and out of the fridge many times during the day, which Yael has alluded to. This has to be taken into account when calculating how much yeast to use as well as the total CF time. This is important if you are getting your information from a commercial (pizzeria) source where they have a commercial walk-in or reach-in cooler. Everything revolves around temperature. :-D

Tom Lehmann/The Dough Doctor

163

/ Re: Has anyone else had trouble since the pandemic?

I've seen nothing unusual with the exception of some spot shortages of yeast and flour early on but nothing lately.

Tom Lehmann/The Dough Doctor

164

/ Re: 4 day cold ferment neapolitan

You're going to want to scale and ball the dough and then leave it out at room temperature to relax sufficiently for opening into a skin. The only issue is that 2 to 3-hours might be a bit excessive, if it is, go ahead and open the dough when its ready and place the opened skins on a lightly floured plate or something and hold in the fridge until about 30-minutes prior to use, then remove, allow to temper AT (NOT TO) room temperature for 20 to 20-minutes, clean up the skins a bit, dress and bake as needed.

If your total dough weight will be less than about 1.5-Kg. there is little to no difference between fermenting in a ball or bulk fermenting as you don't achieve the bulk fermentation characteristics with such a small dough size (it responds more like a large dough ball).

Tom Lehmann/The Dough Doctor

165

/ Re: Which are the factors that affect digestibility?

All cards are off the table if the pizza is not completely baked, then and only then can you begin looking at various fermentation times (keep in mind that since acid is produced as a byproduct of yeast fermentation/acids inhibit crust color development)you may need to reassess the baking of the pizzas to get it correct for the fermentation time being employed at the moment.

Tom Lehmann/The Dough Doctor

166

/ Re: Which are the factors that affect digestibility?

That's really not a lot of fermentation time if "digestibility" is what you are looking for. Remember, fermentation is also a part of the digestion process. The enzymes convert a portion of the starch to sugar for use as a yeast nutrient and the acids produced by the yeast as a byproduct help to break-down the proteins plus there will be some proteolytic enzymes present which will also work to break-down proteins but all of this requires some time which is why a longer fermentation time might serve you better than the short fermentation time you are presently using.

Tom Lehmann/The Dough Doctor

167

/ Re: Higher hydration doughs

Why not just "bulk" (how much dough weight are we talking about?) and then ball and allow to rest until the dough balls can be easily opened into skins? By going to a higher dough absorption, depending upon your baking temperature) you may have a higher finished moisture content in the crust which will certainly contribute to a softer crust BUT it is a double edge sword in that it will also contribute to a tougher/chewier crust at the same time. If you want to have a softer, more tender eating finished Neo. type crust you might be better served using a lower protein content flour than what you are presently using. Keep in mind though that by doing so you may not be able to ferment the dough as long as low protein flours typically

exhibit a lower fermentation tolerance as compared to higher protein content flours.

Tom Lehmann/The Dough Doctor

168

[/ Re: All Trumps vs Kryol for homemade NY Style](#)

Steve;

The mechanics of the finished dough temperature are as follows:

Temperature is the #1 driver of fermentation, a higher temperature will boost or speed up the rate of fermentation and a lower temperature will slow it down. Even a few degrees F. will make a difference. A warmer dough temperature than desired can result in more fermentation taking place before the dough is sufficiently cooled to control the fermentation rate, this results in two things happening, 1) The dough becomes less dense and a better insulator making it even more difficult to cool, 2) As the dough is fermenting it is also gaining temperature due to heat of metabolism and this heat must be extracted in order to control the rate of fermentation during the CF period. The inverse is also true when the finished dough temperature is colder/cooler than targeted. The closer your targeted finished dough temperature is to 90F the more critical the finished dough temperature is and the more important it is to keep the temperature as constant as possible. At colder finished dough temperatures, say at 70F, the yeast is not as sensitive to slight variations in temperature so we have a little more latitude in the actual temperature. This is all due to the fact that yeast, as a microbe becomes exponentially more active as the temperature of the substrate which it's in approaches 90F. This issue exists in commercial operations with both walk-in and reach-in coolers (tends to be worse in reach-in units due to their reduced efficiency over the walk-in units) but it can REALLY be a problem in home refrigerators which have a 200+ "Energy Star rating" plus they are seldom operating at peak efficiency because we are constantly opening and closing the door over the CF period of time. This is also the reason why residential refrigerators and freezers are not permitted in commercial applications, they typically don't have the reserve capacity to EFFICIENTLY handle things (dough) that are a bit warmer than desired, which results in more fermentation than anticipated at any projected point in time.

Tom Lehmann/The Dough Doctor

169

[/ Re: Higher hydration doughs](#)

When I make the higher absorption Neo. doughs I always start out at 75% absorption and adjust accordingly for the absorption properties of the flour from there, so I would not implement any changes, but if you want a softer, more tender eating pizza I would just add some oil to the dough formula. Start at 2% and go up from there to give you what you want, remember, as with any high absorption dough, to reduce the dough absorption by the same % as you add oil.

Tom Lehmann/The Dough Doctor

170

/ Re: Reshaping Dough After Delayed Fermentation

Actually, there is nothing at all wrong with taking something from different formulas and/or procedures and bringing them together to make something that is unique specifically to what you are doing, that's one of the fun aspects of making pizza (the other is eating it). The work generally centers around trying to figure out how to make those different parts all fit together and play well together to give you the pizza that you want and can make great on a consistent basis.

Tom Lehmann/The Dough Doctor

171

/ Re: All Trumps vs Kryol for homemade NY Style

Steve;

I apologize for the assumption. :-[

As you well know, even the yeast has to be weighed, it's the one ingredient that we typically use which can give variable results with only a small change in the amount used.

When it comes to temperature monitoring, these are the temperatures which we are usually targeting, but like so many other things pizza, they are not cast in stone, they will be somewhat variable with the type of dough management process employed as well as conditions specific to our different kitchens and equipment at hand.

Finished Dough Temperature: 70 to 75F.

Down-stack Temperature: 50 to 55F.

Cooler/fridge Temperature: <40F.

Temperature to Begin Using the Dough after Cold Fermentation: 50 to 60F.

Ideal Fermentation Temperature: 90F. & 85 to 88% R.H.

Ideal Final Proofing Temperature: 95 to 105F & 85 to 88% R.H. Note: In common practice many use 95 to 100F as the optimum "practical" final proofing temperature as R.H. (relative humidity) becomes difficult to control above 100F.

I have not included baking temperatures as they are so widely variable and vary with oven type/design, pizza being made, as well as altitude above sea level.

Tom Lehmann/The Dough Doctor

172

/ Re: Reshaping Dough After Delayed Fermentation

That's a very good and valid point that Yael brings up regarding a home fridge. We encounter a similar issue in commercial practice between a reach-in cooler and a walk-in cooler with the reach-in unit not holding temperature as well as a walk-in.

Tom Lehmann/The Dough Doctor

173

/ Re: Reshaping Dough After Delayed Fermentation

Do you know what the Lintner Value (degree-L) of your diastatic malt is? for a 20-L the amount needed is only 0.25% of the total flour weight (316-grams in your case) but if it's 60-L the amount would only be a third of that 0.083-gram. Maximum

would be about 0.5%. The amount you are presently using is 2.2%. These numbers are based on using unmalted flour but I'm guessing your flours are all malted already so that further strengthens my case that your dough might be over malted which would be responsible for the dough balls flattening out during the CF (cold fermentation) period. You might try leaving the malt out to see if it helps. The amount of IDY is quite high too at 3-grams for 316-grams total flour weight = 0.949% (almost three times what might be considered a "normal" level of 0.375%, this would explain why the dough balls get gassy soon after removing from the fridge. Lastly, I'd suggest measuring the actual finished dough temperature after mixing. This is important as it regulates the rate at which your dough will ferment. Ideally, you will most likely be best served with a finished dough temperature in the 75 to 80F range, whatever temperature you use remember that consistency is actually more important than the actual temperature itself.

Tom Lehmann/The Dough Doctor

174

[/ Re: All Trumps vs Kryol for homemade NY Style](#)

Steve;

One thing that you might want to do is to begin transitioning from a dough "recipe" in volumetric portions to a dough "formula" based on actual weight for each ingredient. There are any number of good scales available on the Internet that many of us here use (I personally love my KD-8000). This change will give you the accuracy and repeatability needed to develop your dough formula(s). A good dial/stem type thermometer for \$7 to \$12.00 will take care of your temperature needs (be sure to look for one with a hex nut under the head as this will allow you to calibrate the thermometer as needed). Once you have your dough based on weight measures it can be put into bakers percent for ease of evaluation and it will greatly help you manipulate the size of the dough too if you should want to increase or decrease the actual dough size.

Tom Lehmann/The Dough Doctor

175

[/ Re: All Trumps vs Kryol for homemade NY Style](#)

In reading your post I have some questions, what was the actual finished dough temperature for the Kyrol and All Trumps doughs? Did you optimize the dough absorption for the All Trumps flour or did you just plug in the same absorption you used with the Kyrol flour? I ask these questions because some of what you mentioned could be due to a difference in fermentation between the two doughs resulting from a difference in finished dough temperature which could have a significant impact upon the dough depending upon how you are managing your doughs. The dough absorption can also be highly variable especially in view of the fact that you are dealing with different brands as well as different suppliers, not to mention the fact that the absorption of any flour can/will vary from bag to bag or lot to lot, and even the age of the flour will have a significant impact upon its performance in both the dough as well as the finished crust. As you can see, there are a lot of variables at play here.

Tom Lehmann/The Dough Doctor

176

/ Re: Reshaping Dough After Delayed Fermentation

I'm suspecting some major problem/problems with your dough formula/recipe. Please provide details of your flour, dough, dough temperature, and how you are baking the pizzas and I'll be glad to offer my suggestions.

Tom Lehmann/The Dough Doctor

177

/ Re: Which are the factors that affect digestibility?

The two factors most responsible for "digestibility" of the crust are fermentation and quality of bake. The longer the dough is fermented (within reason) and the more solid (complete) the bake is the more digestible the finished crust will be. From your pictures I'm guessing that your targeting too thick of a crust for high temperature baking which can easily result in not getting the finished crust as well baked as it could be.

Tom Lehmann/The Dough Doctor

178

/ Re: Dough science - minutes after cold ferment but before baking?

The 50 to 55F dough ball temperature after cold fermentation is the internal dough ball temperature. Depending upon your ability level at opening the dough into skins you may find it easier to open the dough at 50 to 55F or at a higher temperature as the dough becomes softer and more extensible at the higher temperatures which can be problematic for someone without the skill set to open the softer dough.

Tom Lehmann/The Dough Doctor

179

/ Re: I haven't been able to duplicate my bubble crust after succeeding once.

I'm in agreement with Yael in his assessment that your dough might be over fermented at 72-hours room temperature fermentation, especially in view of the fact that we don't know the dough temperature or the room temperature. Your IDY amount (1/6th of a Tsp.) works out to 0.5-gram, and assuming 152-grams of flour in your 1-cup portion this works out to 0.328% IDY. This is very close to the accepted amount to use for the same length of fermentation time in the cooler/fridge, not at room temperature, unless room temperature is defined as <40F. If you don't want to cold ferment I'd suggest dialing the room temperature back to 24-hours and if that works for you then begin increasing the fermentation time in 12-hour increments to find what works best for you. While doing this though I would highly advise that you keep track of the finished dough temperature as well as the room temperature as both are highly prone to changing over time.

Tom Lehmann/The Dough Doctor

180

/ **Re: Getting crust to brown without being too overcooked and hard.**

Not more than 0.5%. The numbers I gave are representative of what it takes to replicate the malting of the flour that takes place at the flour mill.

Tom Lehmann/The Dough Doctor