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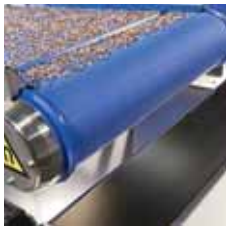


Whole grains linked to reduced risk of diabetes, study says

People in the highest category for consuming whole grains had a 29% lower rate of being diagnosed with type 2 diabetes when compared to people in the lowest category in a study published July 8 in BMJ.

"Higher consumption of total whole grains and several commonly eaten whole grain foods, including whole grain breakfast cereal, oatmeal, dark bread, brown rice, added bran and wheat germ, was significantly associated with a lower risk of type 2 diabetes," the study concluded. "These findings provide further support for the current recommendations of increasing whole grain consumption as part of a healthy diet for the prevention of type 2 diabetes."

Researchers from the Harvard TH Chan School of Public Health, Brigham and Women's Hospital and Harvard Medical examined results from the Nurses' Health Study (1984-2014), the Nurses' Health Study II

AIBTM

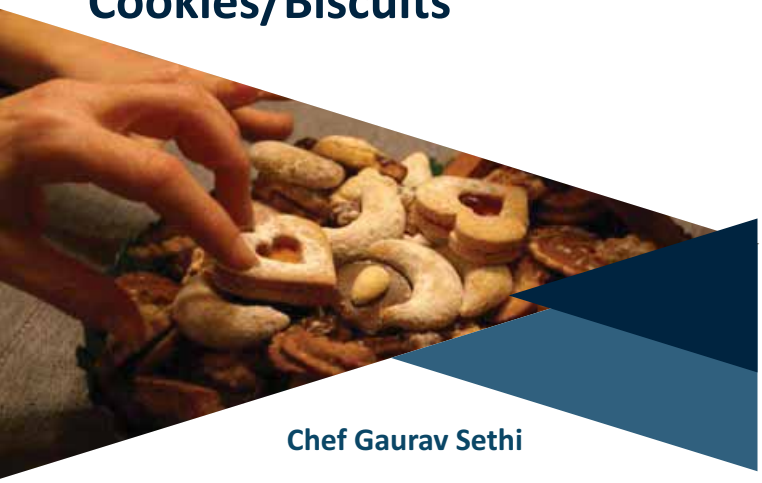
Corporate Office: Assocom Institute of Bakery Management & Technology (AIBTM)
Plot No. 30/25, Knowledge Park - III, Greater Noida - 201 306
Tel. : +91-120-29777726, 27 Email : aibtm@aibtm.in Website : aibtm.in

(1991-2017) and the Health Professionals Follow-Up Study (1986-2016). The three studies accounted for 158,259 women and 36,525 men who were free from diabetes, cardiovascular disease or cancer at baseline. Five groups were created based on the median number of whole grain servings they had per day: 0.1, 0.4, 0.7, 1.1 and 1.9.

The researchers found consuming one or more servings a day of whole grain cold breakfast cereal was associated with a 19% lower risk of becoming diabetic when compared with consuming less than one serving a month. The percentage for dark bread was 21%. The researchers also compared two or more servings per week with less than one serving a month for whole grain oatmeal, brown rice, added bran and wheat. Eating two or more whole grain servings per week was associated with lower risks of 21% for oatmeal, 15% for added bran, and 12% for both brown rice and wheat germ.

The reductions in risk seemed to plateau at about two servings a day for total whole grain intake and at about half a serving a day for whole grain cold breakfast cereal and dark bread.

Cookies/Biscuits



Chef Gaurav Sethi

To start with let's discuss the difference between cookies and biscuits:

Both, cookies and biscuits mean the same, while the difference lies in the places where they are known differently, i.e. the word 'cookies' is often referred to biscuits and cookies in the American countries, whereas the term, 'biscuits' is generally used is in the British countries.

Cookie comes from the Dutch word koekje, which translates to "small cake," as do both the Swedish name for cookies, smakakor, and the German Klein geback. It is a tradition in Sweden to serve cookies and coffee at 3 o'clock each afternoon—our equivalent of English afternoon tea. Seven kinds of cookies are neatly lined up on trays.

If it is not possible to have seven types, the custom is to serve another odd number of varieties such as five. When someone dropped by to visit during the day, we always served coffee and cookies.

Cookies are also great for after-dinner treats. It has become popular in some restaurants to serve a platter of assorted small cookies when the check is presented, perhaps to cushion the shock a little.

In England, cookies are known, of course, as biscuits. There are more varieties of these small, irresistible sweets than any other baked good—largely because so many variations in shape, flavor, texture, and size fall under this one heading.

Appearance

Cookies should look as good as they taste. You always want to make those cookies, which your guests just can't resist, even if they are not hungry. With few exceptions, cookies should be small. They should always be uniform in size and thickness. Not only will they bake more evenly, your cookies will create an elegant presentation when displayed on a tray.

Decorating

Cookies can be decorated and made more delicious by piping jam on top, dipping them in chocolate (completely or in part), sandwiching them together with preserves or buttercream, dipping them in fondant, or topping them with sifted, powdered sugar or an icing.

Forming

Cookie dough is shaped in several ways. Some cookies, such as Macaroons are piped out using a pastry bag with a specific tip. In other recipes, the dough is divided into equal portions; which are rolled into ropes of uniform thickness and cut into cookies. This method not only gives you cookies of uniform size, but also makes storage easier.

Baking

Most cookies have a high sugar content, which makes them susceptible to overbrowning. It is usually a good idea to bake them double-panned to prevent them from becoming too dark on the bottom before they have a chance to reach an appetizing golden

brown color on the top. Generally, cookies should be baked around 180°C except macaroons, which bake at 145°C to ensure softness.

Characteristics:

We can classify cookies by their characteristics:

Crispness

Cookies are crisp when they are low in moisture.

1. Low proportion of liquid in the mix (most crisp cookies are made from a stiff dough).
2. High sugar and fat content.
3. Small size or thin shape causes the cookies to dry faster during baking.
4. Baking long enough to evaporate most of the moisture (baking in a convection oven "vent out" also dries cookies more quickly, contributing to crispness).

Softness

Softness is the opposite of crispness, so it has the opposite causes, as follows:

1. High proportion of liquid in the mix.
2. Low sugar and fat.
3. Honey, or corn syrup included in the recipes.
4. Under baking.
5. Large size or thick shape which enable them to retain more moisture.
6. Proper Storage. Soft cookies can dry out if not tightly covered or wrapped.

Chewiness

Moisture is necessary for chewiness, but other factors are also important. It is worth to note that ALL CHEWY COOKIES ARE SOFT, BUT NOT ALL SOFT COOKIES ARE CHEWY.

1. High proportion of eggs is required to make chewy cookies.
2. High liquid and sugar content, but low fat content.
3. Brown Sugar.
4. Strong Flour (means high gluten content).

Note: Gluten is a protein found in wheat and other cereals.

Almost all the cookies in the world are composed of 4 basic ingredients:

FLOUR	BUTTER	EGGS	SUGAR
⬇	⬇	⬇	⬇
Gluten & Browning	Fat	Gives moisture	Flavoring, Expanding
⬇	⬇		
Texture	Mouth feel		

Mixing Methods (which is universal):

1. **Rub-in-Method:** Cold butter and flour is mixing together to create a layer of fat around the entire flour after which its harder for liquids to get through, resulting in less gluten formation and Cookies turned out to be crunchy and crispy.
2. **Creaming Method:** Soft butter and sugar are mixing together for the creation of air pockets tapped in fat, resulting into smaller crystal's = more air pockets. Cookies turned out to be light, fluffy and sandy.

Types of COOKIES/BISCUITS:

Although there are only two types of cookies that is:

EUROPIAN BUTTER COOKIES and AMERICAN STYLE COOKIES, but these days every single country has its unique taste and variants in the cookies according to their vernacular taste and style. For say like in INDIA, We have variants like Jeera cookies, Rusks, Suji cookies, Jaggery cookies and so on. Below are some types of cookies, famous all around the world:

1: **Biscotti:** These are Italian almond biscuits that originated in the city of Prato. They are twice baked,

oblong-shaped, dry and may be dipped in a beverage.

Ingredients: Flour, Egg white, Sugar and Whole Nuts.

2: **Chocó chip cookies:** These are classic drop cookies, originally made with semi sweet Chocó chips and it is actually attributed to one woman in Massachusetts, America where she invented these cookies in 1938.

Ingredients and procedure are as follows:

- Unsalted butter- 225 gm.
- Brown sugar-212 gm.
- Castor sugar- 170 gm.
- Vanilla – 6 gm.
- Salt – 1 gm.
- Baking soda- 3 gm.
- Whole Eggs-70 gm.
- Flour- 354 gm.
- Semi sweet Chocó chips- 340 gm.

Procedure:

- Whisk the flour, salt, and baking soda in a medium bowl. Set aside.
- In a separate bowl melt the butter. Add in both white and brown sugars and whisk vigorously for about 1 minute.
- Whisk in one egg to the sugar-butter mixture, stirring until it's fully mixed in. Scrape the sides of the bowl with your spatula.
- Whisk in the second egg and the vanilla and then scrape the sides of the bowl again.
- Add the dry ingredients to the wet and stir with the spatula to fully combine. Make sure you've scraped the bottom of the bowl and there are no streaks of dry ingredients left. Stir in the chocolate chips. The dough will be soft but DON'T add more flour. It needs to be chilled now to firm up.
- **Important Note:** Chill the dough for a minimum of 1 hour. This will make it easier to scoop and your cookies will keep their shape better while baking. (This dough can be made and kept in the fridge for 7 days. The dough also freezes really well)
- Scoop 14-15 balls of cookie dough (1/4 cup/100g each) and place on a parchment-lined baking sheet. Leave some space between the cookies as they spread out during baking.

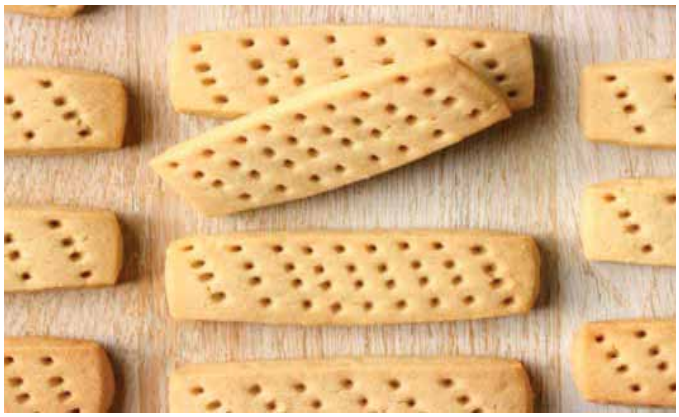
- Bake the cookies at 375°F (190°C) for about 12-15 minutes roughly, or until the edges are set and the cookie is beginning to turn golden brown throughout, but still dough in the middle. It is really important you don't over bake these cookies otherwise they won't be soft in the middle.
- Once out of the oven bang the hot pan on the counter a few times to create crinkles on top of the cookie. Let cool on the sheet for 5 minutes, then transfer to a wire rack to cool completely. Store them at room temperature in an airtight container for up to 3 days.

3: **British Scones:** A small unsweetened or lightly sweetened cake made from flour, fat and milk and sometimes having added dry fruit.

4: **Sable Viennois:** A rich butter cookie originating from Vienna, Austria. The French word sable means “sand”, which is the French term that takes the place of the English “breadcrumbs” in the context of baking: at the beginning of the recipe, the baker rubs cold butter into flour and sugar to form particles of dough resembling sand.

Main ingredients are: butter, icing sugar, egg whites, flour, salt, and vanilla.

5: **Shortbread:** A Scottish in origin, this rich, tender, and crumbly straw colored biscuit, in its most basic form, shortbreads are made with just four ingredients: flour, sugar, butter, and egg yolks.



6: **Brownie:** An American brownie is a square, baked, chocolate dessert. Brownies come in a variety of forms and may be either fudgy or cakey, depending on their destiny. They may include nuts, frosting, cream cheese, chocolate chips or other ingredients. A variation made with brown sugar and white chocolate in the batter is called a blonde brownie or Blondie.

Ingredients are like: dark chocolate, butter, eggs, sugar, vanilla, flour and nuts (optional).

7: **Anzac Cookies:** These cookies are popular in Australia and New Zealand. Anzac cookies have long been associated with the Australian and New Zealand Army Corps (ANZAC) established in World War 1. It has been claimed that wives and women groups sent these cookies to soldier's abroad because the ingredients do not spoil easily and cookies kept well during naval transportation.

Ingredients are: Oats, coconut powder, flour, sugar, baking soda, hot water, golden syrup, soft butter, and green apple.

8: **Basler Lackerli:** It is a traditional hard spice biscuit originating from Basel, Switzerland. It is a flat baked dough, when still hot, cut into rectangular pieces, and then topped with a sugar glaze. These cookies were originally created by local spice merchants over 700 years ago and are available year-round.

Ingredients are: honey, hazelnuts, almonds, candied peel and Kirsch.

9: **Oatmeal Raisin Cookies:** Oatmeal cookies are the descendants of oat cakes made by the Scots, going back to the time when the Romans attempted to conquer Scotland. Oatcakes first appeared when they began harvesting oats as far back as 1,000 B.C. It isn't known how or when raisins were added to the mix, but raisins and nuts have been used since the Middle Ages.

The first recorded oatmeal raisin cookie recipe was written by Fannie Merritt Farmer in 1896, and billed as a "health food.

Ingredients include: Butter, sugar, brown sugar, salt, eggs, vanilla, milk, flour, baking powder, baking soda, oats, raisins.

10: **Nankhatai:** Nankhatai are biscuits, originating from the Indian Subcontinent, popular in Northern India and Pakistan.

The word Nankhatai is derived from Persian word Naan meaning bread and "Khatai" from a Persian word meaning Biscuit.

In Afghanistan and Northeast Iran, these biscuits are called Kulcha-e-Khataye. Kulcha is a type of Indian bread similar to Naan.

Nankhatai is believed to have originated in Surat in the 16th century, the time when Dutch and Indians were the important spice traders.

A Dutch couple set up a bakery in Surat to meet the needs of local Dutch residents.

When the Dutch left India, they handed over the bakery to an Iranian.

The locals disliked the bakery biscuits. To save his business he started selling dried bread at low prices. It became so popular that he started drying the bread before selling it.

With time, his experimentation with bread ultimately gave birth to nankhatai.

Ingredients are:

- Flour- 130 gm.
- Gram Flour- 60 gm.
- Semolina- 30 gm.
- Powder Sugar- 80 gm.
- Salt-1 gm.
- Cardamom Powder-1 gm.
- Butter: 150 gm.

British study shows benefits of flour enrichment

One in five British citizens are significantly deficient in vitamin D. Two scientific studies show that enriching flour with vitamin D is the most effective way to combat this deficiency and supply people in Great Britain with the vital “sunshine vitamin.”

A balanced level of vitamin D in the body is essential for health and vitality. Its importance for calcium and bone metabolism has long been known, but recent research shows that this fat-soluble micronutrient has a much broader range of effects on the body than was previously understood.

Insufficient vitamin D levels are associated not just with rickets and osteoporosis, but also with diabetes, intestinal cancer, anaemia, high blood pressure and multiple sclerosis.

Poor access to the sunshine vitamin

Like in most countries, people in Great Britain don’t get enough vitamin D. Levels are nowhere near the recommended amount, at 20% in adults and just 16% in youths between 11 and 16.

The problem is that the two major sources of vitamin D — sunlight and certain foods — don’t provide enough of it. The vitamin is present in only a few foods, like fatty fish, organ meat, milk and dairy products, and mushrooms.

The body can make its own vitamin D with the help of UVB rays from sunlight on the skin, but the amount produced depends on many factors.

Seasons, weather, ethnic group and age all affect the chemical transformation process in the skin. At special risk are seniors, dark-skinned and Asian people, and girls and women who always cover themselves when they go out.

Inadequate measures

To raise vitamin D levels, nutritionists recommend enriching staple foods. However, experience in Great Britain shows that not every such measure has the desired effect. Currently, vitamin D enrichment is mandatory in Great Britain for baby food and margarine, while milk and cereals often are enriched on a voluntary basis as well. And yet the results are modest — the daily intake of vitamin D in the population is often far below the recommended reference value of 400 IU.

Therefore, British experts are calling for a strategic realignment of preventive measures and are looking at foods made with wheat flour. The basis for this is two scientific studies that come to the same conclusion independently of one another, namely that flour enrichment would be the most effective way to significantly raise the vitamin D status of all population groups in the United Kingdom. A great advantage of wheat flour is its versatility. Whether it is bread, baked foods, pizza or pasta, all of these popular foods can carry an extra portion of vitamin D.

Vitamin D boost with flour

An analysis by the London Department of Health in 2015 confirmed that results can be achieved quickly with vitamin-fortified flour. By means of a theoretical test model, it examined how the health of the population would change if milk (up to maximum 7 mg/100 l) and bread (10 µg/100 grams of flour) were enriched. Using existing data, it showed that vitamin D deficiency in the risk groups would be reduced to 50% from 93%. The analysis also showed that flour is more effective than milk. Accordingly, nutritional scientist Dr. Rachel Allen and her team prefer it over dairy products. The study's conclusion was that "enriching flour with vitamin D would be an advisable option for a sure improvement in the vitamin D intake of the population."

Scientists at Birmingham University also have shown that fortified flour could significantly raise the amount of vitamin D in the blood serum of people in England and Wales. Empirical calculations indicate that within the next 90 years there will be 40 million new cases of vitamin D insufficiency if the government does not counter this with legislation. In 10 million people (25% of the population), this serious deficit could be prevented quite simply by adding vitamin D to flour. No changes to the diet would be necessary.

Government must react

In a study published in August 2019 in the European Journal of Clinical Nutrition, project director Dr. Magda Aguiar identified the economic benefits of mandatory flour enrichment. Without it, she said, the British National Health Service will see additional costs of £65 million ($80 million) in the time period specified in the study. The costs of mandatory flour enrichment would be negligible by comparison, at just 12 pence per person per year.

Dr. Aguiar urged lawmakers to act.

"There is a strong economic case for fortifying wheat flour with vitamin D," she said. "We hope that UK policymakers will consider a new national policy to fortify foods such as wheat flour with vitamin D to address this serious health issue. This will lead to significant benefits for the population, particularly the most vulnerable groups."

Mühlenchemie tests the stability and baking behavior of vitamin D

Mühlenchemie is one of the best-known suppliers of vitamin and mineral premixes, and provides mills with tailor-made raw materials, technical equipment and consulting. In many countries flour enrichment with nutrients like iron, folic acid and zinc is standard, but vitamin D remains on the sidelines.

In order to gain more background knowledge on how this micronutrient acts in flour, Mühlenchemie ran a series of application-specific baking and stability tests in the company's own Stern-Technology Center. The results in brief:

- The tests used spray-dried vitamin D3 (cholecalciferol), with tocopherol to protect it from oxidation. The dosage was 7.5 µg/kg flour, and the test products were bread and biscuits.
- The technologists doing the tests were pleased with the results, in the process and in the baked foods. The powder was easy to work with, distributed very well and affected neither the sensory factors nor the appearance of the final products.

Results with respect to vitamin D stability varied.

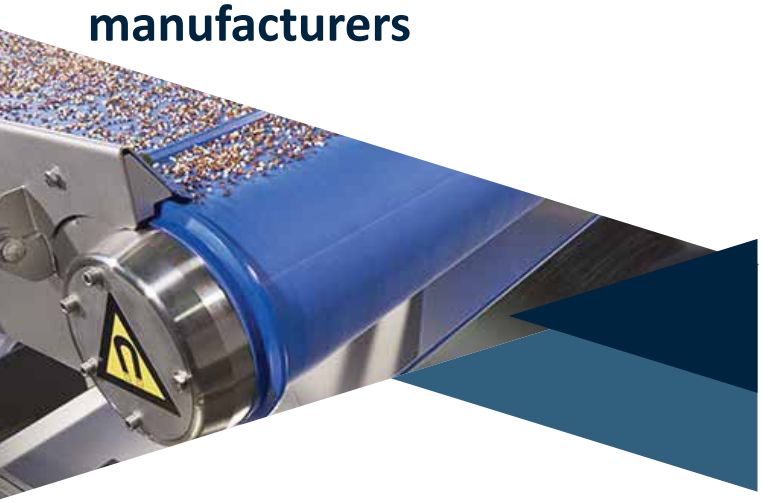
In white sandwich bread, an activity loss in the 15% to 20% range was measured. Baking temperature was 200° C. During the 30-minute baking time, the core temperature inside the loaves reached 98° C.

In biscuits, cholecalciferol activity was reduced by about 30%, due to the higher baking temperature and the small, flat shape of the product. The 220° C oven temperature reached the core of the dough during the 10-minute baking time, thus leading to greater activity loss.

Degradation processes of this kind, caused by light, oxygen and heat, are scarcely to be avoided in the food production. However, adjustment of the dosage used in flour enrichment can ensure that the final product has the desired vitamin content even after baking or cooking.

Sven Mattutat is a product manager with Mühlenchemie. He may be contacted at smattutat@muehlenchemie.com.

Metal filter system devised for chocolate and biscuits manufacturers



Netherlands business Goudsmit Magnetic Systems has devised a metal filter solution for the confectionery sector, aimed as business operating within decoration of cakes, biscuits and yoghurt-based products.

As the company explained, its equipment has been designed to work with chocolate chips and granules that could potentially contain tiny pieces of metal less than one mm in diameter, which it noted is a relatively common problem within chocolate production.

In creating its magnetic solution, the company had been tasked with filter the pieces containing metal out of the product flow, without loss of product. Consequently, it developed its high gradient separator with a strong magnetic conveyor roller, specifically for the food industry.

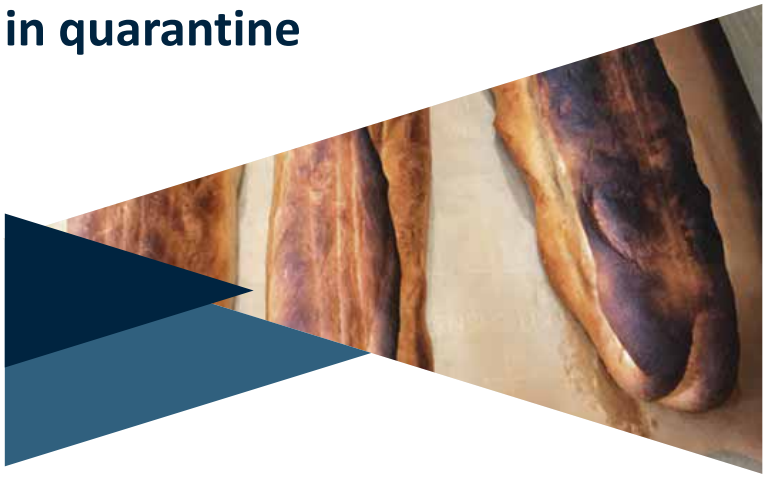
With this system, the business achieved a strong degree of separation efficiency, not just for iron particles, but also for weakly magnetic stainless steel particles, such as AISI 304 and AISI 316.

According to the company, the high gradient separator is more effective than a free-fall magnetic separator, as with the latter you have to slow down the metal particle before you can capture it.

In addition to chocolate, the magnetic separator is also suitable for other dry, granular products, such as herbs and spices. The process itself is considered comparatively simple. A vibrating chute feeds the chocolate flakes and pellets onto the conveyor belt and distributes the products in a single layer over the belt.

The conveyor belt turns around the magnetic roller that captures and carries away the metal-containing product. The clean product falls directly into the packaging machine. Cleaning Hygiene is of the utmost importance, especially in the food industry. This was keenly considered while designing the HG separator. A quick release system makes removal and replacement of the conveyor belt quick and easy. The special open construction and covers that easily swing out of the way make it easy to clean.

Lessons from bread making in quarantine



Bread. It's a staple food, available at a wide range of prices and qualities, in various forms, across a variety of cuisines. It's also a relatively simple food: just flour, water, salt and yeast. And for the many people stuck inside, bread baking has seen a serious revival. With amateur sourdough starters and bagels filling social media feeds, it's easy to feel as though everyone is jumping on the bandwagon—but as the quantity of home-baked bread increases, so do questions about

its quality. In a piece about homemade bread, it's hard to separate the reporter from the story, so, a brief explanation—I've done a number of pieces on Cleveland restaurants, shadowed a few bakers and worked as a waiter for several restaurants that bake their own bread. I also consider myself to be a bit of an amateur chef. So, armed with my experience and self-confidence, I dove into the world of breadmaking headlong—and emerged covered in flour and self-doubt.

The investigation into homemade bread started with the baguette. There are a number of different ways to make a baguette, but they're all fundamentally similar, and not particularly complicated.

The night before baking requires the preparation of a poolish, or starter dough, which uses a little bit of yeast and some water and flour to get the fermentation that prevents the bread from becoming dense and bricklike. The next day, the poolish is added to more flour, yeast and water. After that, it goes through a rising and shaping process and is then baked.

It turns out that there are more than a few takeaways from the first round of baguettes that any would-be baker should be aware of. The temperature of a kitchen is incredibly important to the fermentation process, and working in a cool kitchen requires a much longer rising time. Otherwise, the yeast won't activate enough and you'll get logs of dough with almost no air pockets where there should be bread. In a similar vein, oven temperatures aren't always what they seem, and it is incredibly important to keep an eye on the oven, lest a 26-hour baking product comes out burnt even though it baked for eight minutes less than the recommended time.

At this point in the investigation, it was decided that perhaps baguettes were too ambitious and that the experiment should refocus on an even more basic product: the humble sandwich loaf. No starter, no shaping of the loaf, just make the dough, let it rise and throw it in a loaf pan. This also resulted in failure, for the same reason. The cold kitchen prevented the dough from rising the appropriate amount and that, combined with an impatient baker, resulted in a flour-based doorstop being audibly thumped out of the loaf pan.

After the sandwich loaf was repeated enough times that it came out resembling bread and even tasting delicious, in the form of a panini sandwich, the investigation turned towards the most time-intensive part of the project—made-from-scratch sourdough, complete with a homemade starter.

Sourdough gets its name and flavor because instead of using commercial yeast, its leavening agent comes from a mixture of flour and water that is continually fed until the natural yeast from the product can be used to make bread. This is what gives sourdough bread its unique flavor, and it requires about a week of daily effort to accomplish even a functioning starter.

Every day the starter must be fed with carefully weighed out flour and equally labor-intensive water, which must be at a specific temperature in order to inspire growth in the yeast without killing it. The kitchen must also be warm enough to facilitate growth, and in the cold Seattle confines of this experiment, the starter only grew on days when it was sunny in the kitchen, which can be difficult in a city that averages 308 cloudy days per year.

Still, after a week of contributing pounds of precious flour, the sourdough starter was ready for the final test. Every instruction was followed—the flour and

After going through 37 pounds of flour, Bendon has subsequently learned how to make bread.

water mixed so as to encourage gluten development, the starter fed and then introduced to the dough, and the pinching method used to carefully fold the mixture over itself to produce the proper loaf.

There was much anticipation when the bread went into the oven. In only a short time, the culmination of weeks of work would be ready—a delicious bread made literally from scratch. It was terrible. The bread was so rock-like that by the time it cooled down, it couldn't be bitten into, and the middle was so dense that it was barely recognizable as bread at all.

When made at home, bread can be fun or frustrating, is always time-consuming and sometimes headache-inducing. So go ahead and give bread baking a try—you might waste a little of flour, but you'll gain a great deal of respect for your local baker.

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Contact Us

Assocom Institute of Bakery Technology & Management
AIBTM, Plot No. 30/25, Knowledge Park - III,
Greater Noida - 201306, U.P. (Delhi NCR).
T: +91-120-2977727 **F:** +91-120-2977726 **M:** +91-9810158318
E: aibtm@aibtm.in **W:** www.aibtm.in

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