What’s Rising
San Francisco Baking Institute Newsletter • Fall 2003

yeast: facts every baker should know
by Jeff Yankellow, Baking Instructor

What is yeast? Most bakers know the
obvious: yeast is used to ferment flour
and leaven dough. Some know even
more details, including how yeast is produced, the
different types and what it actually does in the
dough. But there are quite a few bakers who know
very little about yeast, and this is no surprise.

The scientific discovery of yeast as the microorganism
responsible for fermentation was as recent as the
mid-19th century when Louis Pasteur, a French scientist studying
the production of wine, was able to prove that yeast was responsible
for fermentation. It wasn’t until later that methods were developed
for isolating and culturing pure strains of yeast.

Yeast has been used for the fermentation of cereal grains for about
4,000 years. It is responsible for the first leavened breads and the
evolution of modern baking as it is today. There are two general
categories of yeast in regard to the
production of bread. They are wild
yeast, used in the sourdough process
and commercial yeast, which is manu-
factured in a factory. This article
focuses on commercial yeast. We will
cover the entire process from start to
finish, including the origin of yeast, the
production of yeast, types of yeast and
the role of yeast in fermentation.

What Exactly Is Yeast?
Yeast is a single cell microscopic
organism that is elliptical or circular in
shape. It consists of a permeable cell wall and a nucleus that controls
the activity of the organism. The rest of the cell is made up of
cytoplasm and food storage.

One gram of fresh yeast consists of approximately 25 billion cells.
If they were to be lined up end to end, there would be about 300
yeast cells per inch. This is interesting to note, because as small as it
is, yeast is solely responsible for the fermentation which gives a
good loaf of bread its complex taste and aromas. Without yeast there
would be no artisan bread as we know it today.

Baker’s yeast is one species of yeast from the family Saccharomyces
cerevisae. Scientists have isolated a particular strain that is especially
well-suited for the baking process. The name is an indication of
how it functions; sacchar meaning sugar loving or feeding, myces
meaning mold, and cerevisae being a word that was once used for
beer. When given moisture, food, and the proper environment or
median, it will function properly. Baker’s yeast is the same species
used for the production of alcoholic beverages and flavor extracts.

continued on page 3

“I am going to learn to make
bread tomorrow. So you may
imagine me with
my sleeves rolled
up, mixing flour,
milk, saleratus,
etc., with a deal
of grace. I advise
you if you don’t
know how to make
the staff of life to
learn with dispatch.”

Emily Dickinson, American poet (1830-1886)
I think most of us would agree that for the last six to eight years, the quality and the reputation of “Artisan” breads in the United States has grown significantly. Many factors show proof: more consumer enthusiasm and excitement for the product, and—technically speaking—more ingredients, equipment and facilities designed for the production of these breads.

What concerns me lately is the new emergence on the market of a lot of par-baked products bearing the name of artisan bread. Don't get me wrong—I am not against the par-baked process. In fact, I am a real believer in this technique.

So why all the fuss? A lot of par-baked breads reaching the market nowadays don’t reach the quality parameters that true artisan par-baked bread should have. Most of the time, the bread is over-baked the first time to compensate for a lack of equipment or knowledge and the bread reaches the public in a state of quality far from its expectation. Flaking crusts, advanced stages of staling, and inferior flavor are only some of the main noticeable defects.

I definitely realize that there is increasing demand for these products, especially at the supermarket level, and this could represent an interesting market for some bakeries. However, one can ask if this market is good for the future of artisan bread. More and more customers getting this type of lower quality bread with artisan bread on the label may start to associate the name “artisan” with poor quality and generalize this opinion to all artisan breads, getting a negative image of the product. I believe that in the long run, this could negatively affect the entire artisan baking industry.

So shall we stay away from the par-baked process? Certainly not—as I mentioned earlier, I am a big supporter of the par-baked process. Because of its frozen state and longer shelf life, par-baked bread can easily be distributed to more remote locations and reach communities that otherwise might not have access to it, such as towns too small to support a high-quality bakery or restaurant business. And—as everybody knows—the more we expose consumers to a product, the larger market we can create.

However, we must take into consideration that when we create the larger market, we ensure that the product is made according to the rules of the art. Precise baking processes, the right equipment (most of the time expensive to buy and to run), correct distribution systems and competent second baking at the end-user locations are just a few key points leading to good product quality. Let’s not forget that if the product is presented as Artisan Bread, the baker must ensure that the bread maintains its intended quality.

I realize that making good par-baked bread is not easy and can be expensive. But remember, it was not easy to make the transition from a mechanized pan bread process to real Artisan bread—and we did it successfully.

So, do we want to sacrifice all of these efforts we have made to build the reputation and quality of artisan bread in this country just to satisfy a market segment in need of “readily available artisan bread?”

In my opinion, that would be a very big risk to the future integrity and success of the Artisan Baking industry.

What do you think? Email Didier at didier@sfbi.com

If you are interested in learning more about par-baked breads, consider our class 8/9-8/13: Par-Baked Breads and Frozen Dough Techniques
Why Is Yeast Important?
Yeast plays a major role in the bread making process. It is responsible for the fermentation of the sugar which is important for the production of gas, alcohol, and organic acids in the dough.

Yeast can survive in two environments: aerobic and anaerobic (with and without oxygen). When oxygen is present, yeast consumes the sugar and reproduces.

In the baking process the conditions are different. From the time mixing starts until about fifteen minutes into the first fermentation there is a small amount of oxygen present in the dough. This presents a small chance that the yeast will complete one budding cycle during this time. It takes about twenty minutes for the yeast to bud. Therefore, there is a small window of opportunity to reproduce. However, it is likely the environment will be anaerobic before this happens.

With no oxygen, yeast has about twenty times less energy than when in the presence of oxygen. Instead of using the sugar to multiply, it will convert it into carbon dioxide and ethanol (alcohol) generating fermentation.

From 100 parts of sugar, yeast produces approximately equal parts alcohol and carbon dioxide, as well as additional products that contribute to the flavor and aroma of the bread during and after baking. These include glycerol, organic acids and aldehyde. In total there are over 200 aromas in bread produced as a result of fermentation, assuming fermentation time is long enough.

It is important for the baker to understand that this maturation will directly influence the mixing and fermentation times. If dough is mixed very little it will need to ferment longer to develop or mature and vice versa.

How Is Yeast Made?
Until the late 19th and early 20th century most bakers were still relying on wild yeast or natural levain to ferment dough. Commercial yeast was new and not immediately available to large numbers of bakers. But it was not long before commercial yeast production grew and bakers realized that their bread and baking process could benefit greatly from the ability to add a known quantity of yeast to the dough.

As mentioned earlier, yeast will use sugar as fuel for reproduction if oxygen is present. Commercial production of yeast is possible because of its natural aerobic cycle. Yeast can reproduce at a remarkable rate under the proper conditions. It does so by a process called budding. Budding is the process of the yeast cell gradually splitting in two. The mother yeast cell will form a small growth off the side of the cell that will eventually split. This daughter cell will be identical to the mother and will begin to reproduce on its own. In five days yeast can reproduce 100 times its quantity. In ten days, one ounce of yeast can multiply to over 600,000 pounds.

Yeast is grown on a medium of molasses and water. Upon delivery to the factory, the molasses is cleaned through sterilization to become food grade. It has 50% fermentable sugar and many essential nutrients for the yeast. It is mixed with water to form a mixture called wort, which is the median for commercial yeast production.

“there are over 200 aromas in bread produced as a result of fermentation...”
The production of yeast takes place in a very controlled environment and starts in a sterile lab. A small, pure culture of an isolated strain of yeast, chosen by the manufacturer, is used to inoculate a mixture of water, sugar, and nutrients. Different companies have their own proprietary strains, but in general the process is the same. The amount is no more than would fit on the head of a pin. As the amount multiplies it is transferred to progressively larger and larger vessels called fermenters. The final fermenters may be up to 50,000 gallons or more.

During the entire process the levels of sugar, oxygen, nitrogen, phosphorous, and nutrients are regulated. This is usually done by computers which are programmed for each specific type of yeast being produced. All of the ingredients present during the growth phase of the yeast will greatly affect the final product and its performance.

The finished yeast must possess all of the qualities desirable to the baker, including good production of gas and alcohol. This is achieved with strict controls during the reproduction cycle. The reproduction of the yeast during the manufacturing process is regulated by the amount of food given to them. The ratio of nitrogen to phosphate is important to the ability of the yeast to produce gas. Sugar content is important for stability and is provided in the form of molasses. As previously mentioned, the vital oxygen for the reproduction cycle is supplied by high quantity of purified air. In the later stages of the manufacturing process, the amount of air pumped through the tank per minute is equal to the volume of the tank itself. This aggressive pumping is often used to keep the mixture moving as opposed to using mechanical methods such as paddles or stirrers. There is also special attention paid to the temperature and pH of the growth medium. Each of these parameters influences the reproduction cycle and final quality of the yeast.

The medium is transferred to larger and larger tanks that are aggressively aerated until it is determined that the concentration of yeast is high enough to process and package. Once the yeast reaches the largest and final tank and the concentration is determined to be at the proper level for processing and packaging, the yeast will be separated from the mixture and manufactured into a number of forms.

Why So Many Types of Yeast?
There are about six main types of yeast available to the baker. Some are wet or fresh and some are dried. It is important to know that they all perform equally well when used properly. Which type is used will generally depend on the size of the bakery and the availability through local suppliers. The main types of yeast used in bakeries are:

- Cream yeast
- Compressed yeast
- Active dry yeast
- Protected active dry yeast
- Instant dry yeast
- Deactivated Yeast
- Frozen Yeast

Cream Yeast
At the end of the manufacturing process the growing medium or solution will contain 4-8% yeast solids. These solids are separated in a liquid form and repeatedly washed and centrifuged to concentrate them. The first result of this process is called the cream and has a moisture level of about 80% and a solid level of 18-20%. Cream yeast is the processed form least available to bakeries. It is primarily used by large wholesale bakeries that are located within 700-1000 miles of the yeast factory. Without this proximity, it is difficult to deliver the yeast at its optimum level of freshness. These bakeries usually use the equivalent of 25,000 pounds of compressed yeast per week with an automated measuring system.

Compressed Yeast
If the cream yeast is processed further, the next step is a compressed form. Compressed yeast is the result of passing the cream through a rotating vacuum filter. The moisture content is reduced to 70% and the yeast is extruded in a semi-solid sheet that is then packaged in a crumbled form or pressed into blocks. Crumbled yeast is sold in 50 pound bags and preferred by larger bakeries for easy scaling. It must be handled carefully and the bag should be closed tightly after each use and not left out of refrigeration for more than thirty minutes per use. Compressed yeast is generally sold in one pound blocks that are individually wrapped or packaged in packs of five. The shelf life is 3-4 weeks. The baker needs to be aware that this means 3-4 weeks from the date of manufacturing. Therefore it is not advisable to use fresh yeast unless the bakery has a reliable source.

Compressed yeast that is fresh should be even, light brown or almost white in color and crumble very easily. Color will vary among brands as a result of contact with the pigments in the molasses, but dark brown may be an indication of old or improperly stored yeast. The yeast should have a pleasant mild smell. Softness, gumminess, and molding are good indications that the yeast is not fresh.
For many years fresh yeasts have been popular among bakers, but more and more they are being replaced by dry forms that are more shelf stable and consistent.

or has been stored at too warm a temperature and should not be used. Both compressed and crumbled fresh yeast may be added to the bowl at the beginning of the process. For many years this type of yeast has been popular among bakers, but more and more it is being replaced by dry forms that are more shelf stable and consistent.

**Active Dry Yeast**

The oldest form of dry yeast is active dry yeast. Active dry yeast has a moisture content of 7.3-8.5% as a result of drying the yeast on a conveyor type dryer. Prior to drying the compressed yeast may be treated with processing aids or antioxidants. It is extruded in thin strands before being dried into dense, non-porous particles of yeast in the shape of tiny granule spheres. The yeast cells that survive the drying process are protected by an outer coat of dead yeast. For this reason the dry yeast has to be rehydrated in approximately four to five times its weight of 100-115°F water, without agitation for 10-15 minutes. This will wash away the dead yeast and reactivate the dried cells.

It is important to observe the temperature range to achieve maximum results from the yeast. Some brands of active dry yeast may be rehydrated in water as low as 90°F, but water much lower than that will reduce yeast activity in the dough. If the water is slightly below 70°F, there will be 30-40% less activity from the yeast and the yeast cells may leak out some of their contents, including glutathione which may produce a slack dough because of its natural reducing property. If the water is lower than 40°F, many of the yeast cells will die. The same care must be taken to avoid temperatures above those that are recommended by the manufacturer. At these higher temperatures the yeast will be damaged and less effective.

After the yeast has been reactivated it may be added to the mixing bowl at any time of the process. There are not many benefits to using active dry yeast. One may be that it tends to provide a more yeasty flavor to the bread. The other is that it has a slight reducing effect on the dough. Yeast cells contain a substance in them called glutathione. Glutathione is a reducing agent that relaxes the protein in the dough. It is contained in the cell of living yeast and only becomes accessible once the yeast has died. Because deactivated yeast has a high content of dead yeast cells, it is sometimes favored for its relaxing properties in the production of pizza dough or pan bread. The effect of the glutathione in the dough allows for easier shaping and less shrinkage.

One of the major benefits of using any kind of dry yeast is the shelf life. Active dry yeast has a shelf life of two years unopened in a vacuum sealed package, at room temperature. Once it is opened, it has a shelf life of three months under refrigeration and 6 months in the freezer. Stored at room temperature in an unprotected container, it may lose up to 10% of its power per month.

One of the disadvantages of using active dry yeast is that it requires the extra step of rehydration that takes time, effort and presents opportunity for error. When calculating the amount to use in the formula, the weight of the active dried yeast should be equal to 50% of the weight of fresh compressed yeast. The difference in weight is water.

**Protected Active Dry Yeast**

Protected active dry yeast is a form of active dry yeast that has been treated with an emulsifier and antioxidant, and has been dried to a level of 5-6% moisture. This allows for better stability. Because of this stability it can be exposed to air and other ingredients with no loss of effectiveness. It is important that the dry ingredients in the mix do not exceed a moisture level of 8-9% as this will affect the stability of the yeast.

**Instant Dry Yeast**

A more recent form of dry yeast is instant dry yeast. It is called instant because it can be mixed with the flour or added to the bowl after the water and flour have been mixed without any previous rehydration in water. Instant dry yeast is more rod-like in shape and is dried more rapidly than active dry yeast. The drying is done on a fluid bed dryer, with a continuous stream of air, to a level of 5% moisture.

The strains of yeast are specially chosen for their ability to survive the drying process. Because less of the yeast cells die during this process, approximately 25% less is needed than when using active dry yeast. The manufacturer generally recommends that the weight used is equal to 30% of the weight of the compressed yeast. The difference in weight should be replaced with water. For artisan baking, dough temperatures are generally lower to allow for longer fermentation time and 40% of the weight of fresh yeast has been shown to perform better.

This drying process is faster and creates very porous particles of yeast that are sensitive to oxygen and moisture. This is why it is packaged in specially designed vacuum sealed bags. Instant yeast has a shelf life at room temperature of two years unopened. After it has been opened it can be kept in the refrigerator for three months or in the freezer for six months in a sealed container.

Dry yeast should not be placed in direct content with water that is below approximately 70°F. At these lower temperatures the yeast cells may release some of their contents (glutathione) producing a slack dough with less fermentation activity. If cold water is needed for the dough, it is a good practice to add the yeast to the bowl after the water and flour have been blended.

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As a student in Artisan I, you will become familiar with the terms “short mix,” “improved mix” and “intensive mix” while learning what types of flour you should be using and the proper mixing techniques for every bread imaginable. Through demonstration and discussion, you will learn the relationship between mixing and fermentation; how the profile of bread changes when you add an additional ingredient such as butter or sugar; overall knowledge about the most common preferments used in bakeries today; and how to use baker’s math, along with much more. We use the classic baguette to teach the fundamentals, but you will also learn to make Rye Bread, Whole Wheat Bread, Multigrain Bread, Pan Bread and Braided Egg Bread. The skills you learn in this class are directly applicable for a position in a professional bakery or for a serious home baker. When you finish this class, you will be able to write recipes instead of following them! Limited to 12 to allow for personal instruction, spots fills up quickly so reserve early. Be sure to consider our dates for the Artisan II workshop, scheduled to allow you 2 consecutive weeks of intensive training.

Building on the skills you gained in Artisan I, Artisan II takes you full speed ahead into the world of sourdough bread. To become a truly skilled baker, you must learn how to control sourdough and not let the sourdough control you! Unravel the complex world of wild yeast and bacteria; start your own sourdough starter; adjust the feeding schedule and take your own version of the starter home. Experiment with different styles of starters and fermentation. The extensive hands-on portion of this 5-day workshop includes sourdough breads made with liquid and stiff starters, Olive Bread, Raisin Bread, Ciabatta with a poolish and many other favorites. If you are serious about becoming a better baker, this is a class that you do not want to miss! We encourage you to take Artisan I before enrolling in Artisan II unless you already have a thorough understanding of baking fundamentals.

This newly adapted version of Advanced Artisan Breads is designed for experienced bakers interested in refining their skills and deepening their overall knowledge to become even better at their craft. During this illuminating workshop for those who love their profession, you will learn about and practice a variety of interesting breads using advanced methods. You will experiment with ways to fit new breads into an existing product line with fresh techniques such as sourdough to make sweet breads and miche using high ash flour and 230% (1) starter. Whole grain breads will be produced using whole grain starters and no white flour. You will work with difficult flours such as rye and spelt. Retarding techniques will be demonstrated with Baguettes and Ciabatta—retarded before shaping, and Whole Wheat—retarded after shaping. Because this more advanced class is not designed for beginning bakers, students need to have taken Artisan I and II or have extensive experience and a thorough understanding of the baking process, including science and terminology. Experienced bakers will be inspired by the newfound understanding and marketable skills they take away from this seminar!

quick class facts

• All courses run from Monday through Friday.
• Courses begin at 8:30am on Monday and 8:00am for the remainder of the week. Classes end at approximately 5pm each day.
• Acceptable attire is a baker’s uniform of black or houndstooth pants and a white shirt and/or jacket. Hat optional. Wear comfortable non-skid shoes.
• Students should bring a notebook, writing utensils, and a calculator to class. Cameras are optional.
• As a courtesy to our instructors and fellow students, cell phones must be shut off or left on “vibrate” mode during class.
• SFBI offers special rates at select hotels near our campus. Most of these hotels offer direct shuttle service to and from our school. Please see our website www.sfbi.com for a complete list or call us at 650.589.5784 for details.
• We are accessible from downtown San Francisco via a 30-45 minute trip on public transportation, or a 10-15 minute drive for students renting a car.
Chocolate desserts of every variety are always a favorite with consumers! Learn everything you need to know about this alluring ingredient: how beans are harvested; what really defines a chocolate and classifies it as “quality;” and understand the basic principles of tempering. We will use the best of the hands-on techniques and mediums that are applied to chocolate today. You will use this popular ingredient to create small, “melt-in-your-mouth” truffles, decadent chocolate cakes and silky smooth mousses. This essential class gives you the foundation and stepping stones you need to create satisfying, exciting products that will have your customers coming back for more!

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<thead>
<tr>
<th>Date</th>
<th>Course</th>
<th>Description</th>
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<tbody>
<tr>
<td>January 26-January 30</td>
<td>All About Chocolate</td>
<td>As American palates become more and more sophisticated, the traditional donut isn’t enough to keep up with changing tastes. In this class, you will learn how to create finer, more profitable alternatives to the muffin and donut, by expanding your product line to include items that appeal to retail and wholesale customers alike. Combining theory with hands-on practice, you will gain a thorough understanding of how to produce a variety of sweet yeasted pastries and puff pastry. Learn how to make the classic Croissant and its variations. See what makes Danish different, and how it can be shaped appealingly to set your products above the competition. We will also cover sweet enriched doughs including a naturally fermented Panettone. See how to use the same sweet dough to make a first-class cinnamon roll and sticky bun. We will make brioché in its original classic form and in a laminated version. You will also learn the art of making flaky and delicate puff pastry, and how it can be used to make beautiful breakfast pastries, such as apple turnovers, that are easy to produce and profitable. Don’t miss out on this opportunity to keep up with customer tastes and needs in the changing marketplace!</td>
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<td>February 2-February 6</td>
<td>Breakfast Pastries</td>
<td>If you are interested in building a foundation based on classic European pastry techniques or refining the skills you already have, this class is for you. Our comprehensive cakes and creams workshop will add new layers of competence to your skills. Instead of just learning recipes you will learn techniques. You will learn how to prepare the basic cakes and fillings used in French pastry and how they can be assembled and cross-utilized to create a number of finished cakes. Practice cake mixing technology for sponge cake, chiffons, creaming and foaming and learn how to make a wide variety of creams such as Chiboust, Mousseline and Buttercreams. During the significant hands-on portion of the class, you will create a wide variety of beautiful cakes including Bittersweet Mousse Cake, Strawberry Fraisier, St. Honore and Hazelnut Nougatine Mousse Cake, Strawberry Fraisier, beautiful cakes including Bittersweet Mousse Cake, Strawberry Fraisier, St. Honore and Hazelnut Nougatine. This class starts with the basics, so everyone is welcome, with or without experience.</td>
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<tr>
<td>October 25-October 29</td>
<td>Cakes and Creams</td>
<td>Come learn from German Master Baker Dietmar Elbaker, during this week focused on whole grain and German breads. If you have worked with doughs containing a high percentage of rye or whole grains, you know how difficult they can be to handle. This class will solve all of your problems and answer all of your questions. You will see what to expect as you increase the percentage of rye in a formula. Dietmar will teach you how to adjust your mixing times and fermentation to get exceptional results, even when using 100% rye! Learn to make traditional breads including sourdough rye, whole grain spelt bread, and the traditional pumpernickel, which bakes for 36 hours! You will also learn how to make traditional Bavarian pretzels and Kaiser rolls. After this week, you will see how easy it is to add these breads to an existing bread line. They appeal to ethnic clientele, customers with dietetic restrictions, as well as those seeking breads with more pronounced flavors and textures. Don’t miss this opportunity to learn from an expert!</td>
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<td>June 21-June 25</td>
<td>German and Whole Grain Breads</td>
<td>From summer’s sun-drenched strawberries to autumn’s clean, crisp apples, there are fruits available year-round to inspire desserts for every occasion. Learn how to work with the seasons to transform the simplest fruit into the most memorable dessert. You will create the well-known fresh fruit pastries and puddings, that are easy to produce and profitable. Don’t miss out on this opportunity to keep up with customer tastes and needs in the changing marketplace!</td>
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<td>August 2-August 6</td>
<td>Fruit Desserts For Every Season</td>
<td>Par baked breads and frozen dough are becoming a more popular and profitable choice for the modern bakery. This timely workshop with SFB Head Instructor Didier Rosada and special guest Roy Chung—a full-time consultant in Asia for U.S. Wheat Associates—will show you how you can boost sales in your bakery by starting a par baked or frozen dough line. Learn about the techniques, ingredients and equipment you need to introduce a new, innovative alternative to your customers.</td>
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<td>August 9-August 13</td>
<td>Par Baked Breads and Frozen Dough Techniques</td>
<td>Holidays are steeped in tradition and associated with warm memories. The pastries and desserts that we each identify with are modern day reminders of a forgotten art. In this class, you will finally learn the time-honored secrets and techniques for producing an array of cakes, cookies and tarts that are rich in culture, tradition and flavor. A wide variety of holiday specialties will be covered, including Panettone, Amaretto Cake, and Chocolate Truffle Cake. Discover why these beautiful desserts and pastries have remained holiday favorites for generations and introduce your customers to a wealth of traditional and appealing flavors!</td>
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<td>September 13-September 17</td>
<td>Holiday Pastries</td>
<td>A 50% deposit is required to reserve your space in class, payable by check, cash or credit card (MasterCard, VISA, American Express). The remaining amount is due on the first day of class.</td>
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**How to Register**

Register online at www.sfbi.com/register.shtml

call 650.589.5784 to register over the phone

tuition for all classes is $950; tuition includes daily lunch

A 50% deposit is required to reserve your space in class, payable by check, cash or credit card (MasterCard, VISA, American Express). The remaining amount is due on the first day of class.
bread & pastry training 2003: graduates share experience

The first class of SFBI’s 14 Week Bread and Pastry Training Program, launched in April, 2003, graduated in July. We asked students to share their experiences in the program, so that we can continue to enhance our curriculum. The following are some of the comments we received from among our twelve graduates....

Sharman Kobayashi

“The program delivered more than I had even hoped for. The pacing was perfect—challenging (there was never a pause or slowdown) but not overwhelming. I was very pleased that the instructors were so sensitive to the rate at which we students could absorb information and perform. As a person who has watched a lot of classroom teachers, I felt that they were all superb at maintaining momentum in the classroom while ensuring that everyone was adequately supported.”

“Instructors were knowledgeable in their field, up-to-date on current trends, and good at imparting their knowledge. They were friendly, approachable, and made learning enjoyable. The small class size played a big part in the great quality of our experiences at SFBI.”

“I am very glad to have had the opportunity to attend SFBI both for the professional training it has given me and for the genuinely friendly and supportive staff that I met. I feel that I have a good grounding in the underlying principals and fundamentals of baking...It has been an intense 14 weeks but while I was there I looked forward to each day of the program and I would gladly enroll if I had to do it all over again.”

Joe Burns, now working as a baker at Acme Breads in San Francisco:

“I feel most of the products we made in class were and are better than what you can purchase from even some of the bakeries in the Bay Area.”

[Looked at three other schools before choosing SFBI]... “SFBI didn’t seem as pretentious as the others. [The training] was going to be more hands-on without the waiter and table setting training/education you needed to do at the other places.”

“Overall, I would rate the 14 Week Baking & Pastry Arts Program at SFBI as GREAT!”

“Having SFBI as a reference I can count on now and in the future gives me confidence that my baking career will be successful.”

David Schmidt, now working as a baker at Nugget Markets and Village Cake Shoppe after changing careers from the IT industry:

“My training at SFBI gave me the professional foundation for growing and succeeding in the baking industry. I thank the instructors and staff for providing a space where this midlife-changing IT professional could fulfill his dream to build the perfect passion fruit tart (and baguette, and croissant, and ...)”

“Having SFBI as a reference I can count on now and in the future gives me confidence that my baking career will be successful.”

All Are Welcome

Our inclusive program requires students to have just two qualities: a passion for baking and a strong commitment to learning.

See for Yourself!

If you are interested in joining the Spring 2004 class of the 14 week training program, plan a visit to our school. We will be happy to give you a personal tour and provide you with more information about our program.
If you are committed to starting a new career as a baker, or enhancing your current career in the baking industry, our 14 Week Bread & Pastry Training Program will give you the foundation you need to achieve success.

SFBI recognizes that not every student has the time and budget available for six months or more of training. At the same time, you want to be sure you receive the very best education available. We designed our progressive program to meet these specific needs.

Our highly concentrated, focused curriculum includes an unusually high level of hands-on practice and deliberately small class sizes. In our spacious new facility, just a short drive from downtown San Francisco, we offer a technologically advanced, welcoming environment where we introduce students to artisan baking at its best.

For two weeks of our program, you will have the unique opportunity to hone your skills in France—the birthplace of artisan baking. This unique culinary adventure will introduce you to the history, tradition and new, trend-setting practices of European baking in the best way possible: first-hand experience. At The Institut National de la Boulangerie, one of France’s most respected baking schools, you will train with French instructors as you stay in nearby accommodations with your fellow students and absorb the local culture.

Visit us online at www.sfbi.com for a fully detailed curriculum along with information about tuition and housing, or call us at 650.589.5784 and ask for an application package to be mailed or emailed to you.
The benefits of using instant dry yeast are worth noting. It is extremely shelf stable, allowing for storage at room temperature for up to two years. Therefore, if there is not a reliable source of fresh yeast available, instant dry yeast is a good alternative. It can be added directly to the dough in its dry form, eliminating the step of rehydration.

An additional benefit of using instant dry yeast is that it can be left out at room temperature longer than fresh yeast with no loss of activity. This allows the baker to scale the yeast one day before use and leave it at room temperature without hurting the final product. There is also less urgency while scaling the day’s dough to get the yeast back in the cooler.

**Deactivated and Frozen Yeast**

Fresh compressed and dry instant yeast are the most common forms of yeast used in bakeries, but there are two more that are important to mention.

One is a special type of instant yeast for frozen dough. This is a free-flowing frozen form of instant yeast that is designed to be used when the shelf life of the frozen dough is intended to be longer than two weeks. It is used at 40% of the weight of compressed yeast and should be kept out of the freezer as little as possible during use.

The other form of dry yeast is **deactivated** yeast. As mentioned earlier, yeast contains a substance called glutathione which is not accessible under normal conditions. Deactivated yeast is dead yeast in which the glutathione has been made easily accessible. It is used as a reducing agent in the dough for easier shaping and machinability. Deactivated yeast is very powerful and is generally used at a level of .1% based on the weight of the flour. There are different kinds of deactivated yeast that behave differently. For precise dosage the baker should check with the manufacturer.

Deactivated yeast provides absolutely no fermentation activity; it is strictly designed to be used as a reducing agent for increased extensibility.

**In Summary**

As we have shown, there are many types of yeast for the baker to choose from. Keep in mind that they all perform equally well when used properly. There is no denying that fresh compressed yeast has the most romantic appeal, but it performs no better than newer forms of yeast that have been developed to ease the challenges of the baker and produce more consistent breads.

There are many important factors to consider when choosing what type of yeast to use. They include frequency of delivery, availability, storage conditions, storage space, and production schedules. And...despite the eternal assumption of the baker, don’t always blame it on the yeast.

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“**There is no denying that fresh compressed yeast has the most romantic appeal, but it performs no better than newer forms of yeast that have been developed to ease the challenges of the baker and produce more consistent breads.**”

Special thanks to Lesaffre Yeast Corporation for providing our diagram and background information for this article.

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“I compare a pastrycook who makes good colifichets to a distinguished fashion designer, endowed with perfect taste, who can make charming things with very little material. In the same way, out of almost insignificant scraps of pastry, we have to create pleasing and graceful things that also tempt the appetite.”

Antonin Careme (Marie-Antoine Careme) (“the cook of kings and the king of cooks”) (1783–1833)
There is no better opportunity to increase sales in the bakery than with seasonal foods. Fall brings the baker an abundance of seasonal products that can be incorporated into breads and pastry. Among them are beautiful fresh figs, apples, pears and pumpkin. This formula is an adaptation of the classic brioche with the addition of pumpkin. Pumpkin is mild in flavor and most recognizable when it is paired with the classic spices of nutmeg, cinnamon and cloves. This bread is an attractive addition to a holiday case and can be enjoyed for breakfast or as a snack.

**Ingredients, Sponge**

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Baker’s%</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flour</td>
<td>100</td>
<td>.274 LBS</td>
</tr>
<tr>
<td>Water</td>
<td>60</td>
<td>.164 LBS</td>
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<tr>
<td>Yeast (instant)</td>
<td>.1</td>
<td>.001 LBS</td>
</tr>
<tr>
<td>Total</td>
<td>162.1</td>
<td>.438 LBS</td>
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</tbody>
</table>

**Ingredients, Final Dough**

<table>
<thead>
<tr>
<th>Ingredient</th>
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<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flour</td>
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<tr>
<td>Milk</td>
<td>5</td>
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<tr>
<td>Whole eggs</td>
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<tr>
<td>Egg yolks</td>
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<tr>
<td>Yeast (instant)</td>
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<tr>
<td>Salt</td>
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<tr>
<td>Pumpkin puree</td>
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<tr>
<td>Cinnamon</td>
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</tr>
<tr>
<td>Nutmeg</td>
<td>.15</td>
<td>.001 LBS</td>
</tr>
<tr>
<td>Ginger</td>
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<td>.001 LBS</td>
</tr>
<tr>
<td>Cloves</td>
<td>.12</td>
<td>.001 LBS</td>
</tr>
<tr>
<td>Sugar</td>
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<td>.088 LBS</td>
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<tr>
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<tr>
<td>Butter</td>
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<td>.307 LBS</td>
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<tr>
<td>Sponge</td>
<td>50</td>
<td>.438 LBS</td>
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<tr>
<td>Total</td>
<td>342.44</td>
<td>3.000 LBS</td>
</tr>
</tbody>
</table>

**Procedure**

**Sponge**

- **Mixing**: Mix until ingredients are well incorporated
- **Fermentation**: Ferment 12-15 hours at 75°F

**Final dough**

- **Mixing 1st speed**: 5 minutes
- **Mixing 2nd speed**: Intensive Mix (gluten fully developed) Hold back ½ pumpkin and butter until end of development

**Desired dough temperature**: 75 to 77°F

- **First fermentation**: 1 hour 30 minutes
- **1 punch and fold at 45 minutes**

**Divide**: 2 oz rolls

**Rest Time**: 15 to 20 minutes

**Shape**: Round shape

**Proof**: 1 hour 30 minutes on parchment lined sheet pans

**Egg wash and top with pearl sugar**

**Bake**: 380°F for 15 minutes until light brown on top and bottom

**baker’s tip: fresh from the freezer**

*b*Yankellow, Baking Instructor

This time of the year is the beginning of the busy season for most bakeries, so why not get a headstart? The freezer is a great tool to use, and not just for pastry. It will allow you to offer fresh baked breads and pastry throughout the day without sacrificing quality. Frozen dough can be a real timesaver. Although a minimum amount of dough conditioner or oxidizer such as ascorbic acid may be necessary, dough can be frozen with little harm for up to two weeks. Shaped dough can be pulled from the freezer, defrosted, and proofed and baked with little change in the procedure. Laminated dough works extremely well and so does lean bread dough. If frozen yeast is not available, it is recommended that the amount of yeast in the formula be increased by 1 to 2 times to compensate for damage to the yeast during the freezing process.
THE BREAD PROJECT & SFBI

The Bread Project is a non-profit group with an independent board of directors. The organization’s goal is to provide comprehensive training to people interested in the baking trade. SFBI and The Bread Project have created an alliance that we hope will greatly benefit both prospective bakers and the baking industry. We are entering our third year with this project.

Educational programs that focus on baking are prohibitively expensive for many people. We hope that this project will become a model for the education and training of many generations of future bakers. Currently the program will be funded through a variety of grants. The goal is to create an industry-sponsored fund that will give scholarships to the students, freeing The Bread Project from continual fund-raising. We believe that change has to happen regarding the training of our future bakers. SFBI is proud to be taking a first step!

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