

NAME _____

HOUR _____



VIDEO WORKSHEET

1. Why is it important to wash your hands before working in the kitchen?
2. Why is it important for the water to be the correct temperature to mix the yeast in?
3. What do fats/shortening do in yeast breads?
4. Name two types of flour available for making bread.
5. What does kneading do for the bread?
6. How can you tell if you have kneaded the bread long enough?
7. How many times should yeast bread rise/proof before baking?
8. Can yeast bread dough be refrigerated overnight and baked the following day?





VIDEO WORKSHEET

Teacher's Key

1. Why is it important to wash your hands before working in the kitchen?

For food safety. You will be kneading the dough with your hands and you need to have clean hands and surfaces to not spread bacteria.

2. Why is it important for the water to be the correct temperature to mix the yeast in?

Yeast is actually a living organism and if the water is too hot it will kill the yeast and the dough will not rise. Bread rises because of carbon dioxide provided from yeast.

3. What do fats/shortening do in yeast breads?

Fats/shortening make bread soft and tender.

4. Name two types of flour available for making bread.

Buckwheat, rye, soy, whole wheat, rice

5. What does kneading do for the bread?

It makes the dough smooth and elastic. The gluten protein from the flour forms the structure.

6. How can you tell if you have kneaded the bread long enough?

When an indentation in the center of the bread stays in place.

7. How many times should yeast bread rise/proof before baking?

Two times.

8. Can yeast bread dough be refrigerated overnight and baked the following day?

Yes, absolutely. If time is an issue, refrigerate the bread after shaping it.





RECIPES

"Cool-Rise" White Bread

- 3 1/2 to 4 cups all-purpose flour
- 1 package quick-rise yeast
- 2 tablespoons sugar
- 1 1/2 teaspoon salt
- 1/2 cup water
- 1/2 cup milk
- 2 tablespoons vegetable oil/soft margarine or butter

In large mixing bowl, combine 1 1/4 cups flour, yeast, sugar and salt; mix well. Heat water and milk to about 125° F. (this feels like very hot tap water). Add liquids with oil to flour mixture. Blend with a mixer at low speed until just moistened and then beat at medium speed for 3 minutes. By hand, stir in 2 1/4 cups flour to make a soft dough. Use remaining flour to knead the dough on a floured surface until smooth and elastic, 5 to 8 minutes. Place the dough into a greased bowl, cover with plastic wrap. Cover; let rise in a warm place until doubled, about 35-40 minutes.

Shape into Loaf (or make variations at this time):

Punch down the dough and shape. On a lightly floured surface, roll the dough into a 12" x 18" rectangle. Starting with the shorter side, roll the dough up tightly. Pinch edges to seal. Place in a greased 8" x 4" loaf pan. Brush surface of dough with oil and loosely cover (at this point the dough may be refrigerated 2-48 hours). When ready to bake, let rise in warm place until double, about 20 minutes.

Bake at 375° F. for 30-35 minutes until golden brown and loaf sounds hollow when tapped. Remove from pan. Cool on wire rack. Brush top surface with butter for a softer surface.

Variations using "Cool-Rise" White Bread Recipe

Caramel Rolls

Filling:

1/4 c. melted margarine or butter
1/4 cup brown sugar
2 teaspoons cinnamon

Caramel Sauce for Bottom:

1/2 cup brown sugar
1/4 cup margarine
1 tablespoon light corn syrup

Roll dough on lightly floured surface to 12" x 8" rectangle. Sprinkle with brown sugar and cinnamon. Roll up beginning at wide side, seal edge. Cut roll into 1" slices.

Caramel Sauce for Bottom: Mix brown sugar, margarine and corn syrup in microwave-safe bowl, and microwave for 1 minute. Stir. Pour into greased 9" x 13" square pan. Place roll slices cut side down on top of sauce.

Cover loosely and let rise in warm place until doubled in size (or refrigerate 2-48 hours). Bake at 350° F. for 15-20 minutes until golden brown. To remove the rolls from the pan, cool for 15 minutes and flip the still warm pan onto a serving platter.

Cinnamon Rolls

2 tablespoons softened margarine
1/4 cup sugar
2 teaspoons cinnamon

Roll dough into a 12" x 8" rectangle, spread with softened margarine. Mix sugar and cinnamon and sprinkle over rectangle. Roll up, beginning at wide side. Pinch edge of dough into roll to seal well. Cut roll into 12 – 1" slices. Place slightly apart in greased 9" x 13" pan. Cover loosely and let rise in warm place until doubled in size (or refrigerate 2-48 hours).

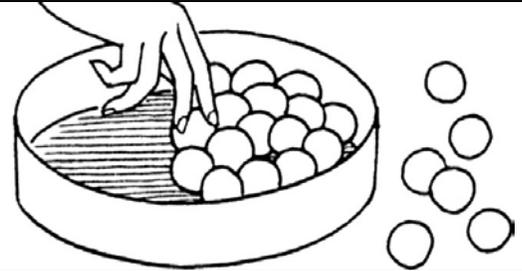
Bake at 350° F. for 15-20 minutes or until golden brown. To remove rolls from pan, flip the warm pan onto a serving plate.

Dinner Roll Variations

Shape rolls as desired using the following diagrams and instructions. Cover loosely and let rise in warm place until doubled in size (or refrigerate 2-48 hours). Bake at 350° F. for 15-20 minutes until golden brown.

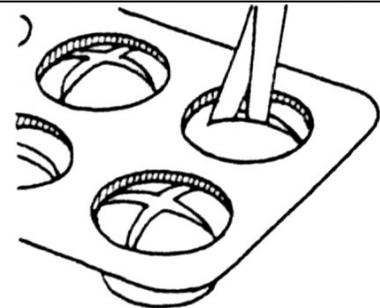
Casseroles

Shape bits of dough into 1" balls. Place in lightly greased round layer pan, 9" diameter x 1 1/2" deep. Brush with butter.
3 dozen rolls.



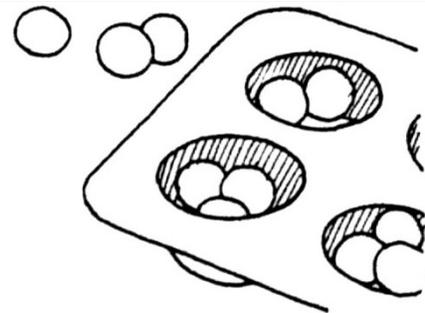
Four-Leaf Clovers

Shape pieces of dough into 2" balls. Place each ball in greased medium muffin cup (2 3/4" diameter). With scissors, snip each ball in half, then into quarters. Brush with butter.
1 dozen rolls.



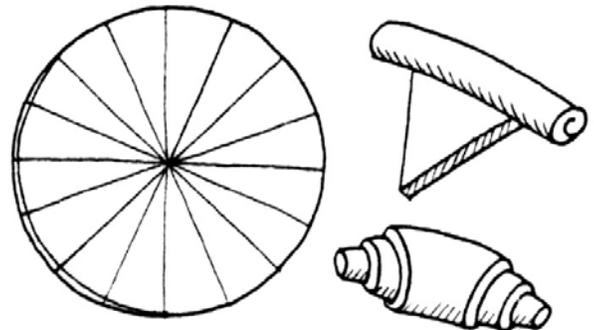
Cloverleaves

Shape bits of dough into 1" balls. Place 3 balls in each greased muffin cup. Brush with butter.
1 dozen rolls.



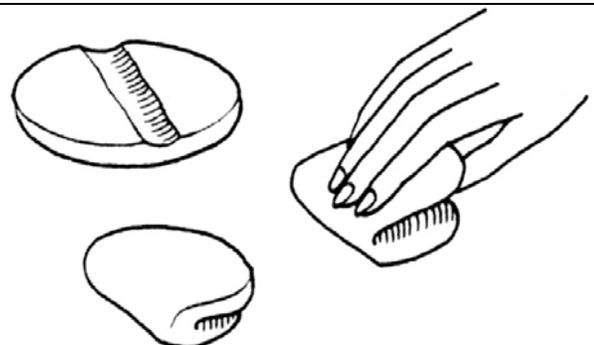
Crescents

Roll dough into 12" circle, about 1/4" thick. Spread with soft butter. Cut into 16 wedges. Roll wedges, beginning at rounded edge. Place rolls, with point underneath, on greased baking sheet. Curve slightly toward point. Brush with butter.
16 rolls.



Parker House

Roll dough into oblong shape, 13" x 9", about 1/4" thick. Cut into 3" circles. Brush with butter. Make crease across each circle. Fold so top half overlaps slightly. Press edges together. Place close together in greased 9" pan. Brush with butter.
10 rolls.



Grains of truth about YEAST BREADS

Definition

Flavor, aroma and texture are the qualities that account for the popularity of yeast bread and rolls. Yeast breads differ from quick breads in that they are leavened by yeast, a living organism, rather than baking soda and baking powder and are often much lower in fat and sugar. When mixed with water and sugar, the yeast ferments to produce carbon dioxide, filling the bread dough with tiny air bubbles. Water also combines with the gluten protein in the flour to form the elastic structure of the dough that traps the air bubbles and makes the bread rise.

History

The bread of prehistoric man is believed to have been flat and unleavened and probably baked over stones or by the sun. The Egyptians are credited with inventing the oven and discovering yeast leavening, a development probably made when a batter left in the hot sun attracted wild, air-borne yeast.

Nutritional value

All breads are nutritious — some more so than others. The 1995 U.S. Dietary Guidelines for Americans recommend eating six to 11 servings of bread, cereal, rice and pasta each day because they are a major source of complex carbohydrates (starches), fiber and B vitamins.

The dietary guidelines recommend that at least 55 to 60 percent of daily calories come from complex carbohydrates, less than 30 percent from fat, and 15 percent from protein. Bread helps achieve this because one slice (one serving) of white bread derives 76 percent of its calories from carbohydrates (mostly complex) and only 11 percent from fat.



White bread is also a good source of the three major B vitamins: thiamine, riboflavin and niacin. A slice contains almost a gram of iron and 10 micrograms of folacin. Cholesterol content varies among recipes, but the amounts are negligible.

Per slice, white bread has half a gram of soluble fiber, which contributes to daily fiber needs of 20 to 35 grams. Soluble fiber has been shown to help lower blood cholesterol when eaten as part of a low-fat diet. In the United States, white flour is "enriched" with the three major B vitamins and iron in an amount equal to whole wheat flour.

The nutritional content of whole wheat breads also varies among recipes, but an average slice of whole wheat bread derives 69 percent of its calories from carbohydrates and 15 percent from fat because of the oil found in the wheat germ. The nutrient profile of whole wheat bread is also excellent. It has 2 grams of fiber, primarily insoluble, which has been shown to help prevent colon cancer and possible breast cancer. With almost a gram of iron, a substantial amount of folacin (15.6 micrograms), vitamin E, copper, vitamin B₆ and the three major B vitamins per slice, whole wheat bread is a nutrient dense food.

The National Center for Nutrition and Dietetics of the American Dietetic Association recommend consumers eat at least three servings of whole grain foods daily.

Ingredients

Yeast: A leavening agent that produces carbon dioxide, which makes the bread rise.

Salt: Regulates yeast growth and gives flavor.

Sugar: Acts as a yeast food and increases tenderness and browning and keeping qualities.

Liquid: Dissolves yeast and sugar and develops gluten. Water doughs make a higher, crustier bread. Milk doughs have a finer texture and better flavor.

and brown more quickly. Milk doughs also help make a complete protein.

Shortening: Keeps bread tender and fresh.

Flour: Provides the structure of bread.

Storage

■ After baking, remove the bread from its pan, set on a rack and let cool slowly in a draft-free place. When cooled, place a plastic bag or plastic wrap and store at room temperature. It will last from two to seven days, depending on the bread.

■ Breads stale quicker in the refrigerator. They can, however, be frozen for several months if well-wrapped. Before freezing, wrap tightly in plastic and place in a plastic bag or wrap in foil and seal with tape. To thaw, leave wrapped at room temperature or wrap in foil. Do not shake ice crystals out of the bag while thawing so the moisture will be reabsorbed. Heat 20 to 40 minutes in a 350° F. oven.

■ Baking tips

■ For best results, use a high-protein bread flour. A flour too low in protein produces a loaf that is poor in volume and texture. When using a recipe that calls for all-purpose flour, substitute with a little less bread flour (about one to two tablespoons less per cup) and increase kneading time to about 12 to 15 minutes. Because the protein content of each brand of flour varies, each brand will react differently.

■ If the flour is old, it will cause a crumbly, "short" dough.

■ Salt should not be omitted because it controls the action of the yeast. Besides having a very bland flavor, breads made without salt tend to over-rise and will have a different texture than breads made with salt.

■ The time required for dough development varies considerably, depending on factors such as temperature, humidity, yeast characteristics, flour characteristics and kneading.

■ Let the dough rest five to 10 minutes after kneading to relax the gluten and make handling easier.

■ When adding wheat bran, wheat germ, bulgur or cracked wheat to a bread recipe, use about 1/4 cup of these products for every two cups of flour. Leave the bread dough as moist as possible, because these ingredients absorb liquid and tend to produce a drier

loaf. Reduce the amount of kneading to avoid cutting the gluten strands with the sharp edges of these products.

■ As the ratio of whole wheat flour to bread flour increases, so does the rising time. Don't expect darker breads to double in bulk when they are fully fermented.

■ Vigorous beating before all of the flour is added hasten gluten formation. Kneading develops the gluten, forming a mesh that traps the gas produced by the yeast. Over-kneading stretches the gluten to the breaking point and destroys the gas-trapping mesh, but this is not possible to do by hand-kneading.

■ To test if the dough is sufficiently kneaded, poke the dough with your fingers; it should spring back. Sometimes blisters will form on the surface of the dough, which is another sign the dough is sufficiently kneaded.

■ To properly dissolve the yeast, follow package directions. The remaining liquids should normally be about 80° - 90° F. if the flour is at room temperature. Ideal dough temperature is 78° F., so on hot days, cooler liquids may be used; on colder days, warmer ones.

■ Substitute honey for sugar, one for one.

■ With bread making, exact flour measurements are impossible. Dough is affected by heat, humidity, sugar, altitude and possibly the personality and mood of the baker. If too much flour is used, the bread may be very heavy and stiff. If too little is used, the bread will not hold up and a low-volume bread will result. It is difficult to make a serious mistake; errors often turn into inventions.

■ To slow the rising process, the dough may be placed in the refrigerator or cooler liquids may be used.

■ To quicken the rising process, place the covered bowl of dough in an oven heated with a pan of steaming water.



Grains of truth about BREAD MACHINES

Definitions

Operating on computer chip technology, the automatic bread machine (or auto bakery) is an appliance that performs all the steps in baking bread. The machine consists of a nonstick container with a mixing and kneading arm nestled inside an electronically controlled heating unit. All that is required is measuring the ingredients into the container and programming the machine.

Operations

- Before using the bread machine, read the instruction manual provided.
- Place the machine on a clean, hard, dry surface. Flour or liquid getting under the feet or by an imbalance in ingredients causes "walking."
- Room temperature may affect the kneading, rising and baking times, and results. Ideal temperature is 65°-75°F. The bread machine should sit in a draft-free area.
- Do not exceed the maximum ingredient capacity of the machine. An overflow will result in an undercooked or sunken top or even the need to clean the inside of the machine. Two cups of flour produce a 1-pound loaf; three or more produce a 1 1/2 pound loaf.
- As a rule, reduce the amount of yeast by 1/4 teaspoon for every 2,000 feet of altitude. Sugar and water may need to decrease slightly.
- Accurate liquid and dry measurements are essential. Use liquid measuring cups for liquids. For flour, stir, spoon into dry measuring cup and level off.
- The ideal temperature for ingredients is 75°-85°F. A thermometer is necessary. An easy method is to combine the liquid ingredients and microwave to the ideal temperature.
- Place ingredients in the baking pan in the order listed. Do not let the yeast touch the liquids. This is imperative when using the delayed timer cycle.
- If the machine does not have a cool-down cycle, remove the loaf promptly. If the finished loaf is left in the pan, the inside becomes overcooked and the crust becomes soggy and over-browned.

Flours

- As a rule, at least half of the flour used should be high-protein white, whole-wheat or bread flour. If all whole-wheat flour is used, choose high-protein flour.
- If substituting all-purpose for bread flour, the flour-to-liquid ration may have to be adjusted. Reserve a few tablespoons of liquid in the initial mixing process. If the dough is dry, add more liquid while it mixes.
- To improve loaf volume, add 1 to 2 tablespoons of wheat gluten plus an equal amount of additional water to recipes using all-purpose, whole-wheat, rye or other whole grains. Adding wheat gluten is not necessary when using all bread or high-protein whole-wheat flour. Gluten can be purchased at any grocery stores.
- A dough enhancer is an optional ingredient that is used to increase dough strength and tolerance, extend shelf life and make lighter-textured bread. Tofu and vitamin C are often used. Use 1 tablespoon per 3 to 3 1/2 cups whole-wheat flour.
- Adding too much wheat germ, fruit, vegetables or fresh milk will inhibit the rising of the bread. Dough that contains walnuts or raisins may not rise sufficiently when using the timer.

Yeasts

- Most machines are programmed to use active dry yeast. Consult the manual if using a different kind of yeast. Cake or compressed yeast is not recommended. Both quick and regular dry yeasts may be used as directed by the manual.
- Check the expiration date on the package of yeast for freshness. Tightly seal containers of yeast and refrigerate or freeze. Bring to room temperature before using. One package equals 2 1/4 teaspoons, or 1/4 ounce.
- Salt should never be eliminated because it acts as a growth inhibitor for yeast. If necessary, decrease the amount 1/8 to 1/4 teaspoon per loaf. If the bread rises too high, decrease the amount of sugar. The usual salt-to-flour ratio is 1/4 teaspoon salt to 1 cup of flour.

Sweeteners

■ White and brown sugar, honey and molasses may be interchanged. Honey is twice as sweet as sugar, so use only half as much. Decrease the water by the same amount as the honey or molasses added.

■ Do not use artificial sweeteners. Yeast cannot react to them and they break down under heat.

Eggs & Liquids

■ Decrease liquid amounts in humid weather because humidity adds extra moisture to the dough.

■ Milk, buttermilk and water may be interchanged equally.

■ Never use perishable ingredients such as fresh milk, meat, eggs, cheese, yogurt, orange juice and vegetable purees with the timed delay because they may spoil while sitting in the machine. Unless making sourdough, milk should not sit for more than 1 or 2 hours.

■ When using the timer cycle, replace the fresh milk with nonfat dry milk. Add the dry milk (1 to 4 tablespoons, depending on the loaf size) and replace the fresh milk with equal amounts of water. Always place dry milk next to the yeast, away from liquids.

■ In substituting dry milk for fresh milk, remember that one tablespoon of dry milk equals about 1/4 cup of fresh milk. Reduce the amount of water in equal proportion to the amount of fresh milk added.

■ Using large eggs may make dough stickier, so reduce the amount of water accordingly.

■ Egg substitute, found in the frozen section of the grocery store, may be used in place of eggs, especially when a recipe calls for half an egg. One egg equals 1/4 cup of egg substitute; 1/2 egg equals 2 tablespoons.

Troubleshooting

Crust is too thick: Select a lighter setting.

Top is sunken: Too much yeast or liquids are present or there is not enough flour. Be sure the temperature of the liquids is correct. If the correct amount of salt and sugar were used, a small increase of these two ingredients may be a remedy. Or, try reducing the water called for by 1/4 to 4 tablespoons. During high humidity or high temperatures, the loaves may have sunken tops. At such time, add 1 to 2 tablespoons flour or decrease the liquid. A quick-rise yeast may have been used. Too much yeast will cause the loaf to have a coarse, open grain and a flattened or sunken top.

Bread is too moist: Bread sat in a pan too long. Increase the baking temperature by setting the baking control dial towards dark. Lengthen the baking time by selecting a darker setting.

Dough appears too dry or stiff: After the first five minutes of kneading, additional liquid may gradually be added, 1 tablespoon at a time. Without enough liquid, the loaf will be short and dense.

Dough appears too wet and sticky: Add more flour, 1 tablespoon at a time, until the dough begins to mass around the blade in a soft, pliable ball. With too much liquid, the bread will rise, then fall when baked.

Bread is too doughy or falls during the baking process: The loaf may be too big for the machine or the humidity too high. This can be remedied by reducing the fat and liquid. Reserve 1/4 of the liquid from the total amount. One tablespoon at a time, add it back in until the dough forms a ball. Reduce the amount of yeast by 1/4 teaspoon and decrease the sugar and/or increase the salt used. Check for water or liquids that are too hot.

Flour sticks to the side of the machine and does not knead the dough: During the kneading cycle, push the flour into the dough with a rubber spatula or simply brush the flour off the finished loaf.

Loaves don't rise as high as previous ones: An underdeveloped loaf means too little yeast or too little liquid. Check the amount of yeast and increase, if necessary. Also check the freshness of the yeast. Or, use bread flour instead of all-purpose flour. Try increasing the sugar and water slightly.

Dough rises then collapses: The recipe produces too much dough for the size of the machine. Cut back the recipe or check the water temperature; it may be too warm.

Loaf rises too high: Use more salt or reduce the amount of sugar and/or yeast.

Loaf does not rise: Flour type is too low in protein content or too much salt is present. Also, there may not be enough sugar or yeast, or the yeast may be old. The water temperature may be too high.

Loaf has an uneven top: Not enough liquid is present.

Loaf is pale in color: Not enough sugar is present. Adding milk (dry or liquid) contributes to browning.

Consistent poor dough development (rising): This may mean the machine's calibration is off. To service the machine, contact the dealer or check the manual to find the nearest service center.

Hint: Buy a recipe book that was developed in the United States. Manuals translated into English from other countries may have confusing terminology and odd measurements, such as 1/3 teaspoon.

Grains of truth about WHEAT FLOUR

Definition

Flour is the product obtained by grinding wheat kernels or “berries.” The kernel consists of three distinct parts: bran, the outer covering of the grain; germ, the embryo contained inside the kernel; and endosperm, the part of the kernel that makes white flour. During milling, the three parts are separated and recombined accordingly to achieve different types of flours.

There are six different classes of wheat: Hard Red Winter, Hard Red Spring, Soft Red Winter, Hard White, Soft White and Durum. The end products are determined by the wheat’s characteristics, especially protein and gluten content. The harder the wheat, the higher the amount of protein in the flour. Soft, low protein wheats are used in cakes, pastries, cookies, crackers and Oriental noodles. Hard, high protein wheats are used in breads and quick breads. Durum is used in pasta and egg noodles.

History

Ground grain was one of civilized man’s first foods. Ancient methods of grinding can be traced to the Far East, Egypt and Rome. As early as 6,700 B.C., man ground grains with rocks. Water mills did not appear until 85 B.C. in Asia Minor. Windmills appeared between 1180 and 1190 A.D. in Syria, France and England.

Storage

Flour should be stored in airtight containers in a cool, dry place (less than 60 percent humidity). All-purpose, bread and cake flour will keep for 6 months to a year at 70°F and 2 years at 40°F. Store away from foods with strong odors. Whole-wheat flour should be refrigerated or frozen, if possible. Before using refrigerated or frozen flour, allow it to warm to room temperature and inspect for rancidity and taste.

Nutritional value

Wheat flour is an excellent source of complex carbohydrates. Other than gluten flour, all types of wheat flour derive at least 80 percent of their calories from carbohydrates. Depending on the flour type, the percent of calories from protein ranges from 9 to 15 percent, except from gluten, which has a 45 percent protein content. Calories from fat are never more than 5 percent.

In addition, wheat flour provides from 3 g (cake flour) to 15 g (whole-wheat flour) of dietary fiber per 1-cup serving. Wheat flour contains B-vitamins, calcium, folacin, iron, magnesium, phosphorus, potassium, zinc, minimal amounts of sodium and other trace elements.

Types of flour

- White flour is the finely ground endosperm of the wheat kernel.
- All-purpose flour is white flour milled from hard wheats or a blend of hard and soft wheats. It gives the best results for many kinds of products, including some yeast breads, quick breads, cakes, cookies, pastries and noodles. All-purpose flour is usually enriched and may be bleached or unbleached. Bleaching will not affect nutrient value. Different brands will vary in performance. Protein varies from 8 to 11 percent.
- Bread flour is white flour that is a blend of hard, high-protein wheats and has greater gluten strength and protein content than all-purpose flour. Unbleached and in some cases conditioned with ascorbic acid, bread flour is milled primarily for commercial bakers, but is available at most grocery stores. Protein varies from 12 to 14 percent.
- Cake flour is fine-textured, silky flour milled from soft wheats with low protein content. It is used to make cakes, cookies, crackers, quick breads and

some types of pastry. Cake flour has a greater percentage of starch and less protein, which keeps cakes and pastries tender and delicate. Protein varies from 7 to 9 percent.

■ Self-rising flour, also referred to as phosphated flour, is a convenience product made by adding salt and leavening to all-purpose flour. It is commonly used in biscuits and quick breads, but is not recommended for yeast breads. One cup of self-rising flour contains 1 1/2 teaspoons baking powder and 1/2 teaspoon salt. Self-rising can be substituted for all-purpose flour by reducing salt and baking powder according to these proportions.

■ Pastry flour has properties intermediate between those of all-purpose and cake flours. It is usually milled from soft wheat for pastry-making, but can be used for cookies, cakes, crackers and similar products. It differs from hard wheat flour in that it has a finer texture and lighter consistency. Protein varies from 8 to 9 percent.

■ Semolina is the coarsely ground endosperm of durum, a hard spring wheat with a high-gluten content and golden color. It is hard, granular and resembles sugar. Semolina is usually enriched and is used to make couscous and pasta products such as spaghetti, vermicelli, macaroni and lasagna noodles. Except for some specialty products, breads are seldom made with semolina.

■ Durum flour is finely ground semolina. It is usually enriched and used to make noodles.

■ Whole wheat, stone-ground and graham flour can be used interchangeably; nutrient values differ minimally. Either grinding the whole-wheat kernel or recombining the white flour, germ and bran that have been separated during milling produces them. Their only differences may be in coarseness and protein content. Insoluble fiber content is higher than in white flours.

■ Gluten flour is usually milled from spring wheat and has a high protein (40-45 percent), low-starch content. It is used primarily for diabetic breads, or mixed with other non-wheat or low-protein wheat flours to produce a stronger dough structure. Gluten flour improves baking quality and produces high-protein gluten bread.

Wheat Flour Terms

The Food and Drug Administration inspects and approves the use of flour treatments and additives that are used to improve the storage, appearance and baking performance of flour. The treatment additives are in no way harmful.

“**Enriched**” flour supplemented with iron and four B-vitamins (thiamine, niacin, riboflavin and folic acid) and may be supplemented with calcium. There is no change in taste, color, texture, baking quality, or caloric value of flour.

“**Presifted**” flour is sifted at the mill, making it unnecessary to sift before measuring.

“**Bromated**” flour is largely discontinued in the United States. Ascorbic acid is now being added to strengthen the flour for bread doughs.

“**Bleached**” refers to flour that has been bleached chemically to whiten or improve the baking qualities. No change occurs in the nutritional value of the flour and no harmful chemical residues remain. It is a process which speeds up the natural lightening and maturing of flour.

“**Unbleached**” flour is aged and bleached naturally by oxygen in the air. It is more golden in color, generally more expensive and may not have the consistency in baking qualities that bleached flour does. Unbleached is preferred for yeast breads because bleaching affects gluten strength.

“**Patent**” flour, bleached or unbleached, is the highest grade of flour. It is lower in ash and protein with good color. Market-wise, it is considered the highest in value.

“**Organic**” or chemical-free flour is not standardized, so its definition varies from state to state. It may be grown and stored without the use of synthetic herbicides or insecticides. It may also mean no toxic fumigants were used to kill pests in the grain and no preservatives were added to the flour, packaging, or food product.

“**Gluten**” is a protein formed when water and wheat flour is mixed. Gluten gives bread dough elasticity, strength and gas-retaining properties. Wheat is the only grain with sufficient gluten content to make raised or leavened loaf of bread.

Grains of truth about COMMERCIAL BREADS

Definitions

Bread, called the staff of life, differs greatly in size, shape, texture, appearance, and flavor. Yeast breads come in a variety of shapes, including flatbreads such as pita or focaccia, buns, rolls and loaves in the form of hearth or pan breads.

Pan breads: These can be made from white flour, whole wheat, or a combination of flours. They are baked in loaf pans for a softer crust. Pan breads may include coarse-textured homestyle, richer premium, and buttery split-top breads.

Hearth breads: Baked directly on the hearth for crispier crusts, some white hearth breads include French, Italian and Vienna bread.

Whole wheat bread: This bread is made entirely from whole grain wheat flour, which contains all the components of the wheat kernel—the germ, bran and endosperm.

“Wheat” bread: Not to be misconstrued with whole wheat bread, this type usually contains a mixture of about 75 percent of white flour and 25 percent whole wheat flour.

Mixed grain breads: Other grain or vegetable flours, such as rye, oat, triticale, buckwheat, amaranth, potato, alfalfa, soy and barley, are used.

Variety breads: In today’s market, you can purchase nearly any variety of flavors and seasoned breads. From sweet fruity and nutty flavors to the savory and spicy.

History

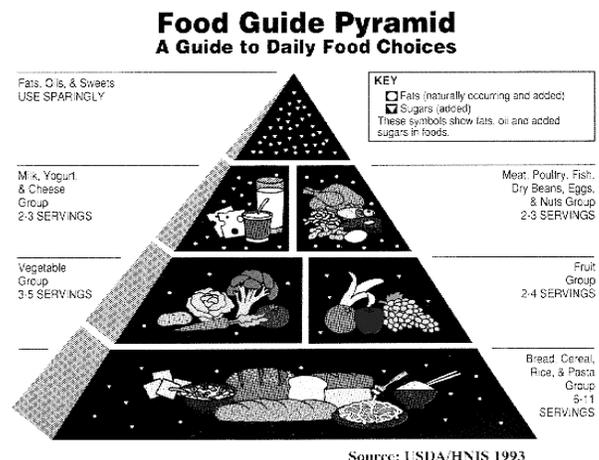
Around 10,000 B.C. man first started eating a crude form of flat bread—a baked combination of flour and water. Ancient Egyptians are usually credited with inventing the oven and discovering yeast leavening. About 3,000 B.C. they started fermenting flour and water mixtures by using wild, air-borne yeast. Eventually they added sugar, salt and flavorings such as poppy and sesame seeds.

Courtesy of the Wheat Foods Council • 303-840-8787

Nutritional value

All breads are nutritious—some more so than others. The 2000 edition of the U.S. Dietary Guidelines for Americans recommends enjoying six to 11 servings daily of bread, cereal, rice and pasta – with at least three of those servings from whole grain. They are a major source of complex carbohydrates (starches), fiber, iron and B vitamins and are generally low in fat.

Keep in mind that serving sizes are relatively small. One slice of bread is a serving, so a sandwich would provide two servings.



The dietary guidelines also recommends at least 55 to 60 percent of daily calories come from carbohydrates, less than 30 percent from fat and 15 percent from protein.

White bread: To compare, one slice of white bread gets 76 percent of its calories from carbohydrates (mostly complex) and only 11 percent from fat. The rest, 13 percent, is from protein.

White bread is also a good source of the four major B vitamins—thiamin, riboflavin, niacin and folic acid. Since 1941, white flour in the United States has been “enriched” with three major B vitamins and iron in amounts equal to whole wheat flour. As of January 1, 1998, a new fortification law went into effect requiring enriched grain products to contain

specific levels of folic acid. One slice of bread contains almost a gram of iron and now 37 micrograms of folic acid. Compared to the 9.8 micrograms before the enrichment of folic acid became effective.

White bread has .5 gram of soluble fiber per slice, which contributes to daily fiber needs of 20 to 35 grams. When eaten as part of a low-fat diet, soluble fiber has been shown to help lower blood cholesterol.

Whole wheat bread: The nutritional content of whole wheat breads also varies between brands. An average slice of whole wheat bread gets 69 percent of its calories from carbohydrates and 15 percent from fat because the wheat germ in the whole wheat flour is about 10 percent fat.

However, the nutrient profile of whole wheat bread remains excellent. It has two grams of fiber, primarily insoluble. Foods containing insoluble fiber have been shown to help prevent colon cancer and possibly breast cancer. Almost a gram of iron per slice, a substantial amount of folic acid (17.5 micrograms), vitamin E, copper, vitamin B₆ and the three major B vitamins make it a nutrient dense food.

Wheat bread, mixed grain or variety breads: All of these vary slightly in nutritional value. Be sure to read the label.

The National Center for Nutrition and Dietetics of the American Dietetic Association recommend that Americans eat at least three servings of whole grain foods daily. The label should list first “whole wheat flour” or contain a combination of whole grain ingredients for it to be a whole grain food. When shopping for whole grain bread, remember that not all brown based bread is whole wheat. A brown color may be the effect of caramel coloring, which will be listed on the label. Its nutrient value is similar to white bread.

Labeling

Read labels. These are your best source of nutrition and ingredient information. The Federal Nutrition Labeling and Education Act (NLEA) of 1990 standardized nutrition labels.

To alleviate consumer confusion, only certain terms—which have very strict definitions under the

NLEA—may be used on a product. The core terms are “free,” “low,” “low-fat,” “low calorie,” “high,” “good source,” “reduced,” “less,” “more,” “light,” and “healthy.”

Only seven nutritional claims may be made regarding a nutrient or a food and its effect on the risk of a disease or health-related condition. Those claims of risk-reduction that apply to breads define fiber-containing grain products and their relationship to cancer the risk of heart disease.

The list of mandatory nutrients which must be on the label includes: total calories, calories from fat, total fat, saturated fat, cholesterol, sodium, total carbohydrates dietary fiber, sugars, protein, vitamin A, vitamin C, calcium, iron and folic acid. Thiamin, riboflavin and niacin are not required because deficiencies of these are no longer prevalent due to the enrichment of white flour.

Storage

Breads begin to stale once removed from the oven. Keep pan breads tightly wrapped and store at room temperature. Refrigerator storage has a tendency to stale bread quickly. Refrigerate only those breads that have a custard or meat filling. Crusty breads should be stored in paper bags that breathe. To freeze, wrap in air-tight, freezer-suitable packaging. Freeze and hold breads and rolls at 0°F up to three to six months. Commercially baked breads may be frozen in their own wrappings if they are used in one or two weeks.

Thaw frozen bread at room temperature. Microwave thawing is not recommended because bread may dry out and become over-heated, which results in toughening.



Grains of truth about SOURDOUGH

Definitions

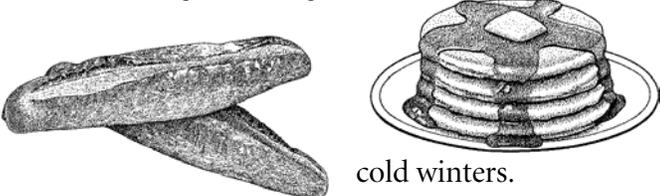
A sourdough starter is basically a method of growing yeast. The starter is a flour and water mixture—a basic unleavened dough—that serves as a medium for growing either commercial yeast that is added to the mixture or the ever-present wild yeast that is “captured” by the mixture from the air we breathe. (Yogurt is also sometimes added to provide yeast). This mixture is allowed to “sour” through a fermentation process that produces a gas and an acid. It is then used as a “starter” to leaven other breads: the gas produced by the fermentation is trapped in the elastic gluten structure of the dough, causing it to rise, while the acid imparts the final product with a tart flavor.

History

Thought to be the very first instance of leavened bread, sourdough dates back to 4,000 B.C., when ancient Egyptians are credited for discovering yeast’s leavening power. Since then, it has spread to many cultures and has a solid place in U.S. history and folklore.

In the Old West, sourdough was the only continuous supply of leavening in the wilderness areas, earning the mountain men, sheepherders, pioneers, prospectors and miners of the time the nickname “Sourdoughs.” To carry the starter from camp to camp, they would add enough flour to make a ball of dough that was then buried deep in the flour sack. Water and warmth at the next campsite started it growing again.

Tales tell of the cherished sourdough crock with starter given as a part of a bride’s dowry and of the starter going to bed with its owner to assure its survival through the long,



cold winters.

Starter methods

Flour and water are the only two necessary ingredients to grow the yeast. Milk may be used instead of water to produce a more sour flavor (the lower the milk fat, the more sour flavor), but always be consistent in the type of milk used to replenish the starter.

One tablespoon of sugar may be added as yeast food, but the yeast will also break down the flour’s complex carbohydrates into simple sugars for food.

To make a basic starter that requires catching yeast from the air, simply mix enough warm (105°-115°F) water into 1 cup of flour to make it a consistency that is a little thicker than cake batter.

The container should be glass, stoneware or plastic and large enough to allow for expansion of the starter to twice its original size. Prolonged contact with metal may change the sourdough’s flavor. Use only wooden or plastic spoons when mixing and stirring the starter.

Leave uncovered in a warm (85°), draft-free area for two to 10 days or until it has bubbled sufficiently. Pour into a non-metal container and store in the refrigerator.

To make a starter using commercial yeast, combine 1 cup flour, 1 cup warm (105°-115°) water, 1 package of dry yeast and 1 tablespoon of sugar.

Cover the container with a towel, cheesecloth, waxed paper, or plastic wrap. Or, poke a small hole in the top of the lid to allow gas to escape and the yeast to breathe; otherwise, the accumulated gases may crack or shatter the container.

Let the starter sit for two to 10 days, depending on the amount of sourness desired, in a warm (85°F), draft-free area. Remember to stir the starter, at least two or three times daily to incorporate the yeast and sugar.

Three kinds of commercial starters are available in stores: dehydrated starters, freeze-dried starters and specially packaged starter ingredients. All three require only the addition of water.

Once a good, tart starter is achieved, take care of it. The foamy, bubbling container of yeast is a living, self-perpetuating organism—it must be fed and cared for like a living plant.

Sourdough hints

■ To ensure a warm (80°-85°F), draft-free place for the starter, place it on a sunny window, a high shelf or a warm corner. Do not allow the starter to be subjected to direct heat sources or temperatures exceeding 95°F.

■ Starter that has been sitting for a time will have a thin alcoholic layer of clean grayish liquid settle at the top of the batter. Old-timers referred to this alcohol as “hooch.” Just mix it back into the starter. If this layer is green, blue, pink or orange, discard the starter and begin anew.

■ If the starter smells particularly sour or is too tart, add 1 cup of warm liquid and 1 cup of flour to 1 cup of starter and mix thoroughly. Pour off all but 1 cup of this batter. This is known as freshening, or sweetening, the starter.

■ Replenish or “feed” the starter each time it is used. Measure out the required amount of starter from the container, then add equal amounts of flour and lukewarm liquid to the container. Cover and let sit in a warm place for six to 24 hours before using. Never let the starter get too low; always reserve at least 1 cup of starter in which to add 1 cup of flour and 1 cup of water. It is advisable to have several cups of starter on hand in your crock.

■ Use and replenish the starter at least once every two weeks and it will live indefinitely, gaining flavor and tang as it grows older. If not used within 10 days, add 1 teaspoon of sugar to feed the yeast.

Storage

When not in use, date and refrigerate the freshened or replenished starter in a sealed container. Fermentation is slowed during refrigeration, so the starter may not need to be used or freshened for several weeks. Always bring it to room temperature and make sure it is bubbling before using (the process will take about 18 hours or overnight).

A healthy, freshened starter can be frozen for up to three months. Before using, let the starter thaw slowly in the refrigerator for 24 hours; then bring it to room temperature. Sudden temperature changes will damage the starter.

Baking hints

Sourdough starter may be used as a leavening for pancakes, cakes, cookies and quick breads as well as for traditional yeast breads. Above all, be creative and don't limit yourself.

■ To substitute starter for yeast in breads, use 2 cups of starter for 1 package of yeast. Decrease the liquids in the recipe by 1 1/2 cups and the flour by 1 cup. If milk is the reduced liquid ingredient, stir in enough dry milk to make equivalent milk amounts. For example: 1/3 cup of dry milk makes 1 cup liquid milk, and would be substituted as such. No extra liquid would need to be added and no other change would be necessary. The starter used by itself works very slowly. Bread made with starter only is sometimes quite firm and chewy; adding yeast will give the bread a lighter texture.

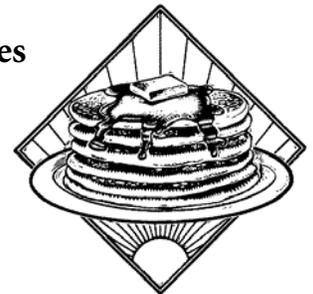
■ For best results with yeast breads, use bread flour. All-purpose or cake flour are suitable for pancakes, cookies and cakes. Avoid over mixing cakes, cookies, pancakes and batters. Over mixing will knock out the gas used to leaven baked goods.

■ If whole wheat flour is preferred, use 1 cup of starter, 1 cup whole wheat flour and 2 cups of warm water. Let stand 24 hours.

Recipes

Sourdough Hotcakes

- 1 cup flour
- 1 cup milk
- 1 cup starter
- 2 eggs, beaten
- 2 tablespoons sugar
- 2 tablespoons oil
- 1 1/2 teaspoons baking powder
- 1/2 teaspoon of salt
- 1/2 teaspoon baking soda



Measure flour, milk and starter into a large non-metal mixing bowl; beat until smooth. Cover loosely with waxed paper and let stand in a warm (80°-85°F) place at least 8 hours or overnight. Reserve 1 cup of starter back into crock or jar.

Add remaining ingredients and stir until smooth. Bake on a lightly greased, preheated 400°F griddle until golden brown on each side.