



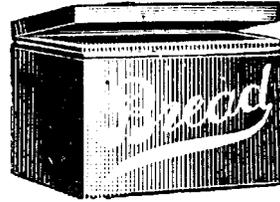
YOUR DAILY BREAD

Leader's Guide

The best guess about the origins of bread is that flat breads were common in the late Stone Age. Surviving versions include the tortilla, Indian johnny-cake and the Chinese pancake. Raised bread seems to have developed in Egypt around 4000 B.C. By the middle ages, improved strains of wheat, grinding equipment, fermentation and the improved cooking equipment allowed the baking of leavened bread to become a profession.

Bread has played a prominent role in Europe's sense of social relations and hierarchy. One's bread was determined by one's rank. White bread made from refined flour has been considered superior, while the poor and criminals ate unleavened barley cakes or coarse dark breads. Darker, whole grain bread is now thought to be more healthful and now the loaf of preference.

Bread has also played many ritual and metaphorical roles throughout history. Diverse religions use bread in offerings and other ceremonies. It is clear that bread has long been a staple food of body and mind.



yellow after milling. If allowed to age for one to two months, it turns white naturally through oxidation. But most wheat flour is quickly bleached using chlorine dioxide. Aging improves the baking qualities but because aging takes so much time and space, flours are usually chemically aged with potassium bromate or iodate. Bromated flour or those that contain ascorbic acid create higher-rising loaves.

Store white flour in an airtight container in a cool, dry location. If properly stored, the shelf life of commercial flour is 15 months from the coded date on the back of the package. If weevils are a problem, place new flour in the freezer for several days. Store whole wheat and other whole-grain flours in the refrigerator to prevent the natural oils from turning rancid for up to three months.

Measure flour by spooning it lightly into a measuring cup and leveling off the top with a straight edge. Almost all commercial flours have been pre-sifted, so sifting is unnecessary most of the time. Most recipes call for a varying amount of flour because different flours absorb different amounts of liquid. The softness or hardness of the wheat from which the flour was milled and the humidity in the air affects the absorbency. Use only just enough flour to produce the type of dough described in your recipe.

- *All-purpose flour* is a blend of hard and soft wheats. Breads baked in a bread machine using all-purpose flour will be significantly smaller than those made from bread flour.
- *Self-rising flour* is simply all-purpose flour pre-blended with baking powder and salt. It is not recommended for bread machines.
- *Bread flour* is made from hard wheat- wheat with a high protein and low starch content. It is the preferred flour for making bread.

The Essential Ingredients



The ingredients that go into a loaf of bread are simple...flour, yeast, liquids and salt. But their combined effect is wonderfully complex. The nature of the ingredients, their proportion and the way they are combined makes a difference in the final product.

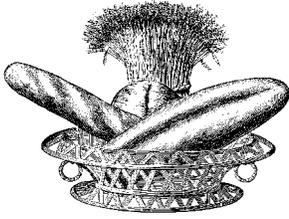
Wheat Flours

Mechanical rollers crack the wheat berry, allowing the germ and bran to be sieved off the endosperm. For whole grain flours, the germ and bran are then added back. Wheat flour is slightly

- ▣▣▣ *Enriched flour* has the B-vitamins and iron that are lost during milling added back.
- ▣▣▣ *Whole wheat flour* is milled from the whole kernel. When used alone, whole wheat flour produces a heavy, compact, dark bread. The germ and bran cut the developing gluten strands.
- ▣▣▣ *Whole wheat bread flour* is ground from hard wheat and has a higher gluten content. To create your own whole wheat bread flour, add one tablespoon gluten to each cup of whole wheat flour.
- ▣▣▣ *Graham flour* resembles whole wheat flour in taste but has less protein.
- ▣▣▣ *Durum flour* is made from the hardest of wheats. A bread made entirely from durum wheat is inedible.
- ▣▣▣ *Semolina flour* is durum flour minus the bran and wheat germ. It is usually used as a pasta flour, but can be used in breads.
- ▣▣▣ *Kamut flour* is a relative of durum wheat. It is high in protein, but low in gluten, so it must be combined with a higher gluten flour to produce an acceptable bread.

Other Grain Flours

- ▣▣▣ *Amaranth flour* is higher in protein, lysine, iron and calcium than most other grains. Use ½ cup of amaranth flour per loaf in combination with a wheat flour.
- ▣▣▣ *Barley flour* adds a nutty, malty flavor to a loaf. Use no more than one part barley flour to 3 parts wheat flour.
- ▣▣▣ *Buckwheat flour* has a full-bodied, earthy flavor. Use ½ cup of buckwheat flour per loaf in combination with a wheat flour.
- ▣▣▣ *Corn flour* has a sweet flavor. Use no more than 1 part corn flour to 4 parts wheat flour.
- ▣▣▣ *Cornmeal* gives a crumbly texture and sweet flavor. Add ½ cup of cornmeal per loaf.
- ▣▣▣ *Legume flours* are gluten-free and include pea, mung, lentil, soy and garbanzo beans.
- ▣▣▣ *Millet flour* adds a nut-like, sweet flavor. Use no more than one part millet flour to 4 parts wheat flour.
- ▣▣▣ *Oat flour* contains a natural antioxidant that will improve the shelf-life of bread. It adds a sweet earthy flavor but retains a light texture. Use one part oat flour to 3 parts wheat flour.
- ▣▣▣ *Potato flour* is made from steamed potatoes that have been dried and ground, imparting a definite potato flavor. To avoid lumping, mix it with the sugar and fat before adding liquids. It is a suitable flour for those on a gluten-free diet.
- ▣▣▣ *Quinoa flour* has a nutty taste that is usually used to make gluten-free pasta.
- ▣▣▣ *Rice flour* comes in both brown and white varieties. Brown rice flour contains the rice bran and germ. It has a nuttier, richer flavor than white rice flour and produces a darker loaf. Use one part brown rice flour to 4 parts wheat flour. Rice flour absorbs more liquid and absorbs it more slowly than wheat flour so adjust recipe mixing times accordingly.
- ▣▣▣ *Rye flour* is sold in both medium and dark varieties. Dark rye contains the bran. Medium rye sometimes does. Both produce a full-bodied, bitter, slightly sour flavor. For best results, use one part wheat flour to two parts medium rye or one part wheat flour to one part dark rye.
- ▣▣▣ *Soy and soya flour* are derived from soybeans. Soy flour is ground from raw beans and soya flour from lightly toasted beans. Both varieties have a high fat content. However it is possible to find them with less fat or as a nonfat flour. Soy and soya flours add a slightly sweet, pleasantly musty flavor to breads and improve shelf life. Use one part soy or soya flour to 4 parts wheat flour. Breads containing soy flour brown quickly so reduce the oven temperature about 25°F.
- ▣▣▣ *Spelt flour* contains enough gluten to be substituted for wheat flours. Those with allergies to wheat may be able to tolerate spelt wheat. Check with your physician first before substituting.
- ▣▣▣ *Triticale flour* is a cross between durum, rye and red winter wheat. It has a rye-like flavor but must be combined with a high-gluten wheat flour for an acceptable bread to be produced. Use a one to one ratio.



Whole Grains

For that added flavor, texture and wholesome goodness of whole-grain breads add wheat berries, whole oats, wheat bran or germ, bulgur, barley or kasha. Add as little as one tablespoon of whole grains per cup of flour or as much as $\frac{1}{4}$ cup of whole grains per cup of flour to your breads. The more you add, the heavier and more crumbly the bread will be. Cook, toast or sprout whole grains depending on the variety.

Yeast

Yeast is a living plant that when fed the correct amount of food, moisture and warmth, multiplies rapidly. A small amount of sugar supports the growth of yeast, but too much slows the rate. Yeast is sold in two forms: *cake (compressed)* and *active dry yeast (standard and quick-rise)*. Yeast is heat sensitive. Too little and it will not multiply. Too much and it will die. Most yeasts are effective about 110°F with quick-rise active dry yeast tolerating a range of 90-115°F. A $\frac{1}{4}$ -ounce packet of yeast equals $2\frac{1}{4}$ teaspoons of yeast. Quick-rise, rapid-rise or instant yeasts are all fast-acting yeasts. They live fast but die young so they are not well suited for multiple risings, long periods of fermentation or the long whole-wheat cycle of some bread machines. One $\frac{3}{5}$ -ounce cake of compressed yeast equals one $\frac{1}{4}$ -ounce packet of active dry yeast. Compressed yeast is not recommended for bread machines. If you store the yeast in the refrigerator or freezer, do not bring it to room temperature by using the microwave.

Liquid

Liquid helps to distribute the yeast evenly in the flour and allows the sugar and salt to dissolve. *Water* generally yields crisper breads than a dough made with milk. *Milk* adds richness, makes a finer crumb and softer crust and can help retard staling. Scalding is no longer

required since we drink pasteurized milk. If your dough appears dry, add one tablespoon of liquid at a time.

Fats

Butter, margarine, shortening and oil helps to produce a tender loaf with a brown crust. Fat also slows down the moisture loss that causes staling.

Salt

In addition to flavoring bread, salt helps control the rate of fermentation and makes the dough easier to handle.

Sweeteners

A yeast dough gets sweetness and a source of food for the yeast from sugar. Sugar also imparts tenderness to the crumb and color to the crust. There a wide variety of sugars that can add different flavors to your bread. When measuring sticky sugars such as honey or molasses, coat your measuring spoon with a small amount of oil first. The sugar will glide out easily.

One tablespoon sugar =
2 teaspoons honey =
 $\frac{3}{4}$ tablespoon maple syrup =
4 teaspoons molasses =
2 tablespoons corn syrup.

Eggs

Eggs give a rich flavor and color to breads. A large egg is equivalent to a scant $\frac{1}{4}$ cup liquid. Egg breads have a tendency to dry out faster than other breads.

Dough Enhancers

Dough enhancers are supplements that can increase gluten strength, aid the yeast's fermentation, convert starch into sugar or aid in emulsifying oils. Their optional use will often result in taller, lighter loaves that stay fresh longer. *Some common dough enhancers are gluten, diastatic malt powder (malting barley flour), lecithin, ascorbic acid (vitamin C) and potassium bromate.* Commercial dough enhancers may be a blend of these. Follow the

package directions if you choose to use these.

Miscellaneous Ingredients

Seeds, raisins, nuts, chili peppers, potatoes, dairy products (sour cream, cheese, yogurt), flavoring and fruit add nutrients and flavor to your breads. Experiment or follow your recipe for best results.

Packaged Bread Machine Mixes

There are many wonderful tasting packaged mixes on the market. They are convenient and excellent for the Delayed Bake Cycle. If you have a new bread machine, try these first. They will encourage you to use different cycles on your machine and give you the confidence to try bread recipes. Mixes are expensive but convenient when you are too busy to bake your daily bread using conventional methods.

The Art of Baking Bread

All ingredients should be near room temperature, about 80°F. A quick minute on HIGH in the microwave will warm a cold cup of milk to about that temperature. The liquid needs to be 105-115°F to activate the yeast. On a cold day, warm the mixing bowl in a warm oven to speed rising time. Often the first step in a recipe is to soften the yeast in warm water with some sugar, allow to stand 5 minutes and then add to other ingredients. Commercial yeast is reliable if it is used before the marked expiration date, so the step of proofing the yeast (the surface bubbles and foams within 10 minutes) found in some recipes can be left out.

Mixing/Kneading the Dough

Flour is the last ingredient added and the dough is kneaded by hand, mixer, food processor or in a bread machine. Kneading develops gluten, the protein found mainly in wheat flour, which gives bread its structure. (If you take a well-kneaded piece of dough, roll it out very thin and hold it up to the light, you can see the gluten structure.) The more you knead the dough (up to a point), the finer the texture will be. The

kneading breaks up pockets of air being incorporated into the dough. These air pockets between the strands of gluten fill up with carbon dioxide produced by the yeast. The smaller the air pockets, the finer the bread's texture. Well-kneaded dough is smooth and satiny and has a soft, pliable body to it.

The Rising Period

After the dough has been fully kneaded, shape into a ball. Place in a lightly oiled bowl and turn to coat the entire surface so the dough will remain moist. Cover the bowl, preferably, with a clean, damp towel and set in a warm place to rise. The optimum rising temperature is between 80-85°F. Higher temperatures will force the dough to rise faster, allowing it to produce more alcohol and develop a sour taste and unpleasant smell. Turn the oven on warm for one minute, turn it off and place the covered dough in the oven to rise until doubled. The first rising generally takes 1-1½ hours. To determine if the dough has risen sufficiently, dent it gently with your index finger. If the dent remains, the dough is ready. If the depression nearly disappears, the dough needs more time. Some recipes only have one rise period. But flavors improve and a finer texture results if the dough has several long, slow risings. The maximum number of risings is four or five after which the yeast's food supply is exhausted. Heavy ingredients such as fruits and nuts cause dough to rise slower. Whole-grain bread dough and low gluten dough also need longer kneading times and will rise slowly. Acidic ingredients such as buttermilk, yogurt, sour cream and lemon juice will cause the dough to rise faster.

After the first rising, the bread is punched down and either shaped or allowed to rise a second time. Because the number of yeast cells have multiplied, the loaf will double in size again in about half the time it took to rise the first time. Punching down the dough or deflating it gently with your fist, redistributes the yeast and provides it with more oxygen and new food sources. It also forces out excess carbon dioxide and alcohol.

Shaping the Dough

After the first or second rising, the dough is turned onto a lightly floured or oiled surface and gently shaped to avoid breaking gluten strands. If making braids, dinner rolls or pizza crusts, the dough is easier to handle if you first place it on a lightly floured surface, cover it and allow it to rest for 10 to 15 minutes. The gluten strands will relax and it will be easier to handle the dough.

The dough is set in a pan or on a baking sheet and usually left to rise again. The dough should not expand more than double its size during the last rise as it needs growing room for the yeast's grand oven rise. If the dough over-rises, the gas cells burst, the gluten structure collapses and so does the loaf. If the dough does over-rise, simply reshape, allow to rise again and then bake.



Baking, Cooling & Storing Yeast Breads

A wide assortment of *baking pans* are available to bake bread in. Reduce the oven temperature by 25° to avoid over browning the bread when using *glass or black steel* pans. Black pans produce dark-crust breads while silver pans produce light-crust breads. *Baking stones* produce a very crisp crust. Avoid using coffee cans, flower pots or quarry tiles that are not designed for food use as they may contaminate your bread with toxic chemicals. Yeast breads baked in a microwave oven are pale, low in volume and tough; however, already baked breads and rolls can be defrosted and reheated in the microwave. Reheat bread only until it's warm, as overheating will cause a hard and tough product.

The *bread is done* when it has developed a golden color and sounds hollow when tapped, but use baking times as well. Typically a loaf of

bread needs to bake 40 minutes to one hour. Remove the baked bread from the pan or baking sheet immediately and cool on a wire rack to prevent a soggy bottom.

To serve, slice with a serrated bread knife and a sawing motion. When the bread is completely cool, wrap in an airtight container and store at room temperature. Storing bread in the refrigerator will cause it to dry out more quickly. Breads which contain eggs, butter and fruit keep longer than plain bread because of the higher fat and moisture content. *Or freeze the bread.* Freeze bread in a moisture- and vapor-proof container and use within four to six months.

Nutritional Considerations

Breads provide the body with complex carbohydrates (starches), which are an important source of energy. They also provide vitamins, minerals and fiber. The *Food Guide Pyramid* recommends 6-11 servings of breads, cereals, rice and pasta. One slice of bread is considered a serving. One slice of homemade white bread contains only 72 Calories with 25 percent (2 grams) of the calories coming from fat. Bread is considered a low-calorie food until you add the butter and jelly!

References

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