Grains of truth about YEAST BREADS

Definitions

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 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 was left in the hot sun attracted wild, air-borne yeast. In Egypt, around 1000 BC, inquiring minds realized the yeast was contained in the foam of the fermented beer and were able to introduce the culture directly to their breads.

Nutritional value

All breads are nutritious—some more so than others. The 2005 U.S. Dietary Guidelines for Americans recommends eating five to ten ounces of bread, cereal, pasta and other grain foods each day (depending on age, gender and activity level), with half of those coming from whole grain foods, because they are a major source of complex carbohydrates (starches), fiber and B vitamins.

The dietary guidelines recommend that at *least* 45 to 65 percent of daily calories come from complex carbohydrates, less than 35 percent from fat and 10 - 35 percent from protein. Breads help 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.

Through enrichment, white bread is a good source of the four major B vitamins: thiamine, riboflavin, niacin and folic acid. A slice (equal to one ounce) contains almost a gram of iron and 37 micrograms of folic acid.

Per slice, white bread has half a gram of soluble fiber, which contributes to daily fiber needs The National Academy of Sciences recommends. A daily dose of 25 grams for women and 38 grams for men under age 50 and for adults 50 and over, 21 grams for women and 30 grams for men is a day's supply. Foods containing soluble fiber have been shown to help lower blood cholesterol when eaten as part of a low-fat diet, thus decreasing the risk for heart disease.

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 excellent. It has 2 grams of fiber, primarily insoluble. Foods containing insoluble fiber have been shown to help prevent colon cancer and possibly breast cancer. With almost a gram of iron, a substantial amount of vitamin E, copper, folate (15.6 micrograms), vitamin B_6 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.

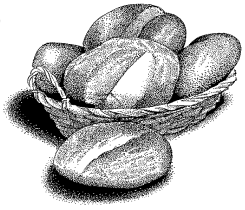
SALT: Regulates yeast growth and gives flavor.

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

LIQUID: Dissolves yeast and sugar, and helps develops gluten. Water doughs make a higher, crustier bread. Milk doughs have a finer texture, a 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 bre



Baking tips

❒ For best results, use high-protein bread flour. Flour too low in protein produces a loaf that is poor in volume and texture. When using a recipe that calls for all-purpose, 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 will react differently.

❒ If the flour is old, it will cause a crumbly, "short" dough. 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. Whole-wheat flour should be refrigerated or frozen, if possible. Before using refrigerated or frozen flour, allow it to warm to room temperature.

❒ With bread making, exact flour measurements are impossible. Dough is affected by heat, humidity, sugar, altitude and possibly the personality and the 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.

❒ 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 with salt.

❒ Store unopened yeast in a cool, dry place, such as a pantry (or refrigerator). Exposure to oxygen, heat or humidity decreases the activity of the yeast. After opening, store in an airtight container in the back of the refrigerator, away from drafts or freeze accordingly to package directions. Use within 3 to 4 months.

❒ 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.

❒ When adding wheat bran, wheat germ, bulgur or cracked wheat to a bread recipe, use about ¼ 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.

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❒ 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.

❒ Vigorously beating before all of the flour is added hastens 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, if using bread flour.

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

❒ To test if 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.

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

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

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

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 in 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 tight 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.

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