



A WORD ON YEAST BREADS

Bread has been one of the basic staples of the human diet for thousands of years. In all reality, it is easy to make, but has scared away many home cooks. With the availability of so many fresh baked artisan breads in the markets today, many of us don't consider the need to make our own bread. While this may hold true, the time spent baking our own can be fun, relaxing and rewarding.

Measuring

Professional bakers only use weight to measure their ingredients. They do this to keep perfect consistency. An ounce of flour (or sugar, salt, etc.) is always an ounce. Dry volume measurements, on the other hand, are harder to rely on. A cup of flour can have vastly different measurements depending on the scooping technique (sifting, packing, pouring, scooping, etc.). In the home, it is up to the individual cook to determine their own philosophy on this matter.

Yeast

Coming in either fresh or dry form, this single-celled fungus is the rising force in breads. Below 40° it is dormant, above 140° it dies, and in between, it's alive, baby! When activated by warm water (best between 105-115°), yeast eats sugar and produces carbon dioxide and alcohol as waste products.

Wheat Flours

Wheat flours are the best for bread as they are the only ones that contain the proteins glutenin and gliadin, which in the presence of water form gluten (rye flour contains both, but also enzymes that prohibit the formation of gluten). Gluten forms stretchy elastic strands that give structure to bread and help it to trap the carbon dioxide, in turn creating rise. The more gluten, the chewier and more elastic the bread becomes. The flour also contains a bulk of the sugars that the yeast eats – quite the symbiotic relationship.

Flour	Protein %
Cake	6-8%
Pastry	8-10%
All-Purpose	11-12%
Bread	12-14%
Whole Wheat	6-15%
High Gluten	15-16%
Vital Gluten	30-40%

Liquids

Liquids help form glutes, in addition to adding steam power and flavor components to breads. If they contain fats, they help to richen the dough.

Sugars

Sugars (in the form of granulated or liquids) feed the yeasts, add sweetness to dough, helps in browning (from caramelization), and helps retain moisture and tenderness.

Salt

Salt helps to not only enhance the flavor, but also reinforces gluten structure and slows down the fermentation process of yeasts.



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Fats

Fats (butter, shortening, milk fats, oils, etc.) help add flavor, tenderness (coats gluten strands so they aren't as tough), moistness and richness to breads.

Eggs

Eggs add steam power and moistness (from the water content), richness (from the fat) and smoothness of texture (from the emulsifier lecithin) to breads.

Kneading

The process of kneading both mixes the dough's ingredients together efficiently and also helps to develop the glutes (the proteins that add the elasticity to dough). As the glutes rub against each other during kneading, they hook together and become more and more elastic. If you overwork/knead dough, letting it rest will relax the glutes.

Proofing

Letting the dough rise, or proof, after kneading (usually until it doubles in size, roughly an hour, give or take) gives time for the yeast to multiply, create carbon dioxide, and develop flavor. This is best done at yeast's most active temperature range 80-85°. After the dough is shaped it is usually given a second proof, for about 20-40 minutes, before baking in the oven. The second proof is much faster than the first because the yeast is more plentiful and redistributed after the dough is punched and rounded. This allows the dough to get a head start on rising before the yeasts are killed shortly after entering the oven. Dough placed right into the oven after shaping will not rise nearly to its potential. For some dough, such as a thin crust pizza, that is a good thing.

Punching Down

After it has doubled in size the dough is punched down (punching in the center and folding over the sides). This helps to both release the heat that has built up in the center of the dough due to fermentation and to help redistribute the yeast. The dough will now be ready to shape or roll.

Baking

- Yeast breads are cooked in higher temperature ovens; *lean breads* (ones with little or no fats in them) are usually baked at higher temperatures, usually between 425-475°, while *rich breads* (ones containing a fair amount of fats) are baked at lower temperatures, usually around 350-425°.
- Cooking on top of *baking stones* helps increase the heat from the bottom of the dough letting it warm up more quickly, and it also aids in browning the bottom crust more effectively. Make sure to preheat the stone in the oven for at least 20-30 minutes before baking, so that it is nice and hot before the bread goes in the oven.
- The bread will get a last burst of yeast action and rise (expanding by about 25%) during the first few minutes in the oven, until the yeast dies (when it reaches 140°). This is referred to as *ovenrise* or *ovenspring*.
- Brushing the exterior of dough with fat (oil or melted butter) before baking will help enhance the effects of the Maillard reactions. Brushing with beaten egg will do the same, as well as give a nice sheen to the exterior of the baked bread.

Doneness

A bread's doneness can be determined a couple of ways. Internal temperatures, depending on the bread itself, will be around 180-200° (lower temps for richer breads, higher for more basic styles). They should be light for their size and have a "hollow" thump sound when tapped on the bottom of the loaf.