



# 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 non-stick 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° to 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 1½ pound loaf.
- ◆ As a rule, reduce the amount of yeast by ¼ 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° to 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 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 3½ 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 highly active dry yeast. Consult the manual if using a different kind of yeast. Cake or compressed yeast is not recommended. Bread machine yeast and RapidRise™ yeast are the same. The particle size is smaller to allow complete hydration of the yeast cells during the mixing process when un-dissolved yeast is combined with dry ingredients.
- ◆ 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 2¼ teaspoons, or ¼ ounce.
- ◆ Salt should never be eliminated because it acts as a growth inhibitor for yeast. If necessary, decrease the amount ⅛ to ¼ teaspoon per loaf. If the bread rises too high, decrease the amount of sugar. The usual salt-to-flour ratio is ¼ 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 non-fat 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 ¼ 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 ¼ cup of egg substitute; ½ 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 ¼ 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 ¼ 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 ¼ 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.

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