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# BREAD FORMULAS

## containing 6 and 10 percent milk solids

Schools and institutions concerned with the milk content of diets for children, convalescents, and others, may wish to have bread baked to order by the commercial baker to assure a product containing specified quantities of milk solids.

The formulas in this publication were developed especially for the purpose. Consumer acceptance tests of the breads produced commercially from these formulas have been made in school lunch programs and hospitals with favorable results.

The formulas may be used in drafting specifications for bread purchasing agreements. The agreement should specify the formula (or formulas) to be used; the size, shape, baked weight and number of slices per loaf; and the price. Slices that are about 1/2 inch thick and weigh 1 ounce are usually preferred.

The formulas call for the use of unenriched flour and enrichment wafers because bakers' flour is commonly unenriched and the wafers are more convenient for meeting standards for "enriched bread" required by States having enrichment laws.

Bread enrichment is now required by law in over half the States, with regulations for the content of thiamine, niacin, riboflavin, and iron. One of the nutritional requirements for Federally assisted lunches under the National School Lunch Program is the use of whole-grain or enriched bread.

These five formulas (first released in May 1950, now slightly revised) are adaptations of selected kitchen-type large-quantity recipes included in "Yeast and Quick Bread Recipes for the School Lunch," PA-92, published in November 1949.

Bureau of Human Nutrition and Home Economics  
Agricultural Research Administration  
United States Department of Agriculture  
Washington, D. C.

WHITE BREAD (10 percent nonfat dry milk 1/)

	<u>Parts by weight</u>
Wheat flour	100.0
Water (variable)	65.0
Nonfat dry milk	10.0
Sugar <u>2/</u>	8.0
Fat	8.0
Salt	2.5
Compressed yeast	4.0
Enrichment wafer	

Approximate yield: 175 pounds of baked bread per 100 pounds flour.

WHOLE-WHEAT WHITE BREAD (6 percent nonfat dry milk, 50 percent whole-wheat flour 1/)

	<u>Parts by weight</u>
Wheat flour	50.0
Whole-wheat flour	50.0
Water (variable)	64.0
Nonfat dry milk	6.0
Sugar <u>2/</u>	6.0
Fat	6.0
Salt	2.5
Compressed yeast	4.0
Enrichment wafer	

Approximate yield: 165 pounds of baked bread per 100 pounds flour.

RAISIN BREAD (10 percent nonfat dry milk, 50 percent raisins 1/)

	<u>Parts by weight</u>
Wheat flour	100.0
Water (variable)	65.0
Nonfat dry milk	10.0
Sugar <u>2/</u>	8.0
Fat	8.0
Salt	2.5
Compressed yeast	4.0
Seedless raisins	50.0
Enrichment wafer	

Approximate yield: 220 pounds of baked bread per 100 pounds flour.

WHITE BREAD WITH SOY (6 percent nonfat dry milk, 4 percent soy flour 1/)

	<u>Parts by weight</u>
Wheat flour	96.0
Full-fat soy flour	4.0
Water (variable)	65.0
Nonfat dry milk	6.0
Sugar <u>2/</u>	7.5
Fat	7.5
Salt	2.5
Compressed yeast	4.0
Enrichment wafer	

Approximate yield: 170 pounds of baked bread per 100 pounds flour.

1/ Percent indicates weight in relation to total flour.

2/ Less sugar, but not below 4 percent, may be used if desired.

WHITE BREAD WITH SOY AND WHEAT GERM (6 percent nonfat dry milk,  
3 percent soy flour, 3 percent wheat germ 1/)

	<u>Parts by</u> <u>weight</u>
Wheat flour	97.0
Full-fat soy flour	3.0
Water (variable)	65.0
Processed wheat germ	3.0
Nonfat dry milk	6.0
Sugar <u>2/</u>	8.0
Fat	6.0
Salt	2.5
Compressed yeast	4.0
Enrichment wafer	

Approximate yield of baked bread--170 pounds per 100 pounds of flour.

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Suggestions for use of formulas:

The five bread formulas were tested by a large baking company with very satisfactory results. Bread was made in 500- and 1,000-pound batches, using regular plant equipment and following usual procedures. The formulas were test-baked also in the laboratories of the American Institute of Baking and produced bread of good quality.

Although any baker may expect to obtain highly acceptable bread by using these formulas, a few precautions are suggested:

1. Nonfat dry milk of excellent baking quality should be used to avoid possible make-up difficulties and small loaf volume.
2. Although the formulas do not include mineral yeast foods, it may be possible to use these in accordance with local bakery practice. A pretest with the high-milk formula is advisable.
3. Because of the high level of yeast used (4 percent) the fermentation time is short and critical. A relatively strong flour is needed whether the breads are made by the sponge or the straight-dough method.
4. Baking time and temperature should be controlled exactly. The ingredients that are used in large amounts to enhance the flavor also contribute to crust color. A deep golden-brown crust is to be expected. The crumb may not always be done when the crust has acquired a light-brown color.

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1/ Percent indicates weight in relation to total flour.

2/ Less sugar, but not below 4 percent, may be used if desired.



