

## CONSUMPTION OF WHEAT FLOUR AND BAKERY PRODUCTS BY THE AMERICAN HOUSEWIFE

by  
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Present trends in the domestic consumption of wheat flour and bakery products are of marked interest to all wheat producers, especially now when foreign demand for wheat and wheat products is beginning to decrease. Flour consumption in the United States insofar as the housewife is concerned can be grouped in two categories: home baking itself and bakery purchases. There are also differences in the type of baked goods consumed such as bread, biscuits, cakes, pies, etc. What is the overall American picture of flour utilization at the present time, and what proportion of flour is used by the housewife as compared to the finished bakery product?

These and similar questions are answered in the October, 1948, issue of *BAKERS' DIGEST* in an article based on results from a two and a half year study of bakery purchases and home baking habits made by Industrial Surveys, a national marketing research organization for General Mills. The primary objective of the survey was to discover whether bakers had reached the limit of the available market for their products, a very important problem now that bakers are feeling the pinch of decreased sales and increased competition. The report is based on data secured from 1100 families located in all sections of the United States. Each week housewives from these 1100 families sent a special form to Industrial Surveys showing all bakery purchases, items baked at home, and flour or mix used. Care was taken to obtain representative data on a regional and city-wide basis. The inquiry commenced in 1945 and finished January, 1948.

Now, what are the more important results flowing from this survey? It was found that only 12.2% of the housewives indicated baked their own bread, while 51.8% baked their own cakes and 51.5% made pies. These figures show that there is a very large potential market for bakery products. The average housewife used about 2¼ lbs. of flour per week in 1947, equivalent to approximately three loaves of bread or five 8" layer cakes. January showed the greatest use of flour, with December next, and February a close third. Summer months were lower than winter, but the difference was not as great as has been often assumed.

The same housewife spent in the neighborhood of \$1.00 per week on bakery products in the same period, an increase of 19% over the previous year due to increased cost. Bread prices rose 19% according to the government index. This is about the same as the increase in bakery expenses.

About three-fourths of all flour used in the home goes into "plain cooking"—biscuits, bread, rolls and other unsweetened products. The remaining one-fourth is employed in making cakes,

pies, cookies or other sweet goods. More than one-third of the total family flour is used for biscuits. This is particularly surprising to residents of the northern states, but the national average is affected by the southern custom of serving hot biscuits at almost every meal. Bread is second, about one-seventh of total pounds of flour purchased, and pie and cake are almost tied for third place. Gravy making accounts for 5.5%, about the same as pancakes or rolls.

It was found in the survey that the proportion of the dollar spent on bread has increased, while that spent for sweet goods has decreased. In the following list average weekly purchases of bakery products are shown in detail:

	% Total		% Total
White .....	43.3	Cakes (Incl. cup) .....	15.3
Whole Wheat .....	6.2	Cookies (bulk and pkg.) .....	9.8
Plain Rolls .....	4.5	Sweet Rolls .....	4.5
Rye .....	2.8	Doughnuts .....	4.1
All other loaf .....	0.8	Coffee Cakes .....	3.1
Raisin .....	0.7	Pies .....	2.5
Miscellaneous .....	0.3	All other .....	2.1
<b>Total Breads .....</b>	<b>58.6</b>	<b>Total Sweet Goods .....</b>	<b>41.4</b>

White bread alone accounts for 43.3 cents of each dollar spent for baked food in 1947. For 1946 the value was 38.7 cents. This trend is probably caused by the increased cost of living and the resultant tendency to cut down buying of "luxury items." This trend is very important to the baker if it continues.

Of the total bread purchased 70% is white; rye bread is used chiefly in the east, and whole wheat mainly in the west.

In the southeast section of the country the average homemaker uses 3.0 lbs. of flour per week; the eastern homemaker however uses only 1.1 lbs., and is the smallest flour purchaser. The southwest, central and west housewives use 2.1, 1.5 and 1.3 lbs. respectively. In the southeast 87.5% of the flour is used for plain goods, 71% being for biscuits. The southeast and the central area bake the most cakes by a slight margin; pie making is practically the same in each region, except in the southwest, where it is about 20% below the average of the country as a whole. The west uses 19.3% of the flour and mixes for waffles and pancakes, almost three times as large a percentage as the east. Bread, cakes and cookies are the three main bakery items purchased in all sections of the United States. Families in the central region buy the most sweet rolls, while eastern families go in for pies.

Farm families do approximately 80% more baking than the average city family, using about 3.6 lbs. of flour per week. City families use much less, but the quantity bought is markedly influenced by the size of the city in which the family resides. Small city families use 1.8 lbs., medium sized city families 1 lb., and large sized city families 0.7 lbs. The average farm family uses more than four times as much flour for bread and six times as much for biscuits as the average urban family. City dwellers, however, bake much more sweet goods than country people.

The cost of bread has remained closer to the pre-war average than any other basic food product with the exception of canned fruits and vegetables according to an analysis of the latest Bureau of Labor Statistics made by the American Bakers' Association. Canned fruit and vegetables have advanced 57.7%, bread 63.1%, while fish is now 201.6% higher, meat 163% and butter 152%. These percentage increases are based on the 1935-1939 period. Nearly all bread sold today is enriched with vitamins and minerals, but only a small proportion of that on the market in 1939 was enriched.

### FERTILIZER INCREASES WHEAT YIELDS AT LANGDON

The soil on the Langdon Substation is a fairly typical Barnes fine sandy loam. Total chemical analyses of the amounts of certain important plant food elements were made from samples collected in 1913. The results of these analyses, expressed in pounds per acre, follow:

Soil layer	Nitrogen	Phosphorus	Calcium	Magnesium
0-7	7840	1380	20,000	15,200
7-18	8600	2280	36,000	28,000
18-40	6180	3240	191,400	69,600

In the spring of 1913 a comprehensive fertilizer trial involving a 4 year rotation of corn, wheat, barley, and field peas was laid down on this Substation. These experiments were summarized by the late P. F. Trowbridge in North Dakota Agricultural Experiment Station Bulletin 134 (Sept. 1920). These experiments were continued for 6 years when they were discontinued because of lack of financial support for the Substation. In 1940 a new and simpler set of fertilizer trials was set up in a simple cropping system of wheat alternated with summer fallow or corn. Three types of fertilizer, each applied at the rate of 50 pounds per acre, are used on wheat seeded on summer fallow. The average of 9 years results (1940-48) follows:

	Yield Per Acre (Bushels)	Increase Over Check (Bushels per acre)
Check (no fertilizer) .....	27.0	---
0-43-0 Superphosphate .....	29.2	2.2
6-30-0 Ammoniated phosphate .....	31.1	4.1
11-48-0 Ammoniated phosphate .....	32.2	5.0

In 1948 all fertilized plots were 6 inches taller than the unfertilized plots at heading and also ripened 2 days earlier. The five bushel increase in yield is an 18.5 percent increase, a most striking long-time response to fertilizer in a summer fallow system. In 1948 one series of trials included growing wheat the second year after fallow without further use of fertilizer; the ammoniated phosphate returned an 8.6% increase over the unfertilized as a residual or second year benefit, but the 0-43-0 superphosphate yield was essentially the same as the unfertilized yield. (Data abstracted from reports of Superintendent Victor Sturlaugson and earlier report) H.L.W.