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Grain Products Regain Popularity

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Grain is called the "staff of life," but it seemed for a while that Americans were getting along with less of it. However, the trend is changing.

After declining dramatically from the early 1900's, to a low of about 137 pounds per capita in 1972, consumption of grain products increased 9 percent by 1985 (figure 1). Current consumption of food grains is approximately 150 pounds per person per year, similar to levels during the 1950's.

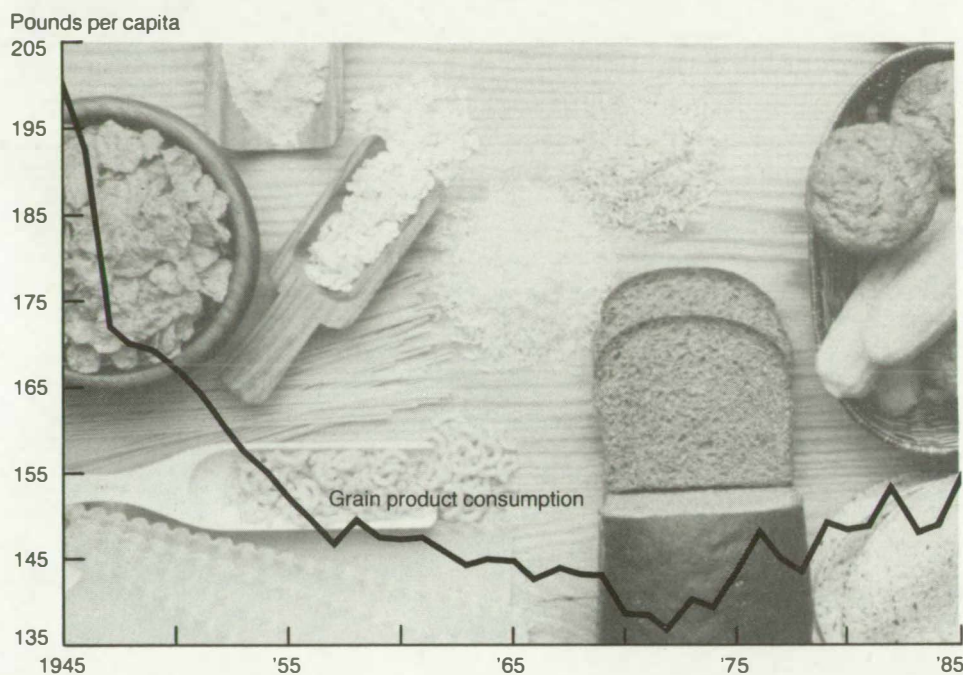
As a percentage of the food budget, U.S. households increased their expenditures on cereal and grain products from 12.1 percent during 1972-73 to 12.7 percent during 1980-81. The only other gainers were fruits, sweeteners, and specialty foods and beverages.

Many factors have led consumers to eat more grain products. Recommendations from many health groups, including the American Heart Association and the National Cancer Institute, have encouraged Americans to reduce their fat consumption and increase use of the complex carbohydrates found in grain products.

Another major influence on the shift to grain products is the increasing demand for variety in the diet. Furthermore, rising incomes mean that consumers spend more on prepared foods and foods away from home. Manufacturers have responded to these influences by introducing grain-based foods that are new to the American diet—like croissants. In addition, some old favorites, such as pasta and rice, have achieved new popularity.

Perhaps as part of the quest for variety, Americans seem more willing to experiment with different cuisines, such as Italian, Mexican, and Chinese. These cuisines

Figure 1. Grain Product Consumption Has Increased Since the Early 1970's



generally include more grain products than the standard American fare of meat and potatoes.

A recent survey of eating patterns provides further evidence that Americans are using more grain products. USDA's Continuing Survey of Food Intake by Individuals measured the food eaten by women 19-50 years of age and their children under 5 years old for 1 day in 1985 (for more information on survey, see articles on women's diets and calcium in this issue). The women surveyed ate 29 percent more grain products in 1985 than their counterparts in 1977, the last year in which a similar survey was taken. This gain was primarily due to a 79-percent increase in consumption of grain mixtures. Grain mixtures are entrees that may or may not include a small amount of meat, such as pizza or enchiladas. Grain consumption by children under 5 in 1985 was up 18 percent from 1977, primarily be-

cause of increases in breakfast cereals and grain mixtures.

Wheat Flour and Products Show Major Gains

Wheat is the major grain product eaten in the United States, with wheat flour and other products representing more than 80 percent of total grain consumption. In 1984, 163 pounds of wheat per person (grain equivalent) were used in manufactured food products (for background on data, see sidebar box).

Flour has been one of the major gainers in recent years. In 1985, 122.5 pounds of wheat flour were produced for every American, up 12 percent from the low point in 1972 and the highest in more than 30 years (table 1). Only about 15 percent is sold directly to consumers, 10 percent as flour and 5 percent in prepared mixes, such

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as cake mixes. The remainder is further processed into baked goods, pasta, and many other foods.

Consumption trends reflect growing concerns about health and demand for variety. Nowhere are these issues more clearly seen

than in the case of bread. Total per capita bread consumption declined 22 percent after 1967, to about 46.4 pounds by 1985 (*figure 2*). All of the decrease was in white pan bread, which fell more than 39 percent since 1967. At the same time, consumption

of whole grain and variety breads (for example, rye, pumpnickel, French, and Italian) increased 12 percent and represented about 40 percent of total bread consumption last year. Whole wheat bread alone doubled after 1967, but at almost 9 pounds per person in 1985, it was still less than half the consumption of white bread.

Nutrition and variety in the diet contributed to the switch to whole grain and other breads. A 1983 survey by the Wheat Industry Council found that many people believed that white bread was high in preservatives and low in nutritional value. They also thought of it as more suitable for children, which may partly explain the decline in consumption, since the number of children has decreased since 1972. On the other hand, consumers perceived wheat bread to be higher in fiber and vitamins and lower in calories than white bread. They also considered it to be a better value than white bread.

White bread also has not been popular in the away-from-home market. A 1980 study by food manufacturer Rich Products, Inc. found that white bread was the favorite lunch bread of only 9 percent of those surveyed. French, Italian, and whole grain breads were preferred by 67 percent of the survey respondents.

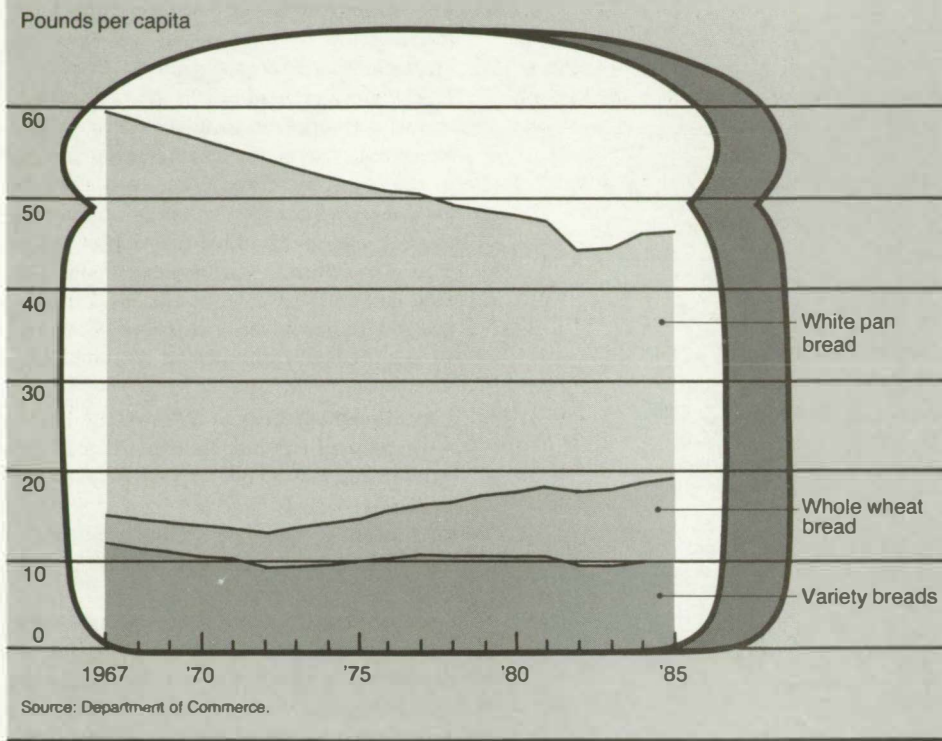
Sales of rolls increased 50 percent in 15 years, rising to almost 20 pounds per person in 1982, fueled by fast food sales of hamburger and hotdog buns. However, consumption of these buns has declined slightly in recent years, partly because of the introduction of fast food items that do not include bread, such as chicken, salads, and baked potatoes.

Declines in hamburger and hotdog buns have been more than offset by increases in other types of bread products. Kaiser and other variety rolls, bagels, and English muffins increased from 1.8 pounds per person in 1967 to 4.7 in 1982. English muffin sales alone doubled between 1972 and 1982, partly because of fast food breakfast sandwiches.

The cookie and cracker industries used over 3 billion pounds of flour in 1982.

Table 1. 1985 Wheat Flour Consumption the Highest Since the Late 1950's

	Wheat flour	Rye flour	Rice	Corn flour and meal
	<i>Pounds per person</i>			
1910-14	211.0	3.8	6.9	47.9
1915-19	194.6	3.3	8.8	44.2
1920-24	177.1	2.8	5.6	34.8
1925-29	179.8	2.8	5.6	29.5
1930-34	165.2	2.7	5.3	26.5
1935-39	159.5	2.3	5.8	23.1
1940-44	155.9	2.6	5.6	20.4
1945-49	145.7	1.7	4.7	14.3
1950-54	130.6	1.5	5.4	10.4
1955-59	120.8	1.3	5.5	7.9
1960-64	116.1	1.1	6.7	5.9
1965	113.3	1.2	7.6	6.8
1966	112.0	1.2	7.3	7.5
1967	113.0	1.2	7.5	7.7
1968	112.8	1.3	7.9	7.4
1969	112.5	1.2	8.3	7.5
1970	110.8	1.2	6.7	7.0
1971	110.5	1.1	7.6	6.7
1972	109.8	1.0	7.0	6.2
1973	112.8	1.3	7.0	5.9
1974	110.9	1.2	7.5	5.8
1975	114.5	1.0	7.6	6.0
1976	119.1	0.8	7.1	5.8
1977	115.5	0.8	7.5	5.7
1978	115.2	0.8	5.7	5.9
1979	117.2	0.7	9.4	6.2
1980	116.9	0.7	9.4	6.3
1981	115.9	0.7	11.0	6.2
1982	119.6	0.6	11.8	6.6
1983	116.1	0.7	9.8	6.6
1984	117.8	0.8	8.5	6.6
1985	122.5	0.8	9.3	6.8

Figure 2. White Bread Pulls Down Total Bread Consumption

roughly 13 pounds per person. Nineteen pounds of cookies and crackers were produced for each person in 1985 (table 2). Cracker consumption rose 21 percent between 1967 and 1977, but declined about 13 percent by 1985, to 8 pounds per person. Meanwhile, cookie consumption, which declined 18 percent between 1967 and 1982, was revitalized in 1983 by the introduction of soft store-bought cookies. Consumption jumped 6 percent in 1984 and another 5 percent to 11 pounds per person in 1985. Last year, the dollar value of supermarket sales of cookies rose 14 percent.

Sales Expand in Retail Bakeries

Another reason for the rising use of grain products is an increase in retail bakery sales. In 1982, the last year of the retail census, these bakeries took in \$6.2 billion, an additional 35 percent above sales by manufacturers.

Among retail bakeries, tremendous growth has occurred in the number and sales of those in supermarkets. Surveys by the bakery and supermarket industries indicate that the number of in-store bakeries has more than doubled since 1980, with sales topping the \$4 billion mark in 1985.

In-store bakeries appeal to customers because of the convenience and freshness of the products. Smaller households can buy just the amount they need, rather than relying on packaged products designed for larger families.

Bread and rolls accounted for about 39 percent of in-store sales in 1984; doughnuts, 16 percent; cakes, 11 percent; and pies, cookies, bagels, croissants, and other sweet baked goods, 34 percent.

About 50 percent of in-store bakeries rely on frozen dough that is produced elsewhere and baked in the store, particularly for labor-intensive items such as croissants. Frozen bakery products sold directly to consumers have also become more popular.

For example, The Kitchens of Sara Lee increased sales 25 percent in 1985.

Pasta Sheds Its Dull Image

One of the largest gainers among flour products is pasta. Macaroni, spaghetti, and noodles are made primarily from durum wheat, a very hard wheat that is somewhat higher in protein than other varieties. In 1982, more than 1.5 billion pounds of durum flour were made into pasta products. An additional 159 million pounds of pasta were imported. Last year, each American ate more than 12 pounds of pasta, up more than 30 percent from 1970 (table 2).

Pasta consumption has increased in part because these products fit into changing lifestyles, having shed their dull image in the process. As recently as 1983, respondents to the Wheat Industry Council's survey described pasta as "inexpensive, filling, and fattening." While dishes such as macaroni and cheese may still fit this description, other products, like pasta primavera—pasta and vegetables—help consumers see a different image.

While grocery store sales of pasta have increased modestly, it's the away-from-home market that has made the biggest gains. Pasta dishes in restaurants are now often considered a "light" alternative to more traditional entrees. The popularity of ethnic foods has also boosted pasta consumption. A recent survey by a restaurant magazine found that Italian food represents 40 percent of all ethnic meals ordered in restaurants.

Pasta salads have also moved into the spotlight. Instead of just serving macaroni salad as a side dish with a sandwich, restaurants are featuring a variety of pasta salads as entrees. In 1984, 45 percent of restaurants offered pasta salads.

Rice Gains Popularity

Rice is another major grain product to show significant consumption gains. Use of rice has increased about 39 percent since the 1970's 20-year low of 6.7 pounds per capita. Average consumption from 1980

Table 2. Consumption of Manufactured Grain Products on the Increase

	Breakfast cereals ¹		Total	Pasta	Cookies	Crackers and pretzels
	Ready to eat	Ready to cook				
	<i>Pounds per person</i>					
1965	7.6	3.1	10.7	5.7	NA	NA
1966	8.0	2.6	10.6	5.6	NA	NA
1967	8.3	2.1	10.4	6.4	11.7	7.6
1968	8.5	2.2	10.7	6.8	11.5	7.6
1969	8.6	2.3	10.9	7.2	11.3	7.7
1970	8.7	2.4	11.1	7.7	11.1	7.7
1971	8.9	2.5	11.4	8.1	10.9	7.8
1972	8.7	2.6	11.3	8.6	10.8	7.9
1973	8.9	2.7	11.6	9.0	10.6	8.0
1974	9.1	2.8	11.9	9.3	10.4	8.1
1975	9.3	2.8	12.1	9.7	10.1	8.4
1976	9.6	2.9	12.5	10.1	9.9	8.8
1977	9.8	3.0	12.8	10.4	9.7	9.2
1978	9.8	3.0	12.8	10.3	9.6	8.9
1979	9.9	2.9	12.8	10.2	9.6	8.6
1980	10.0	2.9	12.9	10.1	9.5	8.4
1981	10.1	2.9	13.0	10.0	9.4	8.2
1982	10.1	2.9	13.0	9.9	9.6	7.9
1983	10.2	2.9	13.1	10.5	9.9	7.8
1984	10.3	3.0	13.3	11.2	10.5 ²	7.9
1985	10.6	3.1	13.7	12.3	11.0 ²	8.0

¹Includes infant cereals. ²Estimated.

to 1985 was about 10 pounds, the highest since the 1920's.

About 60 to 65 percent of rice is sold for direct consumption, a relatively constant percentage since the mid-1950's. The next major use is in beer—29 percent of the total in 1982. However, USDA figures for rice consumption exclude direct shipments to brewers, because alcohol is not considered a food. If use in beer is included, per capita rice consumption would be around 13 pounds over the last few years, compared with 10 pounds for only food. Use of rice in beer has increased more than 70 percent on a per capita basis since the early 1970's, partly because of a 16-percent rise in beer

drinking. In addition, one major beer company uses only rice because it produces a lighter-tasting beer.

Rice is also used in processed foods, such as breakfast cereals and soup. In fact, breakfast cereals account for 75 percent of the rice used in processed foods. In 1982, 250 million pounds of rice were processed into breakfast cereals—about 1 pound per person. Soup, baby food, and packaged mixes were the other major processing uses of rice, accounting for another 55 million pounds or 0.2 pound per capita.

Like wheat, rice has benefited from greater variety in the diet and the healthy image of grain products. And similar to pasta, rice has gained in the away-from-home market. In 1982/83, 40 percent of rice was sold in

restaurant-sized bags of 25 pounds or more—up from 29 percent in 1971/72. Increasing numbers of ethnic restaurants serving rice, mostly Oriental and Mexican, have contributed to this growth.

The changing makeup of the population has also contributed to increased rice consumption. The number of Asians and Hispanics in the United States has more than doubled since 1970. Nonwhite households spend almost three times as much on rice than do white households. In addition, rice consumption is highest in the Pacific and Mid-Atlantic regions, where Asian and Hispanic populations are the largest.

Corn Outstanding in Versatility

Corn is the most versatile of all grain products. In 1984, over 1 billion bushels of corn were processed into a variety of food and industrial products, including oil, sweeteners, starch, alcohol, animal feed, and flour.

Corn is basically processed through either wet or dry milling. The wet milling process involves a long soaking or seeping step to remove the hull, gluten, and germ components. The remaining starch is used as an end product or further processed into either alcohol or sweeteners. Corn alcohol is used for beverages and for fuel. Sweeteners produced from wet milling include glucose, dextrose, and high fructose corn syrup (HFCS). Use of glucose and dextrose has remained relatively constant over the years. In contrast, use of HFCS has increased faster than almost any other food product, climbing from zero in the late 1960's to over 43 pounds per capita in 1985, mainly in soft drinks.

In the dry milling process, the corn kernel is either ground whole or processed to remove the germ and some of the gluten. This process divides the kernel into two separate products: alcohol and the more familiar corn flour and meal.

Consumption of corn flour and meal is far below the amounts used earlier in the century. Before refrigeration and year-round availability of fresh foods, wheat and corn meal were important staples in the diet.

Corn meal, however, has become significantly less important than wheat flour. At just under 7 pounds per person in 1985, consumption of corn meal has fallen 86 percent from the 1910-14 average. In contrast, wheat flour has dropped only 42 percent.

Consumption of corn products has, however, increased modestly in recent years. The growth in corn cereals, Mexican products, and snack foods has been a boon. Although still way below figures for the early part of the century, corn meal has increased 8 percent from the 1977 low.

Ethnic food growth is led by Mexican-type snack foods and a substantial rise in the number of Mexican restaurants. According to the National Restaurant Association, there were 13,034 Mexican restaurants in the United States in 1985, up 15 percent from 1983. Between 1973 and 1983, sales in Mexican chain restaurants increased at an annual rate of 24 percent—faster than any other type.

Big growth has also occurred in corn snack foods. Sales of corn and tortilla chips increased almost 70 percent between 1980 and 1985 (table 3). In the early 1980's, there was speculation that these products would replace potato chips as the snack food leader. With about 20-percent increases in 1980 and 1981, it looked like this might be true. However, increases have tapered off considerably over the last several years. Sales climbed less than 3 percent to \$1.63 billion last year. In contrast, potato chip sales reached more than \$2.7 billion. New flavors and thicker, crunchier chips have helped keep potato chips out in front in the snack food race.

Corn is also one of the major grains used in breakfast cereals. Though corn cereals lost some ground in the 1970's, consumption has increased steadily since 1977, reaching 3.3 pounds per person in 1985, double the level of the 1950's.

Breakfast Cereals on the Rise

While consumers reached for more corn cereals in 1985, there were also gains in wheat and mixed grain ready-to-eat cereals. Meanwhile, consumption of ready-to-eat cereals using rice or oats remained constant. The introduction of flavored instant varieties

boosted consumption of cooked cereals, primarily oatmeal (table 2). In total, consumption of breakfast cereals increased 22 percent since 1970, to 13.7 pounds in 1985,

with presweetened cereals accounting for the largest share of the more than 300 varieties and package sizes (figure 3).

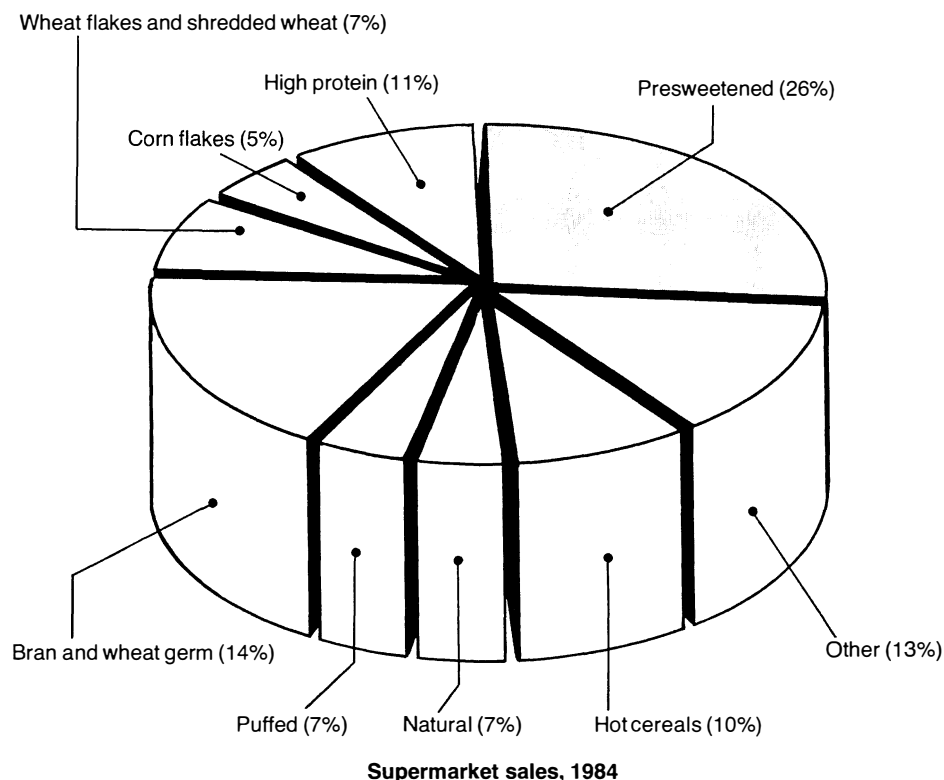
A major factor influencing sales of break-

Table 3. Growth in Corn Snack Sales Has Slowed Since 1980

	Corn snacks		Potato chips	
	Sales (dollars)	Change from previous year	Sales (dollars)	Change from previous year
	Millions	Percent	Millions	Percent
1980	1100	24.6	1900	17.7
1981	1190	19.1	2200	16.3
1982	1330	11.6	2540	14.7
1983	1470	10.8	2690	6.3
1984	1590	8.6	3050	13.4
1985	1630	2.6	3300	8.1

Source: Snack Food Association.

Figure 3. Presweetened Cereals Largest Segment of Breakfast Cereal Sales



¹Includes cold oats, combination packs of individual servings, and others. Source: Progressive Grocer.

fast cereals is demographic change. Children under 14 years of age eat the most breakfast cereals. However, with fewer children in this age group, manufacturers have turned their attention to designing products for adults.

Nutrition has helped successfully market cereals to adults. Companies are now advertising their product as having the most vitamins, the most whole grain, or the least sugar and preservatives. In 1984, Kellogg's kicked off the competition among high-fiber cereals with their ad campaign relating bran cereal to cancer prevention. Kellogg's share of the bran cereal market increased 30 percent in the 48 months following the start of the campaign. With other companies following Kellogg's advertising lead, bran and wheat germ cereals accounted for about 15 percent of ready-to-eat cereals in 1984—up from 12 percent in 1983.

Nutrition and health questions have implications for presweetened cereals. Parental concern about high sugar content of children's cereals influenced the industry to reduce the amount in these products. Sugar use by cereal manufacturers edged down 0.4 percent a year between 1977 and 1982, while use of fruit and nuts increased 16 percent. Some products were renamed to remove sugar from the title—both to appeal to adults and to make the products more acceptable to concerned parents.

Will Grain Consumption Continue To Increase?

Grain product consumption will likely gain further in the years ahead. Demographic changes should be a positive factor. For example, people over 65 spend more on cereals and bakery products than any other age group, and this population group is expected to increase 2.1 percent annually in the next 5 years. This could affect the demand for products currently favored by older people, including cooked cereals and white bread, assuming future seniors adopt the consumption patterns of those currently in that age group.

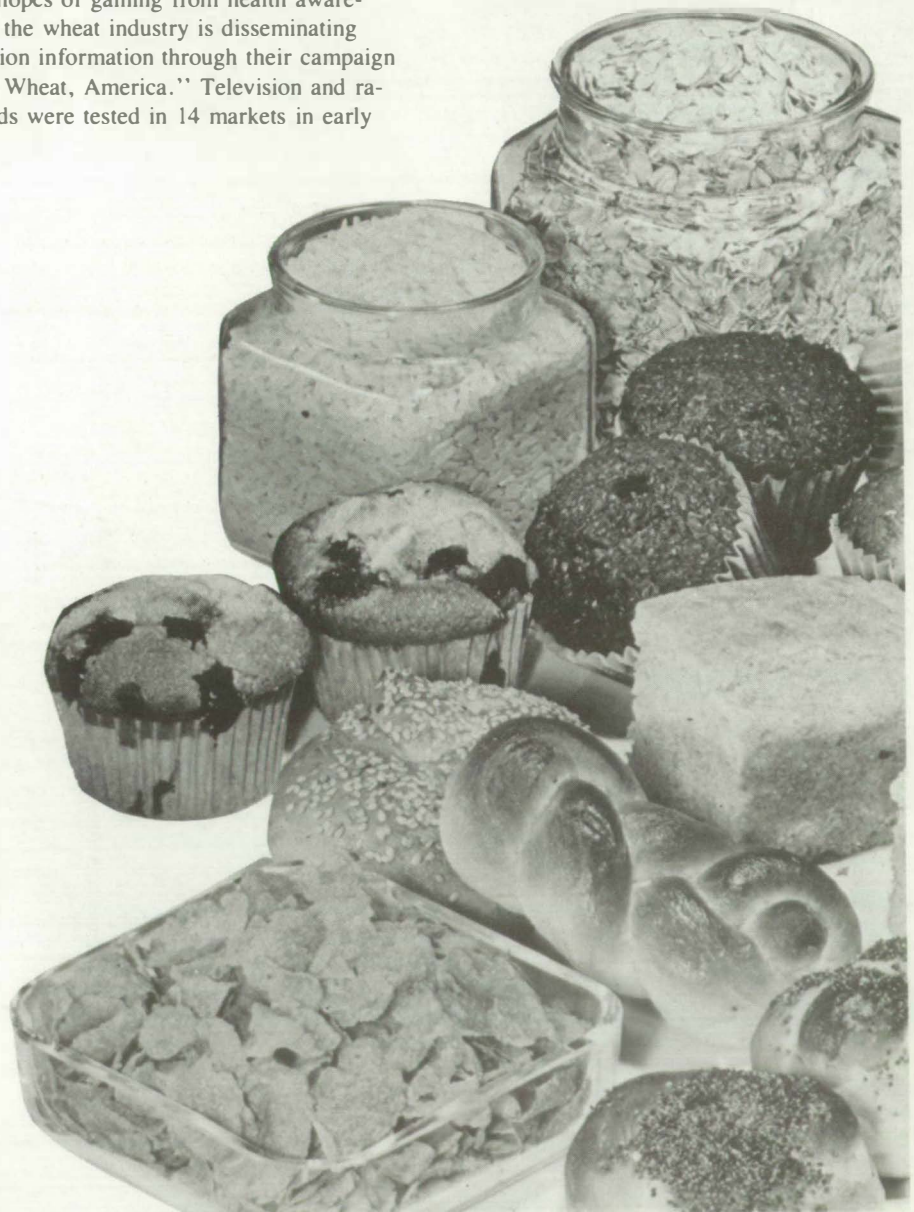
Similarly, the number of 5- to 19-year olds will increase 0.7 percent by 1990, which may mean a larger market for cook-

ies and breakfast cereals. The Department of Commerce forecasts breakfast cereal consumption up 2.3 percent a year, and cookies 1.7 percent, between now and the end of the decade.

Several major health groups are encouraging people to change their diets, including eating more foods that are high in fiber and complex carbohydrates. If many individuals respond to this advice, long-term growth for grain products could continue.

In hopes of gaining from health awareness, the wheat industry is disseminating nutrition information through their campaign "Eat Wheat, America." Television and radio ads were tested in 14 markets in early

1986, with another 13-week test that began in September. The goal of the campaign is to "improve consumer attitudes toward wheat foods, and convince American mothers that wheat products are good sources of nutrition for the whole family." With the cooperation of bakers and retailers, point-of-purchase materials have been placed in stores and inserts in bread bags encouraging customers to send away for a diet pamphlet from the American Heart As-



Grain products offer consumers the variety they are looking for.

A Closer Look at the Data

This article presents the latest available information on consumption of grain products. Because it was collected from several different sources, however, the latest years reported will vary. For example, the estimates of per capita consumption of rice, and wheat and rye flour were obtained from USDA's data on food supplies and utilization. Estimates were available through 1985.

Data on consumption of manufactured products (bakery products, breakfast cereals, pasta, and corn flour and meal) were derived from the U.S. Department of Commerce's Census of Manufactures, conducted every 5 years. The latest survey covered data for 1982. This information is augmented by annual surveys of a sample of manufacturers.

Beyond the differences in years reported, there are variations in what the data actually measure. USDA's consumption data, for instance, are actually "disappearance" figures because they are derived from estimates of the amount of grain used in food products adjusted for imports, exports, and stock changes. The data, therefore, are not direct estimates of food actually eaten.

sociation. As of May 1, the Wheat Industry Council had received 3,600 requests for the pamphlet.

The baking industry is also working on new ways to improve bread nutritionally. Two areas with greatest potential are calcium fortification and fiber enrichment. Whole wheat bread contains about 6 percent dietary fiber, compared with 2 percent in white bread. Through the addition of fiber, manufacturers could advertise their white

The Department of Commerce's estimates of consumption or use of manufactured products reflect the amount produced by manufacturers and sold to consumers through restaurants and food stores. For perishable items, like bread and other bakery products, production is a close approximation of consumption.

Omitted from the Census of Manufactures estimates are products made and sold in bakeries in retail establishments, such as supermarkets. However, while the Census of Manufactures data may understate the total quantity of bakery products consumed, they are indicative of trends in total consumption and shifts among different products.

Finally, adjustments are made in Census of Manufactures data for pasta to account for significant imports and exports of these products. For other bakery and cereal products, trade is negligible.

For more information about data on cereal and bakery products, contact William Janis, Department of Commerce, International Trade Administration, 14th Street and Constitution Avenue, N.W., Washington, D.C. 20230, (202) 377-2550.

bread as having as much fiber as whole wheat. If Kellogg's success in marketing high-fiber cereal is indicative of consumer attitudes, fiber can be used as an effective marketing tool.

The picture also appears bright for pasta. One industry analyst predicts growth of 8.3 percent a year in sales of pasta over the next 10 years. Because of new tariffs on imported pasta, future growth in consumption will likely draw more heavily on domestic supplies.

As for the other grains, rice consumption could increase. The Food Security Act of 1985 substantially lowers the price farmers are paid for their rice relative to other grains. While it's unlikely that this reduction will significantly lower the retail price, it should affect the wholesale price, which may encourage restaurants and institutions to offer more rice dishes on their menus. Food processors should also be enticed to manufacture more processed rice products or include rice in processed entrees.

A larger ethnic population should further increase consumption of rice and corn. The U.S. Census Bureau forecasts that between now and the end of the century, the Hispanic population in the United States will increase 66 percent and the Asian 58 percent, compared with increases of 10 percent for whites and 24 percent for blacks. Though immigrants and their families adopt many American eating patterns, they still maintain preferences for their native cuisines. Their presence also helps introduce other Americans to new tastes and broadens the variety of foods available. □

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