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Marketing Information for Minnesota Dairy Farmers

Market Trends and Outlook

Some important changes in the marketing of Minnesota milk have taken place in recent years. These have affected consumption and patterns of milk use.

Consumers play a vital role in the marketing system. Their purchases are, in effect, "market votes" that tell the industry what they want in dairy products. Over the 10-years from 1967 to 1977, U.S. consumers have increased their expenditures for dairy products from \$14.1 billion to \$27.4 billion, up 94 percent. Even so, expenditures for dairy products fell from 14.8 percent to 12.6 percent of all food expenditures over the same 10 years.

Retail dairy prices rose 74 percent from 1967 to 1977, while food prices almost doubled. Retail prices for fluid products, butter, and ice cream rose a little less than average, while retail price rises for cheese and evaporated milk were above average.

U.S. CONSUMPTION TRENDS AND MILK USE

The long-term trend in U.S. per person consumption of all dairy products, as measured on a milk equivalent basis, has been downward. U.S. per capita civilian consumption was 581 pounds milk equivalent in 1967, fell to 544 pounds in 1974, and then rose to 552 pounds in 1977. These figures include products coming to consumers through both commercial channels and government programs. Total civilian use of milkfat in all dairy products increased about 3.6 percent during the 10 years. Milk solids-not-fat increased about 6.8 percent. These figures reflect population growth since per capita consumption has declined.

Total pounds of cheese sold rose 70 percent between 1967 and 1977, reflecting both population growth and increased per capita use. Per capita cheese consumption increased from 10 to over 16 pounds between 1967 and 1977—up more than 60 percent. Both American and Italian cheeses posted strong consumption gains, reflecting changes in eating habits and increased consumer income. These trends are expected to continue.

Total fluid sales (including cream and specialty products) based on weight increased 5.5 percent between 1967 and 1977, but based on milkfat content there was a decline of 4.4 percent. This reflected the shift to lowfat fluid products and away from whole milk and cream. Dietary considerations, comparative costs, and the development of substitutes such as whipped toppings and coffee whiteners have all played a role in the declining use of milkfat in many fluid products.

Per capita civilian consumption of butter fell from 5.5 to 4.4 pounds, while total volume of commercial butter sales dropped by about 11 percent between 1967 and 1977. This decline is a continuation of the long-term trend and reflects the tough price competition from margarine. Further declines in per capita consumption are expected to be small since the institutional and ingredient (manufacturing) uses of butter have increased and are expected to remain stable.

Nonfat dry milk has declined in production and consumption. Production of nonfat dry milk dropped 34 percent between 1967 and 1977. In part, this reflects reduced amounts of whole milk available for butter production. Per capita consumption in 1977 was 3.4 pounds, compared to 5.6 pounds in 1967. The loss in per capita consumption of nonfat dry milk has come primarily in its use as an ingredient in processed foods and has been replaced by lower-cost ingredients such as dried whey.

Changing consumption patterns have influenced the use of the U.S. milk supply. The strong demand for cheese pulled a greater proportion of milk into its production—about 24 percent in 1977 compared to 15 percent in 1967. The proportion used in fluid products declined from 47 to 43 percent, while the proportion used in butter production declined from 23 to 18 percent.

An interesting development has been the increasing amount of fat available for butter manufacturing that has resulted from the declining average milkfat test of fluid products and the increasing amounts of whey cream (watery part of milk which separates from the curd in cheesemaking) available from cheese manufacturing. It has been estimated that in 1977 about 43 percent of U.S. manufactured butter came from these fat sources rather than directly from whole milk. In 1967 the proportion was 23 percent.

MINNESOTA MARKETING TRENDS

The big change in Minnesota has been cheese production. In 1967 there were 19 plants producing 100 million pounds of cheese (not including full skim milk and cottage cheese). By 1977, 30 plants were producing over 400 million pounds of cheese. About 11 percent of the total amount of milk available for processing in 1967 went into cheese, compared to 43 percent in 1977 (figure 1). Minnesota's share of total U.S. cheese production increased from 5 percent in 1967 to 12 percent in 1977.

The increase in the importance of cheese has meant a decline in butter and nonfat dry milk production. Minnesota is a leading butter state, producing about 200 million pounds in 1977: 37 percent less than in 1967. Butter production accounted for half of the milk available for manufactured products in 1977, compared to over 80 percent in earlier years. Since an expanding cheese industry produces increasing amounts of butter from whey and, therefore, offsets some of butter's decline, the vast change the Minnesota butter-nonfat dry milk industry has experienced is probably best illustrated by nonfat dry milk production. Production of this item, as well as the amount of skim milk available to be processed, fell by nearly 60 percent between 1967 and 1977.

The processing of milk into other manufactured products such as ice cream, dry whole milk, and sweetened condensed milk showed moderate growth between 1967 and 1977. In connection with the cheese industry expansion and environmental regulations about whey disposal, whey drying also

Figure 1. Use of manufacturing milk in Minnesota

	1967	1977
Other manufactured dairy products	7%	7%
Cheese	11%	43%
Butter	82%	50%

stepped up. Dry whey for both human food and animal feed produced in Minnesota accounted for 25 percent of U.S. production in 1977. Whey drying expanded more rapidly in Minnesota than in more traditional cheese producing areas. Large cheese plants with large volumes of whey reduced whey drying costs and improved the economic feasibility of the process at prices generally available in the Midwest.

Fluid milk, cream, and related products have never accounted for as large an outlet for Minnesota's milk as in many other states. Annually, about 12 to 15 percent of the milk produced in Minnesota is used in fluid form. The remaining 85 to 88 percent is sold in the national market as manufactured products.

Fluid product consumption patterns in fluid markets available to Minnesota milk show the same kinds of changes described earlier—lower fat products and reduced per person consumption. But the trend to lowfat milk items has gone farther in Minnesota than in the rest of the U.S. In 1977, under the Upper Midwest milk marketing area 70 percent of milk sales were lowfat milk, compared to 35 percent for the U.S.

With comparatively slow-growing markets for fluid products, and rapid conversion to grade A, the proportion of grade A milk used in fluid products has declined. In 1977, 28 percent of the grade A milk in the Upper Midwest marketing order was used in Class I or fluid products. This means that a high proportion of the grade A milk produced in Minnesota must look to the manufactured products markets rather than fluid markets for sales outlets. In 1977, 49 percent of the milk produced in Minnesota was grade A. A continued farm conversion to grade A is expected, which will further reduce the proportion of grade A milk used in fluid products.

PRICE TRENDS

Many complex factors make up rates of change shown in table 1 prices, but a few generalizations are possible. The smaller percentage increase in the price of milk for fluid use compared to manufacturing milk has two causes: (1) Differentials between the two prices have generally been constant compared to substantial increases in the level of base prices, and (2) The milk eligible for fluid use has increased more rapidly than the available markets.

The price of wholesale cheese more than doubled during the 10 years, nonfat dry milk more than tripled, and the butter price increased by only 48 percent. Strong competition from

Table 1. Ten years of price change in milk products

Product	1967	1977	Percentage change
Cheese, Chicago wholesale, per pound	\$45.22	\$96.83	114
Butter, Chicago wholesale, per pound	\$66.68	\$98.42	48
Nonfat dry milk, Chicago, per 100 pounds	\$20.50	\$67.40	229
Milk eligible for fluid use, U.S. average, per 100 pounds	\$5.43	\$9.96	83
Manufacturing milk, U.S. average, per 100 pounds	\$4.06	\$8.70	114

margarine has limited the price rise for butter. The shift in demand toward lowfat milk together with reduced supplies of nonfat dry milk tended to increase its price. In addition, comparatively weak demand for butter has made it necessary to shift some of the burden of price support away from butter and toward nonfat dry milk. Cheese generally has had a strong demand, which has permitted price increases as well as a substantial increase in consumption.

SUMMARY AND OUTLOOK

The shift to grade A milk in Minnesota is expected to continue. This will mean that the proportion of Minnesota's milk production marketed under the Upper Midwest milk marketing order will continue to increase. But, since fluid outlets for milk are expected to expand slowly, the manufactured products markets will continue to be the dominant outlets.

Cheese, rather than butter, can be expected to be increasingly important as an outlet for Minnesota milk and the cheese market will play a major role in the price farmers are paid for milk. The effectiveness of the U.S. price support operations will increasingly depend on cheese market developments.

U.S. butter production will increasingly be a sideline of fluid markets and cheese production. This trend, together with the increasing value of the nonfat portion of milk, will mean the price of butter will become less important in channeling whole milk into butter production. But the price of butter continues to be an important factor in butter consumption and it will continue to lag behind other dairy prices.

As cheese production claims more of the available milk supply, and as the amount of butter produced from whole milk declines, nonfat dry milk production will also decline. Smaller supplies of the nonfat dry milk and its increasing importance in price support operations will increase its price and help hold some milk for butter and nonfat dry milk production.

In fluid markets, the increasing value of nonfat components compared to fat will tend to bring the prices, at least on a percentage basis, of skim, lowfat, and whole milk closer together.

Increasing cheese production will lead to increased whey production in Minnesota. But the market for whey is not expected to strengthen greatly, if at all. Use of or disposal of surplus whey will be a problem.

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