MARKETING RESEARCH REPORT NO. 709

MARKET POTENTIAL FOR LOW-FAT MILK

U. S. DEPARTMENT OF AGRICULTURE
ECONOMIC RESEARCH SERVICE AND STATISTICAL REPORTING SERVICE

PREFACE

This study is designed to provide producers, processors, and others in the dairy industry with facts heretofore unavailable concerning low-fat fluid milk. The research is part of the U.S. Department of Agriculture's broad program aimed at the development of new markets as well as the expansion of existing markets for farm products.

The study is a cooperative research effort of the Economic Research Service and the Statistical Reporting Service of the U.S. Department of Agriculture. It was conducted under the general supervision of Marshall E. Miller, Chief, and Philip B. Dwoskin, Market Potentials Branch, Economic Research Service, and Trienah Meyers, formerly chief, Special Surveys Branch, Statistical Reporting Service, and now Deputy Assistant Secretary of Agriculture for Marketing and Consumer Services.

The Market Potentials Branch was responsible for the overall development and design of the study and for publishing the results. Herbert H. Moede, project leader, was responsible for development of the questionnaires, collection of data from fluid milk processors, and analysis of these data.

The Special Surveys Branch conducted the household consumer surveys. Louis F. Basinger was responsible for development of the questionnaire and the field work. Betty Burnside analyzed the data and wrote the consumer survey section of the report.

The Dairy Divsion, Agricultural Marketing Service, U.S. Department of Agriculture, (now Consumer and Marketing Service) furnished valuable assistance in planning the preliminary research and in collecting data on low-fat sales on a recurring basis from Federal Milk Order Markets for this study.

Special appreciation is extended to Ervin L. Peterson, and Ernest B. Kellogg, Milk Industry Foundation, Washington, D.C., for their valuable assistance in the planning, questionnaire development, and mail collection phases of the study.

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SUMMARY

The sale of low-fat milk has brought some new users of fluid milk into the market place although it has displaced other types of fluid milk, chiefly whole and skim milk. Total fluid milk sales do not appear to be measurably increased by sales of this product. On the other hand, sales of low-fat milk partially offset declines in sales of whole milk, i.e., these sales retain as fluid milk users some of those consumers who would otherwise not purchase any fluid milk if a low-fat product were not available.

Before 1949, the sale of low-fat milk was apparently limited to the Midwest, but by 1953 this milk was available in at least one market in each of the major geographic regions. Industrywide sales of low-fat milk totaled an estimated 500 million quart equivalents in 1962 and rose to an estimated 620 million quarts by the end of 1963. If present trends continue, it is estimated that sales of low-fat milk could reach 1.8 billion quarts by 1970.

Most of the low-fat milk sold at the time of the survey contained approximately 2 percent butterfat and 10 percent nonfat solids. Usually whole milk contains about 3 1/2 percent butterfat and 8 1/2 percent nonfat solids. Most processors fortified their product with vitamin "D", but only about half of them were adding vitamin "A". Nonfat dry milk powder was most often used by processors to increase the nonfat solids content of their low-fat milk.

In most areas, low-fat milk sales are equal to or exceed those of skim milk. This may be attributed to the fact that in comparison with skim milk, a greater proportion of the low-fat product sold contains added solids-not-fat.

Depending upon the level of distribution and whether the low-fat product contained additional solids, retail prices charged for low-fat milk at the time of the survey averaged between 0.9 and 3.5 cents per quart below those of whole milk.

Product labeling did not appear to be a problem in most instances. Requiring the use of the word "skim" or "skimmed" in the label, however, was most frequently cited when labeling problems were mentioned by processors. Individual trade names, generally more suitable for advertising and copywriting purposes, are used more than generic terms to identify low-fat milk.

Most low-fat milk was distributed through three channels of distribution--home delivery, platform sales, and retail outlets. Except for the New England area, where quart packages were most popular, the largest volume of low-fat milk was distributed in half-gallon containers.

The proportion of total sales represented by the low-fat product declined as plant size, in terms of annual sales, increased. Additional equipment or personnel were not usually required for a plant to begin processing a low-fat product.

Most of the plants which did not market a low-fat milk product at the time of the survey indicated they were not planning to market one in the immediate future.

Household surveys indicated that during the 6 months prior to interview, low-fat milk had been used by 15 percent of Milwaukee families and 6 percent of the families in New Orleans. Almost half of the New Orleans families using low-fat milk had tried it for the first time during the preceding year, compared with just over a third in Milwaukee. In both cities, families with relatively higher incomes and better educated family heads were more likely to use low-fat milk.

Consumers used low-fat milk primarily for health-connected reasons. Its reduced fat content, together with its nutritional adequency and generally acceptable taste, made it popular with those who were dieting or merely watching their weight. Of the using families, 84 percent had dieting or weight-watching members, compared with about half of the nonusing families.

New Orleans consumers paid more for the product than Milwaukee consumers and, in addition, generally paid more for low-fat milk than for whole. Majorities in both cities were satisfied with what they paid, but a third of New Orleans consumers who quoted prices thought that low-fat milk was priced too high.

Low-fat milk was considered as a replacement for other milks, most frequently whole, by 54 percent of Milwaukee and 43 percent of New Orleans users. The other using families considered use of the product to be additional consumption.

For purposes of comparison, data were obtained on household consumption patterns for 6 types of milk: Whole milk, low-fat milk, skim milk, nonfat dry milk, buttermilk, and chocolate milk. During the week prior to interview, whole milk had been used by close to 9 in 10 families. Of the other milks, only skim milk in Milwaukee and nonfat dry milk in New Orleans had been used by as many as 2 in 10 families. Use of more than one kind of milk was reported for about half of the families in both cities.

Whole, low-fat, and skim milk were liked primarily for health-related qualities attributed to them. Nonfat dry milk was liked for its convenience, utility, and comparatively moderate cost. Major dislikes reported were for the consistency of skim milk and for the taste of both skim and nonfat dry milk.

Whole milk was the overwhelming favorite among all types of milk and for all age groups to be drunk with home meals, snacks, and meals away from home.

MARKET POTENTIAL FOR LOW-FAT MILK

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INTRODUCTION

Background

The general purpose of this study was to appraise the market potential for low-fat milk--a fluid milk product having a butterfat content that falls between the levels generally found in whole and skim milk sold at retail.

Fluid milk is generally considered to be one of the best nutritional sources of vitamins, minerals, calcium, and protein. However, per person consumption of fluid whole milk declined from 295 pounds in 1956 to an estimated 270 pounds in 1963 (7, p. 27)--an 8.5 percent drop, while per person usage of skim milk items increased from 20.6 to 27.2 pounds, or 42 percent. Total U.S. resident population increased by about 14.0 million people--approximately 8.5 percent (8) during this period.

Changes in consumer purchasing habits have had a significant impact on the retail sales of fluid milk products. Increased use of competitive beverage items such as carbonated and noncarbonated drinks may be one of the significant factors in this decline. Advances in farm management technology, particularly herding and feeding practices during the past decade, have led to increased output per cow. Both government and the dairy industry--through increased research, promotion, and development of new or improved fluid milk products--are seeking methods and products which will increase per person consumption of fluid milk. One such product is low-fat milk sometimes referred to as "2-percent" milk.

Low-Fat Milk Defined

Low-fat milk is considered a relatively new product. However, it has been available in some marketing areas for more than 10 years. Information relating to its sales volume, impact on sales of other types of fluid milk, and whether its use tends to increase overall consumption of fluid dairy products has not been available. Thus, research was undertaken to provide this information and to evaluate its importance in the marketing of fluid milk products.

The term low-fat milk, as used in this study, refers to a fluid milk product containing from 1.5 to 2.5 percent of butter fat. It may or may not contain additional

1/ Mr. Moede was responsible for the survey of milk processors; Miss Burnside, for the Household Consumer Survey. Miss Burnside transferred to the Department of Health, Education, and Welfare in September 1964.

solids-not-fat or vitamins, or both. Fluid milk products such as concentrated milk (on a reconstituted basis), buttermilk, and flavored whole or skim milk having a butterfat content within the specified range were not considered as low-fat milk and were excluded from the definition used for this study. 2/

METHODOLOGY 3/

In cooperation with the Milk Industry Foundation, a mailing list of fluid milk processing plants in the continental United States was compiled. This list contained addresses for about half (53 percent) of the total number of establishments reported in the 1958 Census of Manufactures (SIC Code 2026).

Information was collected to differentiate between the reporting companies by their total 1962 fluid milk sales volume and by geographic location (fig. 1).

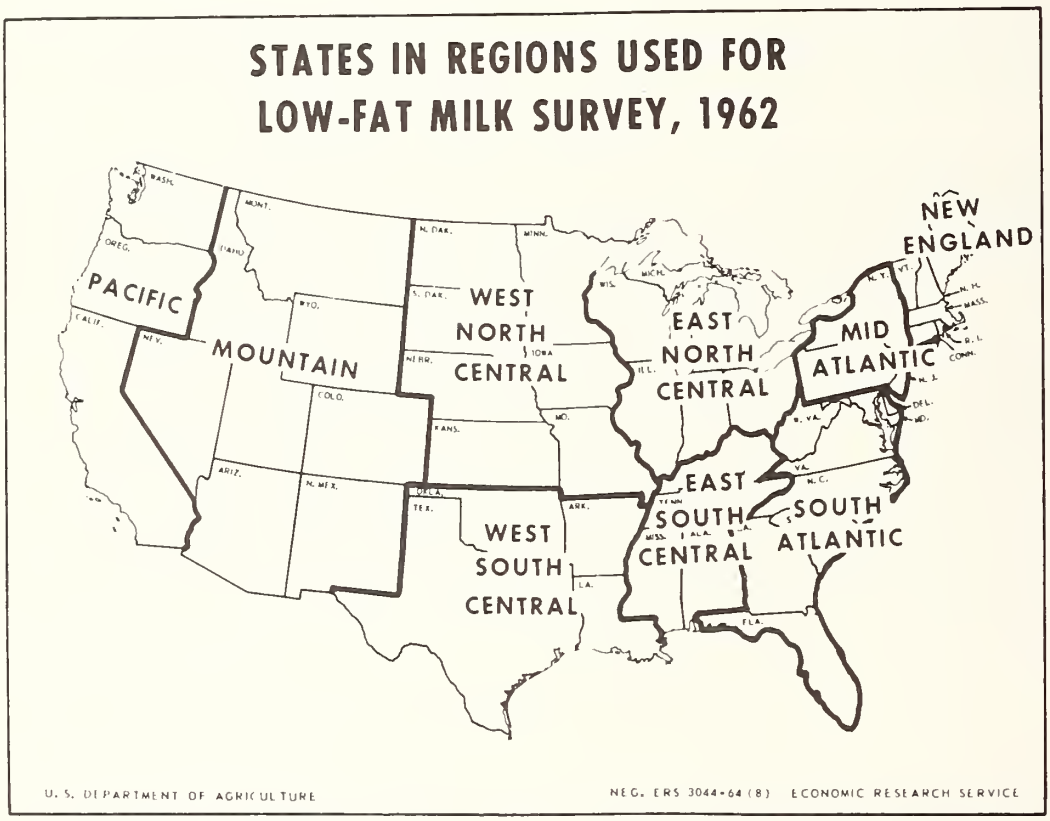

Figure 1

2/ The term low-fat milk as used in this study is not to be viewed as establishing a legal description or standard of identity for low-fat milk. Furthermore, the use of the above definition does not constitute an endorsement or acceptance by a Federal State, or municipal agency or any subdivision thereof as a legal description or standard of identity for this type of fluid milk product.

3/ For a more detailed discussion of the survey samples, see Technical Appendix beginning on page 61.

The sales groupings were as follows:

Sales category	1962 fluid milk sales reported
1	Under 400,000 quarts
2	400,000-999,999 quarts
3	1,000,000-4,999,999 quarts
4	5,000,000-9,999,999 quarts
5	Over 10,000,000 quarts

Of the 3,063 schedules originally mailed, 1,991--or 65 percent--were ultimately returned. Of the 1,991 schedules, 220 were returned by the post office as undeliverable for such reasons as "out of business" or "moved--left no forwarding address." A total of 89 were returned from distributors or jobbers who processed no fluid milk and were thereby excluded from the usuable schedule totals. Of the returned schedules, 45 could not be used since the information was incomplete or not supplied.

Supplementary data relating to market practices and costs, not included in the mail schedule, were obtained by personal visits to low-fat milk sellers in 5 cities. The cities selected were (1) Wilmington, Del., (2) Milwaukee, Wis., (3) New Orleans, La., (4) Salt Lake City, Utah, and (5) San Francisco, Calif. Primary factors in the selection of these cities were first, availability of fluid milk sales data by type of product; second, representativeness for a general geographic area; and finally, varied sales and consumption levels for the low-fat product between the cities.

Household consumption surveys were conducted in Milwaukee, Wis., and New Orleans, La. Objectives of these surveys were to develop information from a representative group of consumers about (1) consumption of different types of milk by the family as a unit and by individual members, (2) frequency of purchase of milk and purposes for which used, (3) use of low-fat milk, related attitudes and opinions, and product comparison with other types of milk, and (4) family type, age composition, income, and education of household head as these relate to family use of milk. Results of these surveys are included as part of this report.

NATIONAL MAIL SURVEY

Quantity of Low-Fat Milk Sold in 1962 and 1963

Fluid milk processors sold an estimated 500 million quarts of low-fat milk during 1962. This volume is estimated to have been worth approximately $123.5 million at retail value.

Industrywide sales of skim milk--including low-fat buttermilk, and flavored drinks--during 1962 totaled an estimated 2 billion quarts (7, pp. 24 and 27). Since sales of the low-fat product are generally included in the reported data for skim milk, any national sales estimate for the low-fat product must be related to skim milk figures reported for the period. The estimated figures were obtained by using the sales relationships which prevailed in the mail sample between plants selling and not selling a low-fat product and applying these ratios to the estimated 1962 skim milk sales.

Low-fat milk sales by plants included in the survey and selling the product amounted to 338 million quarts. This figure represents about one-sixth of all skim

milk sold in 1962. Retail value of these sales is estimated to have totaled $83.5 million for the year. The same plants accounted for about a third of the estimated 24.5 billion quarts (7, pp. 24 and 27) of whole milk and skim milk sold by the fluid-milk industry during 1962.

Nationally, sales of low-fat fluid milk during 1963 are estimated to have increased by about 120 million quarts over the previous year's figures. The retail value of the estimated 620 million quarts sold in 1963 is estimated at $153 million on the basis of 1962 prices.

These estimates are based primarily upon the overall sales pattern for the low-fat product in 57 Federal Milk Order Markets during the latter half of 1962 and all of 1963 (fig. 2).

Figure 2 shows sales of all three products rising during the period. However, the rate of increase for low-fat sales apparently exceeded the rates for the other two products. Although the figure shows low-fat milk sales generally moving upward, the increases do not appear to significantly affect the total sales trend for these three fluid milk products at this time. In addition, seasonal sales patterns are almost identical for the 3 types of fluid milk.

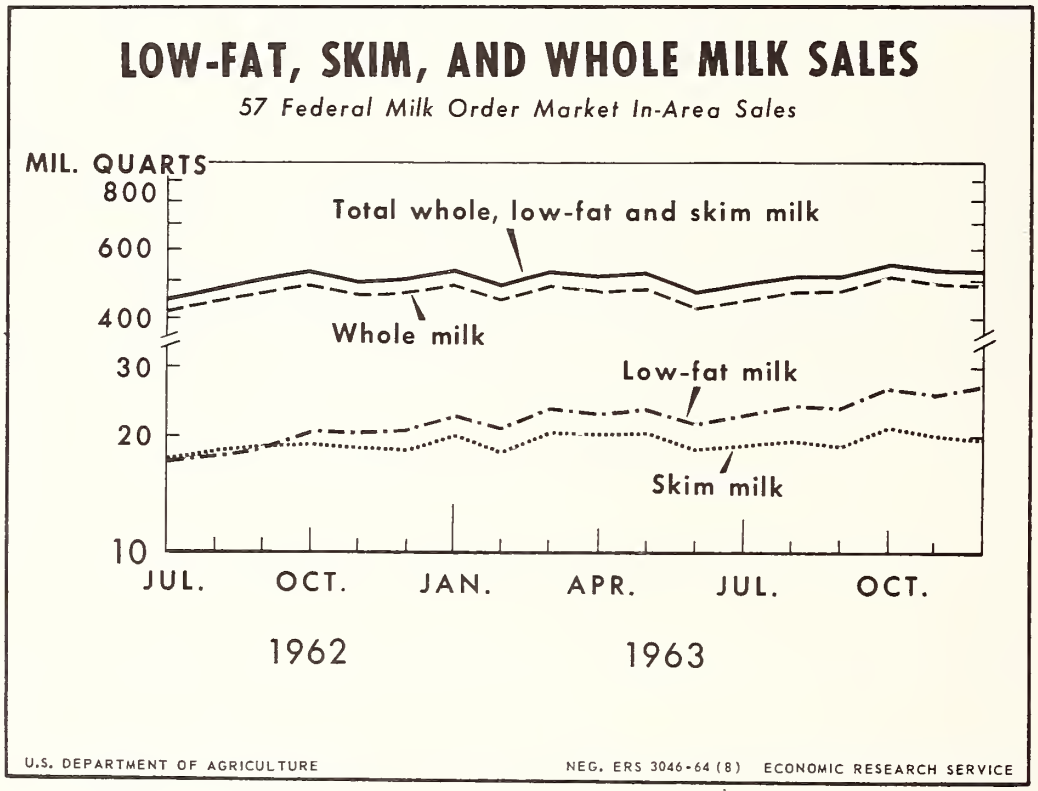

Figure 2

Sales--Geographic Regions, 1962

Table 1 presents a breakdown of low-fat sales by geographic region. As expected, the percentage of total low-fat product sold during the year was largest in the East North Central region, the area in which the product was first sold. Sales in this region combined with those of the West North Central area represented 6 of every 10 quarts

of low-fat milk sold during 1962. The western portion of the United States accounted for 1 of each 4 quarts that was retailed.

Table 1.--Low-fat milk sales in the plants surveyed, by geographic region, 1962

Region	Low-fat milk sales (million qt.)	Percent total	Percent of low-fat milk sold in region containing added solids-not-fat
New England	1.4	0.4	14.9
Middle Atlantic	18.1	5.4	91.4
South Atlantic	5.5	1.6	100.0
E. So. Central	10.3	3.1	96.4
W. So. Central	21.0	6.2	87.9
E. No. Central	145.1	42.9	76.3
W. No. Central	55.2	16.3	60.3
Mountain	34.6	10.2	88.3
Pacific	46.8	13.9	92.0
United States	338.0	100.0	79.3

Four of each 5 quarts of low-fat milk sold in the continental United States during 1962 contained added solids-not-fat. Except for the New England area, where less than a fifth of the total low-fat milk sales contained additional solids, the low-fat product with added solids accounted for a significantly larger proportion of the total low-fat sales than the nonfortified product. The New England Region's deviation from this pattern may be partially due to the fact it is illegal to increase the solids-not-fat content of skim milk in 2 of the 7 States included in this region.

Sales--Size of Operation, 1962

Large plants accounted for most of the total sales of low-fat milk in 1962 (table 2). When all reporting plants selling low-fat milk were classified on the basis of their annual fluid milk sales, slightly more than half--52 percent--reported total fluid milk sales of 5 million quarts or more. Low-fat sales by these companies averaged between 0.5 and 1.5 million quarts in 1962. The remainder of the firms reported total sales of less than 5 million quarts annually with low-fat sales averaging 200,000 quarts or less per firm.

Percent of Sales, 1962

Low-fat milk sales, as a percentage of total whole, low-fat, and skim milk sales, exceeded or were equal to skim milk sales (other than low-fat) in 7 of the 9 geographic regions. They were, however, substantially below whole milk sales in all regions (table 3).

On a regional basis, sales of the low-fat product ranged between 1.1 and 7.9

Table 2.--Sellers and nonsellers of low-fat milk classified by 1962 annual sales 1/

Total fluid milk sales (1,000 qt.)	Sellers					Nonsellers	
	Number reporting	Percent total	Total low-fat milk sales (mil. qt.) 2/	Percent total	Av. annual sales for reporting companies (million qt.)	Number reporting	Percent total
Under 400....	28	5.2	1.1	0.3	3/	135	13.0
400-999.....	49	9.1	6.9	2.0	0.1	221	21.4
1,000-4,999..	178	4/33.3	37.7	11.1	0.2	441	42.6
5,000-9,999..	119	22.2	54.9	16.2	0.5	114	11.0
Over 10,000..	162	30.2	237.9	4/70.4	1.5	124	12.0
	536	100.0	338.0	100.0	0.6	1/1,035	100.0

1/ Excludes reports from sellers not reporting total 1962 fluid milk sales but supplying other requested information.
2/ Detailed figures may not add to total because of independent rounding.
3/ Less than 0.1 million.
4/ Rounded upward by 0.1 percent for balancing purposes.

percent, skim between 0.6 and 6.5 percent, and whole milk varied between 90 and 96 percent of the total sales of the 3 products. 4/

Table 3.--Milk types as a percentage of the total whole, low-fat, and skim milk sales, 1962, 500 plants 1/

Region	Whole milk	Low-fat milk	Skim milk other than low-fat
	Percent		
New England	93.0	3.5	3.4
Middle Atlantic	95.6	1.1	3.1
South Atlantic	91.5	7.9	0.6
East South Central	93.4	5.1	1.4
West South Central	94.2	2.9	2.9
East North Central	90.3	6.3	3.4
West North Central	89.9	5.9	4.1
Mountain	94.6	3.5	1.9
Pacific	90.1	3.4	6.5
All plants	92.2	4.2	3.6

1/ Detailed figures for a region may not add to 100 because of independent rounding.

Low-fat milk sales in areas of the country where it has been available for the longest period of time--East and West North Central regions--accounted for about 6 percent of the total with skim (other than low-fat) representing about 3 to 4 percent. In only two regions--the Pacific and Middle Atlantic--were the sales of low-fat milk below those reported for skim milk. One possible explanation for this difference in the Pacific region is the fact that a low-fat product was not available in a number of the region's largest marketing areas until the spring of 1962. In the case of the Middle Atlantic area, most consumers apparently do not have the low-fat product readily available, since less than 2 percent of the sample firms in that area reported low-fat milk sales.

Low-fat milk, irrespective of a plant's size in terms of sales, amounted to between 3.9 and 6.3 percent of total whole, low-fat, and skim-milk sales (6, p. 14). However, for those plants whose total fluid sales were under 400,000 quarts, the low-fat product represented a larger percentage of the total than any other group (table 4).

In order to meet consumer demand as well as increase the taste of fluid skim-milk products, the industry has been adding solids-not-fat. Table 5 presents a regional breakdown of the quantity of low-fat and skim milk sold by the firms included in the sample that contained additional solids-not-fat.

Except for the New England region, low-fat and skim milk fortified with additional solids-not-fat accounted for most of the total sales in each product category. It is

4/ These percentages would be somewhat lower when viewed in terms of total fluid milk and cream sales. However, these relationships would not be significantly changed since data appearing in Federal Milk Order Market Statistics, (6, p. 14), indicated whole and skim milk sales amount to approximately 95-97 percent of the total fluid milk and cream sales.

Table 4.--Milk types as percentage of the total whole, low-fat, and skim milk sales, 1962, 500 plants 1/

Total annual fluid milk sales (1,000 qt.)	Whole milk	Low-fat	Skim milk (other than low-fat)
	Percent		
Under 400	91.4	6.3	2.4
400-999	92.2	4.9	2.9
1,000-4,999	89.8	5.8	4.4
5,000-9,999	93.4	3.9	2.7
Over 10,000	92.2	4.0	3.8
All plants	92.2	4.2	3.6

1/ Detailed figures may not add to 100 because of independent rounding.

Table 5.--Low-fat and skim milk containing added solids-not-fat, as percentage of the total low-fat and skim milk sold in 1962, 500 plants

Region	Low-fat milk	Skim milk
	Percent	
New England	14.9	16.3
Middle Atlantic	91.4	85.0
South Atlantic	100.0	100.0
East South Central	96.4	93.3
West South Central	87.9	77.2
East North Central	76.3	77.2
West North Central	60.3	97.2
Mountain	88.3	70.2
Pacific	92.0	52.9
All plants	79.4	69.5

illegal to increase the nonfat portion of skim milk products in some States in the New England area. This is probably the reason this area is an exception to the pattern found throughout the rest of the country.

Plants with total fluid milk sales of 10 million or more quarts in 1962 were fortifying a greater percentage of their low-fat product than in any size classification. On the other hand, plants selling less than 1 million quarts fortified a larger percentage of their skim milk than the low-fat product.

In contrast, plants whose fluid milk sales ranged between 1 and 10 million quarts were adding solids to both their low-fat and skim milk at the same rate (fig. 3).

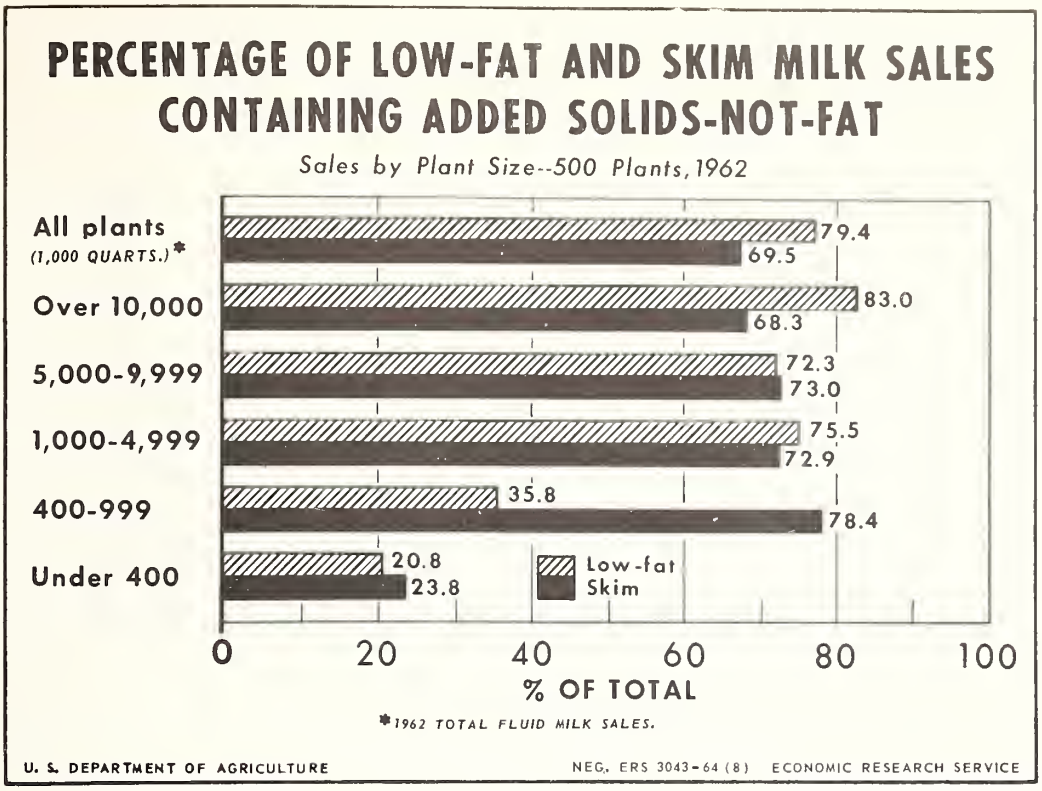

Figure 3

Market Introduction of Low-fat Milk

Sales of low-fat milk as defined for survey purposes were apparently limited to the East and West North Central areas of the country before 1949. One company in this area reportedly began selling it in 1940, while two others started in 1946 and 1947. Figure 4 shows the rate at which milk processing plants were introducing low-fat milk into their marketing areas between 1949 and 1962.

The number of plants introducing a low-fat product into their marketing areas rose slowly and steadily between 1949 and 1953. By the end of 1953, at least 1 plant in each of the 9 geographic regions was producing and selling a low-fat milk. Also, three-fourths of the 43 plants that reported marketing a low-fat product in 1953 were located in the Midwest.

Between 1953 and 1962, except for 1957 and 1959, the rate at which processing plants began to market low-fat products rose spectacularly with 1962 recording the greatest year-to-year increase. However, about two-fifths of that year's increase reflected a change in the California State Dairying regulations which allowed low-fat milk to be sold in that State for the first time.

Despite the increasing rate of plant entry into low-fat milk processing and marketing, the midwestern sections of the country continued to lead the rest of the country in terms of the number of plants processing low-fat milk (table 6).

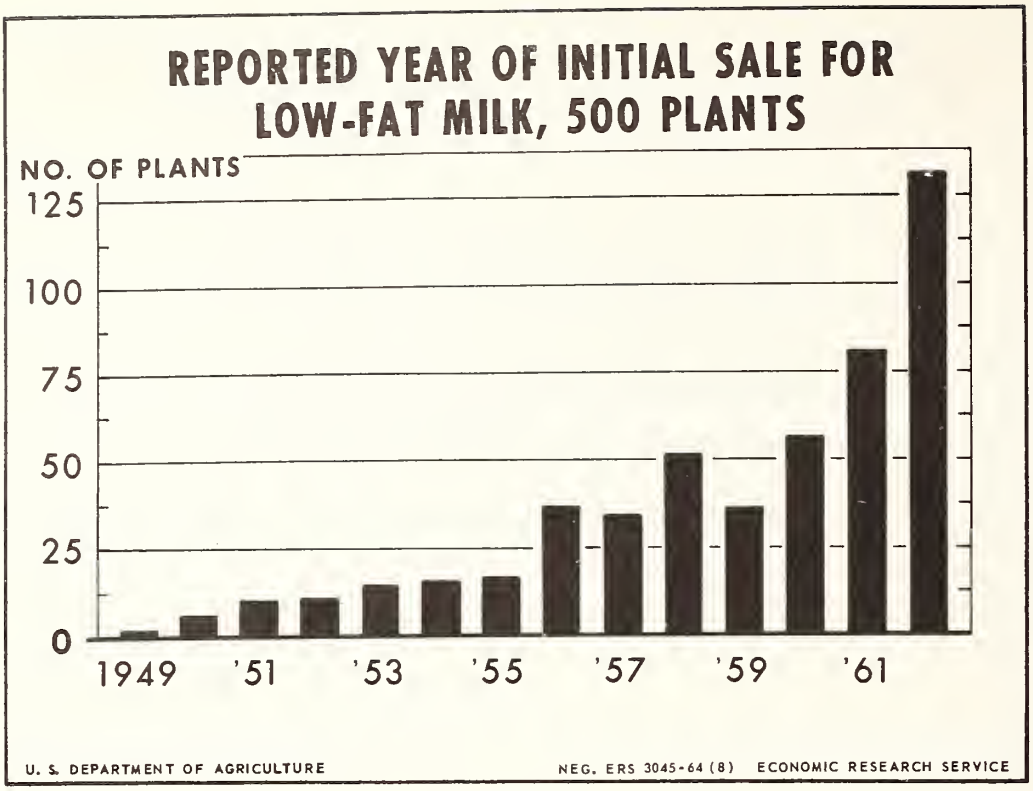

Figure 4

Table 6.--Percentage by geographic region of 500 plants selling low-fat milk, 1962

Region	Plants	Percent
New England	14	2.8
Middle Atlantic	48	9.6
South Atlantic	6	1.2
East South Central	23	4.6
West South Central	30	6.0
East North Central	140	28.0
West North Central	97	19.4
Mountain	55	11.0
Pacific	87	17.4
Total	500	100.0

Composition of Low-Fat Milk

Standards of composition or identity exist either on a Federal or State basis for most fluid milk products. However, virtually no widely used standards have been established for a low-fat product. In order to provide benchwork as well as comparative data for the milk industry and other interested groups, processors were asked about the composition of their low-fat product.

Low-fat milk sold at the time of the survey usually contained 11.7 to 12.1 percent total milk solids and in most instances was fortified with vitamins "A" and "D".

The total solids level of the low-fat product generally fell within the minimums of 11.0 to 12.3 percent required for whole milk but was considerably higher than those required for plain skim milk sold in the continental United States (3).

The reported minimum and maximum butterfat solids level for the low-fat product averaged about 2.0 percent while the solids-not-fat figure fell slightly below 10.0 percent (table 7).

Three-fourths (76 percent) of the reporting plants indicated they fortified their low-fat product with additional solids-not-fat, while 24 percent reportedly did not increase solids-not-fat. Of those plants that added solids-not-fat, 84 percent standardized with nonfat dry milk solids, 15 percent with condensed skim milk, and the remaining 1 percent used both condensed skim milk and nonfat dry milk solids.

Most plants added vitamins "A" and "D" to the low-fat product. Excluding those firms that did not answer the question, slightly more than half (55 percent) of 377 firms added 2,000 USP units of vitamin "A", while 16 percent stated this vitamin was not added to their product. The remaining respondents reported adding vitamin "A" in varying amounts, which ranged from less than 2,000 USP units up to 4,000 USP units. Fortification of the low-fat product with vitamin "D" was reported by 91 percent of 341 reporting plants; 6 percent of those reporting did not add vitamin "D", while the remaining plants added from less than 400 to more than 400 USP units of vitamin "D".

About 10 percent of the reporting plants fortified with other vitamins and minerals in addition to "A" and "D". In all these cases, varying amounts and combinations of the vitamin "B" group were most frequently used to provide additional fortification, while one or more of the "B" vitamins combined with iron and iodine ranked next in usage.

Container Size

More than 90 percent of the 338 million quarts of low-fat milk sold in 1962 by the plants included in the survey was packaged in either quart or half-gallon containers.

Quarts were used exclusively by 11 percent of the 542 reporting plants. This type of packaging represented about a third of the product's total sales. On the other hand, half of the plants used half-gallon packages exclusively for their low-fat product. Sales by these companies amounted to about 60 percent of the 338 million figure. The remaining companies--accounting for a little less than 10 percent of total low-fat sales--used more than 1 container size, ranging between one-half pint and 1 gallon. However, about 0.5 percent of the sales by this group were accounted for by plants using only gallon-size packages for their low-fat product.

Except for the New England region, where more quarts than half-gallons were reported sold, half-gallons were by far the most popular container used for the low-fat product.

Product Designation and Labeling

A total of 48 general or generic terms were reported in current use to identify a low-fat product in the various markets. In most instances a single term was mentioned by 1, 2, or 3 firms. However, in more than 8 of 10 instances, one of 11

Table 7.--Average butterfat and solids-not-fat content of low-fat milk, 1962

Region	Percent butterfat		Percent solids-not-fat	
	Minimum	Maximum	Minimum	Maximum
New England				
Mean	1.95	2.24	9.18	9.42
Range of one standard deviation	1.79-2.10	2.01-2.47	8.40-9.96	8.67-10.17
Middle Atlantic				
Mean	1.83	2.03	9.90	10.04
Range of one standard deviation	1.66-2.00	1.80-2.27	9.01-10.79	9.07-11.00
South Atlantic				
Mean	1.82	1.93	9.95	10.82
Range of one standard deviation	1.58-2.06	1.68-2.19	9.07-10.83	9.94-11.70
East South Central				
Mean	1.98	2.08	9.53	9.73
Range of one standard deviation	1.87-2.10	1.85-2.21	8.72-10.33	8.95-10.50
West South Central				
Mean	1.90	2.04	9.94	10.23
Range of one standard deviation	1.67-2.13	1.87-2.20	8.96-10.91	9.16-11.29
East North Central				
Mean	1.99	2.07	9.71	9.85
Range of one standard deviation	1.88-2.10	1.91-2.24	8.74-10.69	8.98-10.81
West North Central				
Mean	2.00	2.05	9.78	9.94
Range of one standard deviation	1.93-2.08	1.92-2.19	8.85-10.71	9.06-10.81
Mountain				
Mean	1.97	2.07	9.69	9.86
Range of one standard deviation	1.84-2.10	1.95-2.19	8.87-10.51	9.03-10.69
Pacific				
Mean	1.98	2.10	9.71	9.90
Range of one standard deviation	1.93-2.03	2.00-2.21	9.01-10.42	9.14-10.66
United States				
Mean	1.96	2.11	9.77	9.96
Range of one standard deviation	1.75-2.17	1.94-2.27	8.83-10.71	8.99-10.93

general terms was identified as being most often used. These were (1) low-fat milk, (2) 2% milk, (3) skimmed milk product, (4) 2% B.F. skimmed milk, (5) fortified skim, (6) 2% fortified skim, (7) low-fat skim, (8) 2% modified skim, (9) modified skim milk product, (10) 2% low-fat, and (11) 2%.

This seemingly large number of general or generic terms used to identify the low-fat product probably results from two factors. First, industry or trade custom, and second, State and local labeling requirements. It may be inferred that the seemingly large number of terms used alone or in combination with a brand name tends to confuse consumers as to the real identity of the product.

Over 200 individual names were reported used by individual firms to identify their low-fat product. In most instances a generic term such as "low-fat milk", "modified skim", or "fortified skim" was included as part of a brand name or label. Trade or brand names which were generally more suitable for copyright and advertising purposes were found to be most widely used. For example, about one-sixth of the reporting firms had brand names with which product promotion could be directed towards weight-conscious consumers; while more than a fourth of the reported brand names appeared to be selected to appeal to consumers on the basis of the product's price or additional nutritional benefits.

Sellers were asked whether or not specific limitations existed which restricted the use of their brand name in a market. Of the 542 selling firms, 482 stated they had no specific labeling problem. However, the balance of the firms indicated a problem existed. Of this relatively small group, 41 percent indicated the problem was a requirement that the label must include the term "skim" or "skimmed" milk, while another 20 percent indicated State Regulatory Agencies such as Milk Commissions and Departments of Agriculture objected to their label and did not identify the specific objection. The remaining firms in this group stated the problem amounted to waiting for a regulation revision, or an absolute ban against entry of the product into a portion of their market due to State or local regulations.

Channels of Distribution

Of all the low-fat milk sold by fluid milk processors in 1962, 96 percent moved through three outlets: Home delivery, retail stores, and platform operations. 5/ The balance was sold through vending machine operations, dairy stores, Federal and State institutions, and schools.

The proportion of low-fat milk sales moving through home-delivered and retail-store channels varied almost directly with the scale of operation. Stated another way, the amount of low-fat milk sold through home delivery routes fell from 73 to 30 percent as the size of the plant, in terms of total annual fluid milk sales, increased (table 8). Contrawise, the amount sold through retail stores rose from 25 to 53 percent. On the other hand, peddler platform sales tended to rise as the size of the plant increased.

The proportion of low-fat milk sales moving through the various types of outlets differs significantly on a regional basis. For example, in three regions--New England, South Atlantic, and Mountain--home deliveries were the most important outlet, accounting for between 57 and 83 percent of total low-fat sales. In the remaining 6 regions, however, about a third or less of the total moved in this channel.

5/ The term platform refers primarily to sales made at the plant to persons who operate and maintain their own retail delivery routes but do not operate fluid-milk processing facilities.

Table 8.--Distribution of sales of low-fat milk by firms of specified sizes, 435 plants, 1962

Annual sales (1,000 qt.)	Home delivery	Retail store	Vending machine	Platform	Dairy stores	Federal and State institutions	Schools	Other	Total
	Percent								
Under 400	72.7	24.9	---	1.4	1.0	---	---	---	100.0
400 - 9,999	49.1	44.4	---	0.4	4.7	0.6	0.8	---	100.0
1,000 - 4,999	45.9	39.0	0.7	5.0	6.7	1.6	1.0	0.1	100.0
5,000 - 9,999	48.0	40.4	1/	8.0	2.9	0.2	---	0.5	100.0
Over 10,000	30.1	53.2	1/	13.9	0.7	1.2	0.2	0.7	100.0
All plants	34.3	49.9	0.1	12.1	1.7	1.0	0.3	0.6	100.0

1/ Less than 0.1 percent.

Table 9.--Distribution of sales of low-fat milk in 9 geographic regions, 435 plants, 1962

Region	Home delivery	Retail store	Vending machine	Platform	Dairy stores	Federal and State institutions	Schools	Other	Total
	Percent								
New England	83.3	14.9	0.8	0.9	---	---	---	---	100.0
Middle Atlantic	37.6	57.7	0.1	1.9	1.2	0.1	---	1.4	100.0
South Atlantic	76.9	22.3	---	---	0.5	0.3	---	---	100.0
East South Central	29.3	45.2	---	21.1	3.2	1.0	---	0.2	100.0
West South Central	25.4	35.2	1.1	37.6	---	0.2	---	0.5	100.0
East North Central	28.0	54.3	0.1	13.8	1.6	1.0	0.3	0.9	100.0
West North Central	33.8	49.3	---	13.4	1.7	1.0	0.5	0.3	100.0
Mountain	57.4	36.0	---	0.8	3.8	1.5	0.5	---	100.0
Pacific	35.1	55.7	---	6.3	1.0	1.6	0.3	---	100.0
All plants	34.3	49.9	0.1	12.1	1.7	1.0	0.3	0.6	100.0

Platform sales were much more important in the central portion of the country than in any of the other regions. In this area, they ranged from 13 to 38 percent of the total low-fat milk sold (table 9).

Prices Paid--Low-Fat, Whole, and Skim Milk

Prices paid for low-fat milk, either with or without additional solids-not-fat, were generally lower than those for whole milk regardless of whether the product was delivered to the home or purchased at a retail store. On the other hand, they were somewhat above those charged for skim milk (table 10).

Increasing the solids-not-fat level of low-fat milk seems to result in the existence of a narrow price margin between whole and low-fat milk. For example, low-fat milk prices averaged 0.9 cents per quart less than those charged for whole milk on a home-delivered basis, while at the retail store they were 1.2 cents per quart lower. This may be due to processors feeling that since the nutritional qualities of this type of milk are equivalent to those of whole milk, this product should carry a price comparable to that charged for the whole product.

Contrawise, when the low-fat product did not contain added solids, prices paid were 2.3 cents per quart below those charged for home delivered whole milk and 3.5 cents per quart below whole milk prices at the retail store level. Although the price differentials were much greater in the latter instance, only about one-fifth of the total quantity of low-fat milk sold in 1962 did not contain additional solids-not-fat.

Prices paid for skim milk (other than low-fat as defined for the survey) were somewhat below those for the low-fat product. In the case of home delivery, the difference ranged between 2.3 and 2.9 cents per quart, depending on whether the low-fat product contained additional nonfat solids. At the retail store level, the difference ranged between 1.4 and 2.6 cents per quart, with the smaller difference existing between the products which did not contain additional N. F. S.

Table 11 shows the range of prices reportedly paid by consumers during December 1962 for the 3 types of milk products in the 9 regions. These prices are not applicable to a specific market within a region; they reflect the competitive conditions throughout the entire region. Thus, what may appear to be a low price for a specific market may be due to a price war or some other competitive situation in one part of a region during the time period of the survey. In addition, the effects of local milk price-control agencies also are reflected in these figures.

LOW-FAT MILK PROCESSORS--FIVE SELECTED MARKETS

Data obtained from the national mail survey could not be related to a specific market or markets. 6/ Therefore, in order to obtain a more detailed picture of the marketing of the low-fat product, 5 markets were selected to obtain additional data from all or almost all of the low-fat milk processing plants in each of these markets. Executives from 39 plants in these 5 markets were interviewed. Low-fat milk sales by these plants totaled 43.4 million quarts in 1962, or about 13 percent of the 338.0 million quarts reportedly sold by all sellers in the mail survey.

In addition to the information already obtained in the mail survey, these respondents were questioned specifically about the sales pattern of low-fat milk since its market

6/ See page 26 for information relating to household surveys in selected markets.

Table 10.--Prices reported in National Mail Survey, being charged for whole, low-fat, and skim milk during December 1962 1/

Milk type	Home delivered		Retail store	
	Cents per quart	Cents per ½ gallon	Cents per quart	Cents per ½ gallon
Whole 2/				
Mean	25.4	48.7	24.0	41.9
Median	25.1	48.5	23.7	46.2
Mode	26.0	51.0	25.0	49.0
Range of 1 standard deviation	22.9 - 27.9	44.0 - 53.5	21.5 - 26.4	36.3 - 47.5
Low-fat (Added N.F.S.)				
Mean	24.5	43.8	22.8	41.1
Median	24.4	42.9	22.6	40.4
Mode	25.0	43.0	23.0	45.0
Range of 1 standard deviation	22.8 - 27.3	39.6 - 48.0	20.3 - 25.3	36.1 - 46.1
Low-fat (No added N.F.S.)				
Mean	23.1	42.4	20.5	38.7
Median	21.6	41.8	20.7	39.2
Mode	24.0	43.0	22.0	39.0
Range of 1 standard deviation	21.7 - 24.6	38.0 - 46.9	17.9 - 23.1	33.8 - 43.7
Skim (Added N.F.S.)				
Mean	21.6	39.1	20.2	35.3
Median	21.8	38.6	19.5	34.9
Mode	21.0	39.0	20.0	37.0
Range of 1 standard deviation	18.5 - 24.7	34.0 - 44.1	17.3 - 23.0	29.7 - 41.0
Skim (No added N.F.S.)				
Mean	20.8	38.3	19.1	34.0
Median	20.2	38.2	18.8	33.3
Mode	22.0	43.0	21.0	36.0
Range of 1 standard deviation	18.1 - 23.5	33.7 - 42.8	16.2 - 22.1	26.9 - 41.2

1/ Based on prices charged for a single quart purchase. Data not adjusted for quantity discounts.

2/ Excludes vitamin-fortified milk.

Table 11.--Range of prices reported in National Mail Survey, by geographic region, for whole, low-fat, and skim milk, December 1962

Region and milk type	Home delivered		Retail store	
	Cents per quart	Cents per ½ gallon	Cents per quart	Cents per ½ gallon
New England				
Whole	25 - 31	48 - 57	23 - 28	43 - 55
Low-fat	22 - 29	32 - 51	22 - 25	40 - 45
Skim	1/	1/	19 - 30	1/
Middle Atlantic				
Whole	25 - 32	47 - 59	21 - 29	41 - 57
Low-fat	19 - 32	43 - 56	16 - 29	39 - 50
Skim	16 - 28	35 - 50	13 - 27	32 - 47
South Atlantic				
Whole	27 - 29	50 - 57	26 - 29	47 - 57
Low-fat	25 - 26	39 - 49	24 - 25	39 - 55
Skim	20 - 24	1/	21 - 28	1/
East South Central				
Whole	24 - 29	47 - 54	21 - 27	41 - 52
Low-fat	18 - 26	32 - 51	20 - 25	35 - 49
Skim	15 - 26	39 - 45	16 - 23	30 - 41
West South Central				
Whole	24 - 29	48 - 56	20 - 29	42 - 54
Low-fat	20 - 27	41 - 54	19 - 27	37 - 52
Skim	20 - 26	42 - 50	19 - 25	37 - 50
East North Central				
Whole	20 - 35	39 - 72	17 - 27	32 - 72
Low-fat	17 - 27	35 - 59	17 - 27	30 - 68
Skim	15 - 34	28 - 59	12 - 26	21 - 59
West North Central				
Whole	18 - 30	35 - 49	15 - 28	30 - 67
Low-fat	16 - 25	32 - 47	16 - 22	28 - 46
Skim	14 - 30	28 - 46	12 - 25	23 - 47
Mountain				
Whole	22 - 27	44 - 52	20 - 27	38 - 51
Low-fat	18 - 29	38 - 50	17 - 22	27 - 47
Skim	15 - 25	29 - 42	10 - 23	28 - 39
Pacific				
Whole	23 - 28	46 - 55	21 - 27	41 - 53
Low-fat	23 - 27	42 - 52	18 - 25	40 - 49
Skim	18 - 26	35 - 48	14 - 24	22 - 46

1/ Insufficient number reporting.

introduction, problems related to its manufacture, changes in personnel and equipment resulting from production and marketing of the low-fat product, discount policies, types of containers, promotional programs and media, and the proportion of the advertising budget allocated to low-fat milk.

Low-Fat Milk Sales

Table 12 shows the relationships between whole, low-fat, and skim milk sales in the selected markets for 1962.

Table 12.--Sales of whole, low-fat, and skim milk as a percentage of total (whole, low-fat, and skim milk) sales, 5 selected markets, 1962

Market	First year low-fat milk sold	Whole milk	Low-fat milk	Skim milk	Total whole, low-fat, and skim milk sales
		Percent			
Wilmington, Del.	1960	96.5	0.6	2.9	100.0
Milwaukee, Wis.	1951	85.7	8.0	6.3	100.0
New Orleans, La.	1957	94.3	1.9	3.8	100.0
Salt Lake City, Utah	1954	81.7	15.6	2.7	100.0
San Francisco, Calif.	1962	92.4	1.6	6.0	100.0

Source: Federal Milk Order Market Administrator Reports, U.S. Dept. Agr.; California Dairy Industry Statistics for 1962, Calif. Dept. Agr.

In 3 of the 5 cities, low-fat milk sales were a relatively small proportion of the total sales for the 3 products. Their small volume suggests that the impact on whole or total fluid milk sales is not very significant. In Milwaukee and Salt Lake City, however, low-fat milk accounts for a substantial portion of the total, and its impact on whole milk sales appears to be related directly to the length of time the product has been available in the market.

The relatively high proportion of low-fat milk sales to the total sales for the 3 items in Salt Lake City, as compared with the other 4 cities, may be due in part to price. In that area, 57 percent of all low-fat milk sold moved through home delivery routes at an average price 3 cents per quart lower than whole milk in December 1962 (table 9). In stores, the price was about 1 1/2 cents below that of whole milk. Executives interviewed indicated these price differentials were traditional in this market. In the New Orleans market, where the low-fat product accounted for about 2 percent of the sales, its average price was 1 to 2 cents per quart above that charged for whole milk both on home delivery routes and at retail stores.

Per capita sales of low-fat milk in 4 of the 5 markets increased at a fairly steady rate after the product's introduction (table 13). Time series data are not available for an adequate number of markets to reliably estimate the ultimate per capita sales level this product might attain. These data also indicate that year-to-year increases in low-fat milk sales only partially offset declines in whole milk sales. For example, in the Salt Lake City marketing area between 1960 and 1961, per capita sales of low-fat milk increased 1.2 percent while whole milk declined

Table 13.--Estimated per capita sales, 5 selected cities

City and year	Low-fat milk	Skim milk	Whole milk	Total low-fat, skim, whole milk
	Quarts			
Milwaukee, Wis.				
1957	1.6	6.1	138.1	145.8
1958	3.1	6.3	134.3	143.7
1959	4.4	7.0	132.9	144.3
1960	5.8	7.4	129.2	142.4
1961	8.4	8.1	131.0	147.5
1962 1/	11.1	8.6	118.6	138.3
Wilmington, Del.				
1960	0.1	3.8	128.9	132.8
1961	0.2	4.3	133.8	138.3
1962	0.6	4.5	125.5	130.6
New Orleans, La.				
1960 2/	0.2	1.2	34.0	35.4
1961	1.3	3.9	95.2	100.4
1962	2.1	3.8	96.1	102.0
Salt Lake City, Utah				
1960	14.4	3.4	107.3	125.1
1961	16.9	3.4	103.8	124.1
1962	19.4	3.4	100.6	123.4
San Francisco, Calif.				
1960	3/	9.2	153.5	162.7
1961	3/	9.7	149.3	159.0
1962	4/2.5	9.9	151.9	164.3

1/ Data not directly comparable to earlier periods due to change in Federal Milk Market Order area in 1962.
2/ Data for 4 months.
3/ Low-fat product not sold.
4/ Low-fat product sold for 9 months.

Source: Federal Milk Order Market Reports; Calif. Dept. Agr. reports.

3.3 percent. If per capita sales of low-fat milk were added to those for whole milk in this period--assuming a one-to-one substitution ratio existed between the two products--per capita sales of whole milk would have been down by 0.8 percent. This situation also appears to be true in the Milwaukee and Wilmington marketing areas for those periods in which per capita sales declines were recorded for whole milk.

Household studies in Milwaukee and New Orleans indicated approximately 3 percent of the low-fat milk users would not purchase any fluid milk if this product were not available (table 37, page 42). In addition, lesser quantities of whole and skim milk, in comparison with the amount of low-fat milk presently used, would be purchased by about 6 percent of the low-fat milk users in Milwaukee and New Orleans. Thus it can be said that low-fat milk sales may be a positive factor on a marketwide basis during periods of declining whole milk sales because they will retain as consumers some low-fat users who would not otherwise purchase fluid milk. The data also indicate that sales of a low-fat product do not necessarily increase consumers' purchases of fluid milk to the point where a marketwide increase in total fluid milk sales can be expected.

Sales Pattern

While low-fat milk sales seemingly cannot completely offset the trend toward lower per capita consumption on a marketwide basis, a somewhat different picture appears when low-fat sales are viewed on an individual plant basis. Of the dairy plant executives interviewed in the 5 markets, 28 percent stated that low-fat milk sales had no discernable impact on their plants' whole, skim, or total packaged milk sales (table 14). The remainder reported varying rates of decline in packaged whole and skim milk sales volume. However, slightly more than half of the latter group (38 percent of the total number of respondents) said that these declines were accompanied by increases in total packaged milk sales. Therefore, while low-fat milk sales on a marketwide basis may not increase marketwide fluid milk sales, they can be a plus factor for an individual plant to the extent that they may attract new fluid milk consumers to an individual plant's product, and also increase its share of the total market when there are a limited number of plants in a given market selling low-fat milk.

When asked about their sales pattern for the low-fat product since its market introduction, three-fourths of the plants contacted in the 5 markets reported that their low-fat sales generally increased; while the remainder stated that their sales volume was small and had not varied significantly over time. Excluding those plants that were unable to provide an estimate, month-to-month increases in sales of low-fat milk were 1.5 percent or more in 45 percent of the cases (table 15). However, 37 percent of the plants reporting an increase in low-fat milk sales had an average monthly increase of over 2.5 percent.

Approximately 9 of 10 respondents expected their low-fat milk sales to rise above their current level during 1963, and none expected them to decline. These forecasts were based primarily on expectations that consumers' concern over dietary problems would not diminish. The fact that the low-fat product was usually priced below prevailing whole milk prices appeared to rank next in importance for the feeling that low-fat milk sales would increase.

Slightly more than half of the dairy executives mentioned the existence of a specific problem that would have to be overcome in order to increase the sales of low-fat milk. The remainder stated they knew of no such problems. Consumers' lack of knowledge about the low-fat product was most frequently identified as the major problem, while insufficient publicity ranked next in importance (table 16).

Table 14.--Effect of low-fat milk sales on sales of other fluid milks, 5 selected cities

Effect	Number of sales	Percent total
Lowered packaged whole milk sales	6	15.4
Lowered packaged skim milk sales	3	7.7
Lowered both whole and skim milk sales but increased total fluid packaged sales	9	23.0
Lowered packaged skim milk sales but raised packaged whole milk and total packaged milk sales	2	5.1
No discernable impact on packaged whole milk, skim milk, or total packaged milk sales	11	28.2
Lowered packaged whole milk sales, no impact on skim sales, but increased overall packaged sales	4	10.3
Other	4	10.3
Total	39	100.0

Table 15.--Month-to-month change in low-fat milk sales, 5 selected cities

Percent month-to-month change	Number of times mentioned	Percent total
Under 1.0 percent	9	33
1.0 - 1.4 percent	6	22
1.5 - 2.4 percent	2	8
2.5 and over	10	37
Total	27	100

Table 16.--Major problems to overcome in order to increase low-fat milk sales, 5 selected cities

Problem	Number reporting	Percent total
Labeling	1	5.0
Maintenance of flavor	2	10.0
Development of standard of identity	2	10.0
Adjustment of producer prices in line with economics of production	2	10.0
Consumer's knowledge about product	7	35.0
Insufficient publicity	5	25.0
Not interested in increasing sales	1	5.0
Total	20	100.0

Apparently 60 percent of the executives interviewed consider that overcoming these problems is a matter of advertising expenditures. This is an approach which can be resolved by individual company action.

Packaging Types

A recently released study of 29 Federal Milk Order Markets shows that more than two-thirds of the whole milk and skim milk as well as total fluid milk sold in these markets was packaged in paper (5, p. 3).

In the 5 selected cities, 38 percent of the plants used paper cartons exclusively to package their low-fat product. A third used both paper and glass while a fourth used only glass. The remainder used combinations of paper, glass, and lined fiber containers (table 17).

Table 17.--Packaging of whole, low-fat, and skim milk by container type, 5 selected cities

Type of package	Whole milk		Low-fat milk		Skim milk	
	Plants	Percent	Plants	Percent	Plants	Percent
Glass only	7	17.9	10	25.6	10	25.6
Paper only	7	17.9	15	38.5	14	35.9
Glass and paper	14	36.0	13	33.3	14	35.9
Glass, paper, lined fiber carton, and metal can	2	5.1	0	---	0	---
Glass, paper, lined fiber carton	4	10.3	1	2.6	0	---
Glass, paper, and metal can	5	12.8	0	---	1	2.6
Total	39	100.0	39	100.0	39	100.0

At the time of the survey, about two-thirds of all the low-fat milk in the 5 markets was sold in paper cartons and the remainder was packed in glass.

However, glass containers were more popular than paper in Wilmington and Salt Lake City. In the New Orleans, Milwaukee, and San Francisco areas, paper containers were used for 67 to 96 percent of the low-fat milk.

Processors' costs for packaging milk in paper cartons are higher than for glass when plants are packaging fluid milk in both types of containers. Costs vary considerably with the size of firm and degree of packaging specialization (10, p. 9). The cost differences help to explain the wide variation in prices reportedly charged for the low-fat product in the national mail survey.

Sales Promotion

To sell low-fat milk, none of the respondents used a special discount as a sales incentive, other than the discounts regularly allowed for their line of products. Additional special wholesale discounts were not used by any of the plants when the low-fat product was first introduced in their markets. On the other hand, slightly more than a fourth (28 percent) of the respondents stated they did use special advertising programs to sell their low-fat product. Table 18 presents a summary of the advertising media used in these programs and the number of times each was mentioned by the respondents.

Table 18.--Advertising media used in promotion of low-fat milk--11 plants, 5 selected cities

Media	Number of times mentioned 1/	Percent of total number who reported using special promotional programs 1/
Radio	7	64
Television	3	27
Newspapers	5	45
Point of sale	9	82
Home delivery materials	7	64
In-store sampling	4	36
Dealer ads	3	27
Direct mail	1	9
Other 2/	3	27

1/ Adds to more than total plants reporting because more than 1 type of media mentioned by a single reporter.

2/ Includes billboard and bus placard advertising.

About $1.2 million was budgeted for advertising in 1962 by 22 of the firms contacted in the 5 cities. Since advertising expenses in this industry are generally allocated on an annual basis and devoted to promoting an entire line of products, a number of respondents could not provide an estimate of advertising expenditures by type of product.

Advertising expenditures by those plants that could supply this data totaled approximately $700,000 during 1962. About 85 percent of this amount was devoted exclusively to whole milk advertising, while 11 percent was specifically allocated for promotion of the low-fat product. The balance was spent on seasonal advertising promotions or other products.

For these plants, the percentage that low-fat milk sales were of the total whole, low-fat, and skim milk sales exceeded the average figure for the entire market in 6 of 10 cases.

Problems and Additional Costs Related to Processing Low-Fat Milk

In the selected markets, 51 percent of the plants used skim milk powder to raise the solids-not-fat level of their low-fat product. This proportion is similar to that found in the national mail survey. A total of 26 percent used condensed skim milk, while 15 percent stated they did not add solids-not-fat. The remaining 8 percent used both powder and condensed skim milk for this purpose.

Nine of every ten plants contacted in the 5 markets reported no special or unusual production problems in connection with the manufacture of low-fat milk. The remaining 10 percent most frequently mentioned varying quality of the skim milk powder used to increase the solids-not-fat level as the most serious problem. In one instance, the use of a clarifier in the processing of milk required an extra operational step, but this was regarded as more of an inconvenience than a problem.

The purchase of additional or new equipment or the necessity of hiring more employees is not a barrier to increased production or to the marketing of low-fat milk. None of the plants required additional processing equipment when they started to sell low-fat milk. Only 1 instance was reported where services of an additional employee were required. Thus, production of a low-fat product other than regular skim milk did not appear to increase investment or operating costs.

NONSELLERS APPRAISAL OF LOW-FAT MILK

Although this study was directed primarily towards obtaining information from fluid milk processors marketing a low-fat milk as defined for survey purposes, information obtained from those processors who did not market it at the time of the survey provides an insight into the potential for increased sales of the low-fat product.

Replies were received from 1,096 companies in the national mail survey who did not process or market a low-fat milk product other than the skim or skimmed milk regularly sold in their market (table 19).

Table 19.--Classification of nonsellers of low-fat milk by 1962 annual sales volume

Reported annual sales (thousand qt.)	Number reporting	Percent total
Under 400	135	12.3
400 - 999	221	20.2
1,000 - 4,999	441	40.2
5,000 - 9,999	114	10.4
Over 10,000	124	11.3
Unknown	61	5.6
Total	1,096	100.0

Twenty percent of these 1,096 companies indicated there were legal barriers of one type or another preventing the sale of a low-fat product, while almost two-thirds (64 percent) stated the product could be sold in their market. The remaining companies either failed to answer the question or stated they did not know whether any barriers existed.

Most of the 221 companies, 75 percent, who stated legal barriers prevented the sale of the product, reported that its sale was either specifically prohibited by name in the law, or its sale was barred because there was no section in the statutes under which the product could be identified and legally sold in their market. Most responses of this nature were from plants located in the Middle Atlantic and South Atlantic regions and in Michigan. Legislative action in Michigan has since legalized the sale of low-fat milk.

Almost a sixth of the 221 plants indicated State or local labeling requirements were the major barrier to the sale of the low-fat product in their markets. Most frequently mentioned was a requirement that the label had to contain the words "skim" or "skimmed" milk. Although the product was usually sold in other markets in the same region, some processors apparently considered product labeling a major difficulty. Approximately a third of this type of response came from plants with marketing areas in the Middle and South Atlantic and East South Central regions. While this labeling requirement may be a problem for an individual processor in a specific market, the development of a standard of identity for the low-fat product by the industry and regulatory agencies would lessen problems of this nature.

The remaining 22 companies indicated legal barriers were a problem but failed to state the exact nature of the barrier.

All 1,096 companies not selling low-fat milk were asked if they planned to add it to their product line, provided its sale was currently allowed or if it were to be legalized in their marketing areas. About a fourth of this group either failed to answer the question or indicated they had not made a decision. About one-third of the remaining companies indicated they were currently planning to introduce a low-fat product, and about two-thirds reported they did not plan to sell the product. Table 20 presents a comparison by annual sales categories of the companies planning or not planning to introduce a low-fat product to the market.

Table 20.--Nonsellers' intentions of selling or not selling low-fat milk

1962 total milk sales (1,000 qt.)	Number reporting	Percent total	Plan to sell		Do not plan to sell	
			Number	Percent total	Number	Percent total
Under 400	104	12.6	31	10.5	73	13.7
400 - 999	186	22.5	60	20.3	126	23.7
1,000 - 4,999	342	1/41.5	127	43.1	215	1/40.6
5,000 - 9,999	97	11.7	38	12.9	59	11.1
Over 10,000	97	11.7	39	13.2	58	10.9
Total	826	100.0	295	100.0	531	100.0

1/ Rounded upward by 0.1 percent for balancing purposes.

About two-thirds of the companies which indicated they were planning to market a low-fat milk stated their reasons for this action. Of this group, more than half indicated consumer demand for a product with a lower fat content was responsible for their decision, while a little more than a third indicated they were introducing the product to meet competitive market conditions. Broadening of the company's product line was given as the reason in 5 percent of the cases.

Of the 531 companies who did not plan to sell a low-fat milk, only 30 percent furnished reasons for this decision. In this group, three-fifths stated their decision was based upon the lack of apparent demand; and size of product line or production facilities was given as the reason in an additional 12 percent of the cases. The remaining 29 percent decided not to retail the product because they felt it would reduce sales of whole or skim milk and not increase total sales.

Thirty-four, or about 3 percent of the companies in the nonselling group, stated they had previously sold a low-fat product but had discontinued its sales. Lack of

product demand, low sales volume, and low profit level in relation to sales volume were the reasons given.

THE HOUSEHOLD CONSUMER SURVEYS 7/

Background and Procedure

Milwaukee, Wis., and New Orleans, La., were selected for the survey of household consumption of low-fat and other milk products. Major factors in their selection were availability of historical data for low-fat milk, which could be used to analyze sales trends, and the opportunity to study areas having different milk consumption patterns, labeling requirements, and pricing regulations. In Milwaukee, where low-fat milk had been introduced in 1951, sales of the product just prior to the survey amounted to about 7.5 percent of total fluid milk sales. This figure was about 2.5 percent of the total in New Orleans, where low-fat milk had been available only since 1957. 8/ Milwaukee packaging emphasizes the percent butterfat content of low-fat milk--the figure "2%" is printed in large-size type. In contrast, New Orleans packaging does not specifically identify the butterfat content, which varies slightly according to the distributor. Retail prices in New Orleans are fixed by a State Milk Control Commission, whereas in Milwaukee, they are not. 9/

Data were collected during June and July 1963 by personal (and some telephone) interviews with probability samples of 483 respondents in Milwaukee and 497 in New Orleans. An eligible respondent was defined as the person responsible for buying food in the household. Most questions pertained to family rather than individual milk use.

The sample areas comprised all urban places included in the Polk directories for Milwaukee (Milwaukee, West Milwaukee, Fox Point, Shorewood, and Whitefish Bay) and New Orleans (Orleans Parish). A single-stage, compact-cluster sample design was used.

The sample was divided into two parts. All households contacted were eligible for interview in the first, or basic, part of the sample; and families who had used low-fat milk within the 6 months prior to interview were designated "users". To provide large enough numbers of users for reliable statistical analysis, only households using the product were eligible for interview in the second, or supplementary, part of the sample.

All users in the total sample constituted 15 percent of eligible households in Milwaukee and 6 percent in New Orleans. Calculation of sampling error indicated that had the entire city populations been surveyed, the true percentage for Milwaukee users of low-fat milk would probably fall within the range 13.9 - 16.1 percent and for New Orleans, within the range 5.5 - 6.5 percent.

Schedules were obtained from 222 users and 261 nonusers in Milwaukee and from 236 users and 261 nonusers in New Orleans. Interview completion rates were 76 percent for Milwaukee and 89 percent for New Orleans.

7/ Miss Burnside was responsible for preparing the Household Consumer section of this report.

8/ Figures for these two markets shown in table 11 on p. 17 are for low-fat milk as a percentage of the total for whole, low-fat, and skim milk only.

9/ See p. 15 ff. for data obtained from processors in these two areas.

Those Who Used or Knew About the Product

Families with relatively higher incomes and better-educated household heads were more likely to have used low-fat milk. Size of family and age composition, however, had little effect in differentiating users and nonusers (table 21).

Table 21.--Background characteristics of families who had or had not used low-fat milk during the 6 months prior to interview

Family background characteristics	Milwaukee			New Orleans		
	Total families	Low-fat milk		Total families	Low-fat milk	
		Users	Nonusers		Users	Nonusers
	Number	Percent	Percent	Number	Percent	Percent
Number of members						
1 or 2	194	45	55	187	51	49
3 or 4	166	49	51	171	49	51
5 or more	117	44	56	119	47	53
Age composition						
All 18 and over	214	44	56	225	49	51
Children 6-17	128	48	52	138	54	46
Children up to 5 and 6-17, or up to 5 only	135	49	51	114	46	54
Education of household head						
None or grammar school	101	33	67	123	35	65
High school	248	50	50	201	48	52
College	116	53	47	137	64	36
Income						
Up to $3,999	101	40	60	187	38	62
$4,000 to $7,999	243	49	51	176	50	50
$8,000 and over	89	54	46	82	65	35

Awareness of low-fat milk among those who did not use it was fairly high in Milwaukee (61 percent), low in New Orleans (29 percent). Unaware nonusers were asked, "What do you think 2 percent-low-fat milk is?" In spite of the fact that the wording of this question suggested an answer, over 3 in 10 of these New Orleans nonusers and over 5 in 10 in Milwaukee replied, "I don't know." Those who expressed an opinion tended most frequently to refer to the low(er) fat content of the milk or the weight-control aspect of its use (table 22). 11/

10/ For this section of the analysis, data from both the basic and supplementary parts of the sample were used.

11/ See pp. 11 and 24 for discussion of factors affecting nonuser awareness of low-fat milk.

Table 22.--"Have you ever heard of 2 percent-low-fat milk?" If reply is No: "What do you think 2 percent-low-fat milk is?" (Asked of respondents whose families had not used the product.)

Replies	Milwaukee	New Orleans
	Percent 1/	
Yes, aware of low-fat milk	61	29
No, unaware of low-fat milk	39	71
Opinion of what it is		
Milk with less fat than whole milk, or more fat than skim milk	9	9
Skim milk	3	9
Milk with all the fat removed	3	10
Milk that is good for losing weight	1	13
Milk low in nutrients	--	3
"It would be fattening"	--	2
Powdered milk	--	1
Miscellaneous	1	3
Don't know	22	23
Not ascertained	1	2
Total	100	100
Number of respondents	231	235

1/ Percentages add to more than their subtotals because some respondents gave more than 1 answer.

Initital Use

Low-fat milk was first introduced in the New Orleans market in 1957, but it was not widely available until 1961. Almost half (47 percent) of the using families in that city had first tried the product during the year preceding the survey. In line with earlier introduction of low-fat milk in Milwaukee (1951), only 37 percent of users there reported initial use during the past year, and proportions who had first used the milk during each of the preceding 2 to 5 years were greater than for New Orleans users (table 23).

Personal contacts with relatives and friends or medical personnel were most often mentioned as sources of earliest information about low-fat milk (by over 4 in 10 in both cities). In Milwaukee, the seller was next in order of importance, followed by the mass media; but in New Orleans, these two sources of initial information were reported by equal numbers of respondents (table 24).

Users were asked, "What was said about low-fat milk?" For each source of information, there were more comments concerning health-related attributes of the product than any other kind. Over 7 in 10 respondents in both cities who had first

Table 23.--"When did you first try 2 percent-low-fat milk?" (Asked of respondents who reported family use during the 6 months prior to interview.)

Time of first use	Milwaukee	New Orleans
	Percent	
Months ago		
1-12	37	47
13-24	22	15
25-36	14	12
37-48	8	3
49-60	12	6
When it first came out	3	6
Not ascertained	4	11
Total	100	100
Number of respondents	222	236

Table 24.--"Where did you first learn about 2 percent-low-fat milk?" (Asked of respondents who reported family use during the 6 months prior to interview.)

Sources of information	Milwaukee	New Orleans
	Percent 1/	
Personal contact	45	41
Relative, friend	29	28
Doctor, nurse, hospital personnel	17	13
Seller	36	27
Grocery store	29	18
Milkman, dairy	8	9
Mass media	17	27
Newspaper	9	9
TV, radio	5	11
Magazine	1	2
Kind of ad not ascertained	3	7
Miscellaneous	2	2
Don't remember	5	6
Not ascertained	2/	2
Number of respondents	222	236

1/ Percentages may add to more than 100 because some respondents gave more than 1 answer.
2/ Less than 1 percent.

heard of the milk through personal contact or the mass media mentioned such factors as weight control or adequacy of nutrients. Remarks by the seller concerning healthful attributes were reported by 4 in 10 Milwaukee users and almost 6 in 10 in New Orleans. Taste was also a factor of importance, particularly with those who were personally contacted (Milwaukee, 13 percent; New Orleans 21 percent). Respondents were less likely to remember what was said if the source was the seller or mass media than if it was a personal contact (table 25).

Table 25.--"What was said about 2 percent-low-fat milk?" (Asked of respondents who reported family use during the 6 months prior to interview.)

Comments	Source of initial information about low-fat milk 1/					
	Milwaukee			New Orleans		
	Personal contact	Seller	Mass media	Personal contact	Seller	Mass media
	Percent 2/					
Health	73	42	--	74	57	79
Less fattening	67	36		53	49	71
Same nutrients as whole	9	9		4	6	11
High in protein; rich in nutrients	8	10		21	16	37
Better for you, for children; healthier	7	4		16	2	3
Like the taste	13	5	--	21	14	11
Good; they liked it	5	--	--	4	--	--
Richer than skim	3	3	--	4	2	2
Less expensive	3	3	--	2	--	--
Miscellaneous	1	1	--	4	2	3
Nothing	2	30	--	2	19	--
Don't remember	5	21	--	1	8	14
Not ascertained	5	1	--	4	8	--
Number of respondents	99	80	3/37	96	63	63

1/ Source not ascertained or miscellaneous for 16 respondents in Milwaukee and 23 in New Orleans.

2/ Percentages may add to more than their subtotals and these add to more than 100 because some respondents gave more than one answer.

3/ Number too small for detailed analysis.

Before users were asked where they first learned about low-fat milk, they were asked why they tried it in the first place, and replies to this question were analyzed by sources of information. Again, references to health factors, especially weight control, were predominant regardless of source. About 2 in 10 respondents had tried it because of recommendation by a relative or friend. Both the seller and the mass media in New Orleans had apparently emphasized the novelty of the product, for almost a fourth of respondents in that city who mentioned these sources had tried low-fat milk "for variety, a change." Availability of the product was also an initiating factor, because almost 10 percent of those specifying the seller as source of information had tried it because they "saw it in the grocery store" (table 26).

Table 26.--"Why did you try 2 percent-low-fat milk in the first place?" (Asked of respondents who reported family use during the 6 months prior to interview.)

Reasons	Source of initial information about low-fat milk 1/					
	Milwaukee			New Orleans		
	Personal contact	Seller	Mass media	Personal contact	Seller	Mass media
	Percent 2/					
Health	63	55	--	64	60	70
On a diet; doctor recommended	36	21		23	16	14
Less fattening	27	37		37	43	54
Better for you, healthier	2	--		3	2	3
High in protein	--	--		4	3	3
Recommended by relative, friend	19	1	--	23	--	--
For variety, change	6	5	--	5	21	24
Less expensive	4	4	--	2	--	--
Purchased by accident	2	7	--	2	--	--
Thought it would taste better than milk using	2	4	--	1	--	--
Only milk available	1	7	--	--	2	--
Saw it in the grocery store	--	9	--	--	8	2
Recommended by dairy, milkman	--	3	--	--	3	2
Miscellaneous	4	11	--	1	2	--
Not ascertained	--	1	--	1	5	2
Number of respondents	99	80	3/ 37	96	63	63

1/ Source not ascertained or miscellaneous for 16 respondents in Milwaukee and 23 in New Orleans.

2/ Percentages may add to more than their subtotals and these add to more than 100 because some respondents gave more than one reason.

3/ Number too small for detailed analysis.

Price and Availability 12/

There was a 10-cent differential between cities in the price per quart reportedly paid by almost half of the users. In Milwaukee, 44 percent quoted 16-18 cents; in New Orleans, 46 percent quoted 26-28 cents. Apparently, price was not an important consideration for many users, since they said they did not know what they paid for low-fat milk (Milwaukee, 25 percent; New Orleans, 30 percent).

Users were then asked, "Considering the price of regular whole milk, do you think this price is about right, or do you think it is too high or too low?" Majorities reported satisfaction with prices paid, although over 3 in 10 New Orleans users and about 2 in 10 Milwaukee users paying within the most frequently quoted price ranges for the cities thought they paid too much for the product (table 27).

Low-fat milk users and nonusers who had heard of the product were asked about its availability through different types of outlets. There was general awareness that the milk was sold at grocery stores, but almost half (48 percent) of New Orleans

12/ See pp. 15 and 16 for information concerning the pricing of low-fat milk.

Table 27.--"Incidentally, about how much do you pay for a quart of 2 percent-low-fat milk? Considering the price of regular whole milk, do you think this price is about right, or do you think it is too high or too low?" (Asked of respondents who reported family use during the 6 months prior to interview.)

Price per quart and evaluation	Milwaukee	New Orleans
	Percent	
16-18 cents	44	--
About right	33	--
Too high	8	--
Opinion not ascertained	3	--
19-25 cents	29	8
About right	25	6
Too high	4	2
Opinion not ascertained	1/	--
26-28 cents	1/	46
About right	1/	30
Too high	--	15
Opinion not ascertained	--	1
29-34 cents	1/	14
About right	1/	9
Too high	--	5
Don't know	25	30
Price not ascertained	2	2
Total	100	100
Number of respondents	222	236

1/ Less than 1 percent.

nonusers were uncertain. Their uncertainty was, of course, affected by the lack of specification of butterfat content in New Orleans labeling. Other types of outlets for the product were not generally known. Only 41 percent of New Orleans users and just over half (52 percent) of users in Milwaukee knew it was home delivered; and majorities of all groups did not know whether low-fat milk could be obtained in specialty stores and restaurants (table 28).

"Is 2 percent-low-fat milk sold at the place where you regularly buy your other milk?" The same response pattern was obtained for this question as for the previous one. Most users and Milwaukee nonusers were generally aware of availability at their regular place of milk purchases; 44 percent of New Orleans nonusers were uncertain. Over half of those respondents who could not buy low-fat milk where they shopped indicated that they would not buy it, or (users) buy more of it, even if it were available (table 29).

Health and Calories

The use of low-fat milk was found to be strongly associated with concern for

Table 28.--"Do you know whether or not 2 percent-low-fat milk is sold: In grocery stores, by dairy route delivery, in specialty stores, in restaurants?" (Asked of all respondents aware of low-fat milk.)

Kind of outlet and low-fat milk use status	Replies									
	Milwaukee					New Orleans				
	Respondents	Yes	No	Don't know	Not ascertained	Respondents	Yes	No	Don't know	Not ascertained
	No.	Pct.	Pct.	Pct.	Pct.	No.	Pct.	Pct.	Pct.	Pct.
Grocery stores:										
Users	222	95	1	4	--	236	88	2	9	1
Nonusers	165	76	1/	22	2	75	43	4	48	5
Dairy route delivery:										
Users	222	52	1	47	--	236	41	5	52	2
Nonusers	165	36	3	59	2	75	12	2	79	7
Specialty stores:										
Users	222	43	1	55	1	236	12	9	77	2
Nonusers	165	31	1	66	2	75	8	1	83	8
Restaurants:										
Users	222	12	11	77	--	236	5	8	85	2
Nonusers	165	10	7	81	2	75	5	3	85	7

1/ Less than 1 percent.

Table 29.--"Is 2 percent-low-fat milk sold at the place where you regularly buy your other milk?" If reply is No: "Would you buy it, or buy more of it, if it were sold in the place where you regularly buy your other milk?" (Asked of all respondents aware of low-fat milk.)

Replies	Milwaukee		New Orleans	
	Low-fat milk		Low-fat milk	
	Users	Nonusers	Users	Nonusers
	Percent			
Yes, low-fat milk is sold	95	75	84	27
No, low-fat milk is not sold	3	7	9	21
If it were sold				
Would not buy or buy more	2	4	5	11
Would buy or buy more	1	1	2	6
Expectation not ascertained	1/	2	2	4
Don't know	1	15	2	44
Not ascertained	1	3	5	8
Total	100	100	100	100
Number of respondents	222	165	236	175

1/ Less than 1 percent.

health and diet. About 8 in 10 respondents mentioned health factors as reasons for using low-fat milk, and 6 in 10 users in both cities said, "It's less fattening" (table 30).

There were dieters or weight watchers in 84 percent of all families using low-fat milk, compared with dieting or weight-conscious members in only about half of nonusing families. Weight watchers "not to gain" were the most numerous (table 31).

Among those on low-fat or low-calorie diets, user family members predominated (table 32).

Women were much more concerned with weight and diet than men, and this difference was more pronounced in New Orleans than in Milwaukee. There was some tendency for weight-conscious men to be over 45 rather than younger. There were also more dieting women in the New Orleans older group; but in both cities, women watching weight "not to gain" were more likely to be under 45 (table 33).

Respondents whose families used low-fat milk were more knowledgeable than nonusers regarding the relative caloric counts of whole and other milks. Over 8 in 10 knew that whole milk has more calories than low-fat, whereas among nonusers, 4 in 10 in Milwaukee and almost 3 in 10 in New Orleans said they did not know whether there is any difference. Higher proportions of users than nonusers also stated, correctly, that whole milk has more calories than either skim or dry (table 34).

Table 30.--"Why do you use 2 percent-low-fat milk?" (Asked of respondents who reported family use during the 6 months prior to interview.)

Reasons	Milwaukee	New Orleans
	Percent 1/	Percent 1/
Health	78	82
Less fattening	64	59
On a diet; doctor recommended	15	19
High in protein, vitamins	3	6
Nutritious, healthy, good for you	3	4
Like the taste	13	9
Substitute for other milk	5	1
For variety, change	4	4
Less expensive	3	2/
Prefer it to whole or skim	2	2/
Richer than skim	2	2/
Purchased by accident	2	2/
Just like it	1	9
Miscellaneous	4	3
Not ascertained	3	3
Number of respondents	222	236

1/ Percentages may add to more than their subtotals and these add to more than 100 because some respondents gave more than one reason.
2/ Less than 1 percent.

Table 31.--"Are you, or is any member of your family, on any sort of diet at the present time? ... While many people are not on a strict diet for either gaining or losing weight, does any member of your family watch his weight so as not to gain or as so not to lose weight?" (Ask of all respondents.)

Replies	Milwaukee		New Orleans	
	Users	Nonusers	Users	Nonusers
	Percent 1/			
Family has	84	53	84	49
Weight watchers "not to gain"	66	41	68	30
Dieters	30	15	27	23
Weight watchers "not to lose"	5	5	2	4
Family has none	16	47	16	51
Total	100	100	100	100
Number of respondents	222	261	236	261

1/ Percentages add to more than subtotals because in some families more than 1 member was dieting or weight watching.

Table 32.--"What kind of diet is he (or she) on?" (Asked of respondents who reported family members on a diet.)

Kind of diet	Milwaukee		New Orleans	
	Low-fat milk		Low-fat milk	
	User family member	Nonuser family member	User family member	Nonuser family member
	Percent			
Low fat, cholesterol, fat-free	27	--	23	13
Low calorie, reducing	17	--	32	12
Low salt	11	--	8	19
Bland	9	--	1	4
Low sugar, diabetes, sugar-free, low carbohydrate	8	--	11	15
Ulcer	6	--	6	11
Acne condition	4	--	--	--
Heart condition	3	--	2	8
High blood pressure	2	--	6	5
Low calcium	2	--	--	--
High protein	1	--	6	1
Low starch	1	--	4	--
Kidney trouble	--	--	--	3
Miscellaneous	4	--	1	4
Not ascertained	3	--	--	4
Total	100	--	100	100
Number of family members	91	1/ 41	79	75

1/ Number too small for detailed analysis.

Table 33.--Family members dieting or watching weight 1/

Sex and age	Milwaukee				New Orleans			
	On a diet		Watching weight "not to gain"		On a diet		Watching weight "not to gain"	
	Low-fat milk		Low-fat milk		Low-fat milk		Low-fat milk	
	User family member	Nonuser family member	User family member	Nonuser family member	User family member	Nonuser family member	User family member	Nonuser family member
6	Percent							
Male	42	--	32	21	27	24	24	22
Up to 44	18		16	5	10	7	12	11
45 and over	23		16	15	17	17	12	11
Age not ascertained	1		--	1	--	--	3/	--
Female	58	--	68	79	73	75	75	77
Up to 44	26		40	45	25	20	44	41
45 and over	28		28	33	48	55	29	34
Age not ascertained	4		--	1	--	--	2	2
Sex not ascertained	--	--	--	--	--	1	1	1
Total	100	--	100	100	100	100	100	100
Number of family members	91	2/41	207	141	79	75	223	102

1/ Numbers watching weight "not to lose" too small for detailed analysis.
2/ Number too small for detailed analysis. 3/ Less than 1 percent.

Table 34.--"Now, we'd like an idea of what you think the calories are in different kinds of milk. If a glass of regular milk contains 165 calories, do you think this is more, or less, or the same as the calories in a glass of (kind) milk?" (Asked of all respondents. 1/)

Whole milk has:	Kind of milk compared											
	Milwaukee						New Orleans					
	Low-fat milk		Skim milk		Nonfat dry milk		Low-fat milk		Skim milk		Nonfat dry milk	
	Users	Nonusers	Users	Nonusers	Users	Nonusers	Users	Nonusers	Users	Nonusers	Users	Nonusers
	Percent											
More calories	84	54	89	78	61	54	86	65	94	85	69	66
Less calories	4	4	3	5	3	3	3	2	1	2	2	2
Same calories	2	1	1	1	4	7	3	6	1	3	5	6
Don't know	10	40	6	15	32	35	8	27	4	10	24	26
Not ascertained	2/	1	1	1	2/	1	--	--	--	--	--	--
Total	100	100	100	100	100	100	100	100	100	100	100	100
Number of respondents	222	261	222	261	222	261	236	261	236	261	236	261

1/ Including 6 respondents in Milwaukee and 20 in New Orleans who reported no family use of any of the 6 kinds of milk included in the survey.

2/ Less than 1 percent.

Low-Fat Versus Other Milks

Low-fat milk was used as a guest beverage by over a third of users in both cities who sometimes served milk to guests, but majorities of both users and nonusers specified whole as the kind used for such occasions. Milwaukee respondents were much more likely to serve milk as a guest beverage (about 9 in 10) than New Orleans respondents (about 5 in 10) (table 35).

Table 35.--"When you have guests come to your home for a meal, do you sometimes serve milk to them?" If reply is yes: "If you knew 2 or 3 days ahead of time that guests were coming for a meal, what kind of milk would you serve them?" (Asked of all respondents aware of low-fat milk.)

Replies	Milwaukee		New Orleans	
	Low-fat milk		Low-fat milk	
	Users	Nonusers	Users	Nonusers
	Percent 1/			
Yes, sometimes serve milk to guests	92	88	48	53
Whole	59	87	30	53
Low-fat	38	--	17	--
Other	4	4	2/	--
Kind not ascertained	2	--	3	--
No, do not serve milk to guests	7	10	47	42
Not ascertained	1	2	5	5
Total	100	100	100	100
Number of respondents	222	165	236	75

1/ Percentages may add to more than subtotals because some respondents mentioned more than one milk.
2/ Less than 1 percent.

Low-fat milk was regarded as a replacement for other milks by 54 percent of Milwaukee users and 43 percent in New Orleans. Whole milk was most frequently mentioned as the product displaced, with only a relative few mentioning skim or other milks. Switching from whole or skim to low-fat milk entailed no change in amount for well over half of those who had changed milks. However, additional consumption was indicated by the sizeable proportions (Milwaukee 44 percent, New Orleans 56 percent) who said that low-fat milk had not replaced another product (table 36).

If low-fat milk were no longer sold, most users would anticipate using more whole or skim milk; and large majorities estimated that the additional amount of whole or skim would be about the same as the amount of low-fat milk their families were presently using (table 37). But if low-fat milk were no longer available, would users revert to the product which they said it displaced? Not always. Over half of New Orleans users who said low-fat had replaced whole milk would use more skim milk

Table 36.--"Since you started using 2 percent-low-fat milk, do you think it has replaced some other product in your home?" If reply is Yes: "What other product has it replaced? Do you think you are using more or less 2 percent-low-fat milk than you did of the other product?"(Asked of respondents who reported family use during the 6 months prior to interview.)

Replies	Milwaukee	New Orleans
	Percent	
Yes, low-fat has replaced another product	54	43
Whole	41	30
Using about the same	28	18
Using more low-fat	9	10
Using less low-fat	4	1
Amount not ascertained	--	1
Skim	7	7
Using about the same	5	4
Using more low-fat	2	3
Amount not ascertained	1/	--
Other	4	4
Product not ascertained	2	2
No, low-fat has not replaced another product	44	56
Not ascertained	2	1
Total	100	100
Number of respondents	222	236

1/ Less than 1 percent.

Table 37.--"If 2 percent-low-fat milk were no longer sold in your area, do you think you would use more (kind) milk, stop drinking milk, use something else?" If reply is use more: "...do you think you would use more, less, or about the same amount of it than you use of 2 percent-low-fat milk?" (Asked of respondents who reported family use during the 6 months prior to interview.)

Would expect to:	Milwaukee	New Orleans
	Percent	
Use more whole	46	42
Compared with present low-fat milk use:		
About the same amount	34	31
Less	7	6
More	3	3
Not ascertained	2	2
Use more skim	36	42
Compared with present low-fat milk use:		
About the same amount	27	34
Less	4	6
More	2	1
Not ascertained	3	1
Use more nonfat dry	5	5
Compared with present low-fat milk use:		
About the same amount	5	5
Less	--	1/
Use something else	6	2
Whole and skim or dry	4	1
Skim or nonfat dry	1	--
Buttermilk	1	1
Kind not ascertained	1/	1/
Stop drinking milk	2	4
Expectation not ascertained	5	5
Total	100	100
Number of respondents	222	236

1/ Less than 1 percent.

(table 38). However, among users reporting this type of substitution, over 5 in 10 in Milwaukee and over 3 in 10 in New Orleans would revert to whole milk. Total milk consumption in the two cities would probably decrease very little should low-fat milk be no longer available to those who said it had not replaced another product, since 8 in 10 felt they would then use more of either whole or skim milk. 13/

Table 38.--Users' expectations of what they would do if low-fat milk were no longer available 1/

Would expect to:	Milwaukee		New Orleans	
	Users who said low-fat milk had replaced:			
	Whole	No other product	Whole	No other product
	Percent			
Use more:				
Whole	55	47	36	49
Skim	33	35	52	31
Dry	1	8	2	8
Other milk products	7	2	2	2
Stop drinking milk	2	3	4	3
Expectation not ascertained	2	5	7	7
Total	100	100	100	100
Number of respondents	91	98	71	132

1/ This is a cross-tabulation using part of the data from tables 36 and 37. Numbers who said low-fat milk had replaced products other than whole were too small for detailed analysis.

General Milk Consumption 14/

Respondents were asked about family use of 6 different kinds of milk: Whole, low-fat, skim, nonfat dry, buttermilk, and chocolate milk. Family characteristics associated with use of the milks were, for:

Whole	larger families; and for New Orleans only, children and lower income.
Low-fat	higher income and better-educated household heads.
Skim	higher income and better-educated households heads.
Nonfat dry	larger families, children, and lower income.
Buttermilk	none of significance.
Chocolate	larger families and children. (table 39).

13/ See pp. 3, 4, 5, and 7 for a discussion of low-fat milk sales.

14/ For this section of the analysis, only data from the basic part of the sample were used.

Table 39.--Background characteristics of families using the 6 kinds of milk

Family background characteristics	Milwaukee							New Orleans						
	Number of families	Whole	Low-fat	Skim	Nonfat dry	Butter-milk	Chocolate 1/	Number of families	Whole	Low-fat	Skim	Nonfat dry	Butter-milk	Chocolate
		Percent 2/							Percent 2/					
Number of members														
1 or 2	139	88	24	31	26	60	27	99	87	10	27	25	35	20
3 or 4	124	91	30	39	31	44	56	99	95	12	27	28	32	37
5 or more	83	99	20	29	36	42	72	66	100	5	23	47	32	61
Age composition														
All 18 and over	154	90	22	33	26	60	26	128	87	11	28	24	35	20
Children 6-17	94	95	29	41	31	44	68	69	97	7	25	38	35	52
Children up to 5 and 6-17, or up to 5 only	98	92	27	27	36	41	64	67	100	7	24	40	28	52
Education of household head														
None or grammar school	82	93	16	26	29	62	43	84	95	6	20	27	42	37
High school	172	91	26	32	27	48	55	111	94	6	26	32	26	47
College	83	92	34	45	37	41	43	61	90	16	36	39	38	20
Income														
Up to $3,999	77	91	18	25	30	52	49	121	96	5	22	31	35	34
$4,000 to $7,999	174	92	28	34	34	48	52	98	95	10	29	38	28	46
$8,000 and over	59	92	29	42	19	47	53	37	84	22	38	24	38	24

1/ Use not ascertained for 1 family.
2/ Percentages are not additive because of multiple milk use.

Frequency of Use

Whole milk had been used during the week prior to interview by close to 9 in 10 families in both cities (table 40). Of the other milks, only skim in Milwaukee and dry in New Orleans had been used by at least 2 in 10 families. For all kinds of milk, the amount consumed tended to vary directly with family size--larger families would ordinarily use more than smaller ones (table 41). Multiple use of milk was reported for about half of the families in both cities (table 42). Over 3 in 10 of those who had used whole milk the previous week had also used 1 other kind.

Respondents who reported no family use of low-fat milk during the previous week were then asked, "Do you ever use (kind) milk?" In both cities, chocolate milk was most frequently reported as consumed on less than a weekly basis, followed by buttermilk, nonfat dry, skim, and low-fat. Most milks were used by majorities of these families 12 times a year or even less often. Respondents were asked, "Why don't you use it more often?" Numbers of most of these groups were too small for detailed analysis, but replies particularly stressed limited use for nonfat dry, chocolate, and buttermilk; dietary concern in connection with whole and skim milk; and preference for milks other than low-fat.

Only chocolate milk in New Orleans and chocolate, skim, and nonfat dry milk in Milwaukee had been formerly used by at least 1 in 10 families. Former users were most likely to have last used any of the 6 milks during the year preceding the survey. When asked, "Why did you stop using it?" respondents in these small groups gave health and diet reasons in connection with whole, skim, and chocolate milk; dislike of the taste of nonfat dry milk; limited use for buttermilk; and again, perference for milks other than low-fat. Major switches in kind of milk had been from skim to whole or low-fat; from nonfat dry to whole; and in Milwaukee only, from whole to low-fat.

Nonusers of the 6 Milks

Only 6 respondents in Milwaukee and 20 in New Orleans reported no family use of any of the 6 different kinds of milk. However, 5 of them said they did use canned milk. Major reasons given for nonuse of milk were that it disagreed with someone in the family and dislike of milk. Most of these families had incomes of less than $4,000, and over half of the household heads had not attended high school.

The Where and Why of Milk Purchases 15/

A grocery store was the most common place of purchase for milk, although well over 3 in 10 had whole or skim milk delivered at home. One-fourth of the families had low-fat milk home delivered (table 43).

Reasons of convenience were most frequently given regardless of place of purchase. Those who bought milk at the grocery store liked being able to get it along with their other purchases; those who had home delivery appreciated the dependability of this source of supply. Economy was mentioned primarily in connection with purchases at the grocery store. Six respondents said they obtained whole milk from a particular place because they liked the people who sold it (table 44).

15/ See pp. 13 and 14 for further information concerning channels of distribution.

Table 40.--Family use of milk

Use status	Milwaukee						New Orleans					
	Whole	Low-fat	Skim	Nonfat dry	Butter-milk	Choco-late	Whole	Low-fat	Skim	Nonfat dry	Butter-milk	Choco-late
	Percent											
Used "last week" 1/	86	16	20	10	17	12	89	5	16	20	16	15
Using, but not used "last week" 1/	5	9	13	20	33	36	4	5	10	12	17	22
Times per year used												
12 or fewer	4	4	6	10	21	26	1	3	4	5	8	7
13-24	1	2	2	3	3	3	--	--	--	--	1	1
25 or more	2/		2	3	5	4	1	1	3	2	4	5
Frequency not ascertained	2/	3	3	4	4	3	2	1	3	5	4	9
Formerly used	7	8	13	10	6	13	2	1	9	9	5	11
Months ago last used												
1-12	3	5	7	3	3	8	1	1	4	4	3	8
13-24	2	1	4	3	1	1	1	2/	3	1	2	1
25-60	1	1	1	4	2	3	2/	--	1	3	2/	2
Time not ascertained	1	1	1	--	2/	1	--	--	1	1	--	--
Not used last 5 years	2	67	54	60	44	39	5	89	65	59	62	52
Total	100	100	100	100	100	100	100	100	100	100	100	100
Number of respondents	346	346	346	346	346	346	264	264	264	264	264	264

1/ Week prior to interview.
2/ Less than 1 percent.

Table 41.--"As far as (kind of milk) is concerned, about how many quarts did you use last week?" (Asked of all respondents)

Kind of milk and number of members in family	Replies (in quarts)											
	Milwaukee						New Orleans					
	Total number of families	None	3 or less	4-7	8-14	15 or more	Total number of families	None	3 or less	4-7	8-14	15 or more
		Percent						Percent				
Whole												
1 or 2	139	21	40	30	9	--	99	23	35	32	8	2
3 or 4	124	11	13	28	37	11	99	6	14	43	32	5
5 or more	83	6	1	13	41	39	66	2	6	23	45	24
Low-fat												
1 or 2	139	81	11	5	2	1	99	96	3	1	--	--
3 or 4	124	81	4	4	9	2	99	93	3	3	1	--
5 or more	83	92	3	3	1	1	66	98	--	2	--	--
Skim												
1 or 2	139	82	12	5	1	--	99	79	14	6	1	--
3 or 4	124	77	12	9	2	--	99	86	6	7	1	--
5 or more	83	80	6	8	3	3	66	89	5	6	--	--
Nonfat dry												
1 or 2	139	94	4	1	1	--	99	84	11	4	1	--
3 or 4	124	89	8	2	--	1	99	83	9	7	--	1
5 or more	83	83	7	4	5	1	66	71	11	6	11	1
Buttermilk												
1 or 2	139	80	19	1	--	--	99	79	19	2	--	--
3 or 4	124	86	13	1	--	--	99	81	17	2	--	--
5 or more	83	84	13	3	--	--	66	95	5	--	--	--
Chocolate												
1 or 2	139	94	6	--	--	--	99	91	9	--	--	--
3 or 4	124	86	14	--	--	--	99	86	14	--	--	--
5 or more	83	81	17	2	--	--	66	74	18	8	--	--

Table 42.--Multiple milk use (during week prior to interview)

Families who used:	Milwaukee	New Orleans
	Percent	
Whole and other milks	48	50
Number of other milks		
One	33	34
Two	11	13
Three	3	3
Four	1	--
Whole milk only	52	50
Total	100	100
Number of respondents	298	234

Table 43.--"Now I would like you to tell me where you buy (kind) milk." (Asked of respondents who reported family use during week prior to interview.)

Replies	Milwaukee				New Orleans			
	Whole	Low-fat	Skim	Nonfat dry	Whole	Low-fat	Skim	Nonfat dry
	Percent							
Grocery store	60	71	61	--	62	--	58	100
Home delivery	35	25	38	--	36	--	38	--
Specialty store	3	4	1	--	--	--	--	--
Dairy (store)	2	--	--	--	--	--	2	--
Bakery	--	--	--	--	1	--	2	--
Not ascertained	--	--	--	--	1	--	--	--
Total	100	100	100	--	100	--	100	100
Number of respondents	298	55	69	1/ 36	234	1/12	42	52

1/ Numbers too small for detailed analysis.

Table 44.--"Why do you buy it (whole milk) at this particular place?" (Asked of respondents who reported family use during week prior to interview. 1/)

Reasons	Place of purchase			
	Milwaukee		New Orleans	
	Grocery store	Home delivery	Grocery store	Home delivery
	Percent 2/			
Convenience	76	82	87	94
Purchase along with other groceries	31	--	33	--
Buy as needed or used; get it fresh every day	26	1	36	--
Close by, in neighborhood	13	--	24	--
No storage facilities for home delivery	10	--	5	--
Convenience (general)	6	36	5	7
Always available, always here	1	42	3	81
Fresher from dairy	--	6	--	17
Economy	41	7	18	11
Cheaper	31	4	14	4
Like to pay as purchased	14	--	5	--
Can pay by the month	--	3	--	7
Nice people to deal with; like the milkman	1	1	1	4
Habit	--	6	--	--
Get preferred packaging	--	5	1	2
Get preferred brand, milk type	--	4	2	1
Get preferred container size	--	--	1	--
Miscellaneous	3	2	--	--
Not ascertained	--	3	--	--
Number of respondents	179	104	146	84

1/ This question was also asked for low-fat, skim, and dry milk, but numbers were too small for detailed analysis.

2/ Percentages may add to more than their subtotals and these add to more than 100 because some respondents gave more than one reason.

Variations in Types of Use

"You said that you use (kind) milk. In what way do you use most of it?...In what way do you use it next most...?" Most milk of the 6 kinds was used as a beverage, and this, of course, was virtually the only use for chocolate milk. Buttermilk was used secondarily for cooking and baking. In both cities, whole milk was also used, in order of rankings, on cereals, for cooking or baking, and in coffee or tea. Since in Milwaukee only these same use rankings were obtained for low-fat and skim milk, this might indicate that Milwaukee families do not differentiate the use of whole, low-fat, and skim milk as much as New Orleans families do (table 45).

About one-fourth of respondents whose families had used whole and either nonfat dry or skim milk said they mixed the milks--most often whole with nonfat dry (table 46). Economy was the major reason given for milk mixing, and mixtures were used primarily as a beverage or for cooking.

Milk as a Beverage

According to the homemakers, about 2 of 3 adults and almost all of the children under 18 drink milk, at least occasionally, as a beverage with home meals and snacks. Slightly less than half the adults drink milk on occasion at meals away from home, while 7 of 10 children drink milk at meals away from home (table 47).

As a beverage, whole milk was the overwhelming favorite for all age groups no matter what the kind of meal or where it was eaten. In Milwaukee, low-fat milk was next in popularity; but in New Orleans, non-fat dry milk was used as a beverage more often than low-fat or skim milk.

Product Evaluation

Whole, low-fat, and skim milk were liked primarily for health-related qualities attributed to them. For whole milk, taste and consistency were also important to consumers. Nonfat dry milk was liked for its convenience, utility, and comparatively moderate cost. The only real indication of product aversion was in Milwaukee, where almost a third of the respondents said there was nothing they liked about skim milk (table 48). 16/

About 7 in 10 families were seemingly satisfied with whole milk, for respondents said there was nothing disliked about it. Major dislikes reported were for the consistency of skim milk and for the taste of both skim and dry milk. In general, there were fewer adverse reactions from New Orleans consumers than from those in Milwaukee, but only one type of negative comment was given by more than 3 in 10 Milwaukee respondents--34 percent disliked the consistency of skim milk (table 49).

16/ See fig. 2, p. 4, for Federal Milk Order Market sales trends reflected in this adverse reaction.

Table 45.--"You said that you use (kind) milk. In what way do you use most of it; for instance, do you use it most for cooking or baking, on cereals, drinking, in coffee or tea, or any other way? In what way do you use it next most...?" (Asked of all respondents.)

Kind of milk and use	Milwaukee						New Orleans					
	Respondents	Used "last week" 1/ — Used this way and ranked: First	Second	Third	Fourth	Not used this way	Not used "last week" 1/	Respondents	Used "last week" 1/ — Used this way and ranked: First	Second	Third	Fourth	Not used this way	Not used "last week" 1/
	Number	Percent						Number	Percent					
Whole	346							264						
Drinking		67	5	3	3	8	14		74	6	3	2	4	11
On cereals		9	45	17	2	13	14		5	39	24	6	15	11
Cooking or baking		8	22	41	6	9	14		2	15	27	22	23	11
Coffee or tea		3	8	9	34	32	14		7	20	14	14	34	11
Low-fat	346							264						
Drinking		13	1	1	1	2/	84		4	1	--	--	2/	95
On cereals		2	8	2	--	4	84		--	--	1	--	4	95
Cooking or baking		1	3	6	2/	6	84		--	1	--	--	4	95
Coffee or tea		--	1	2	5	8	84		1	1	--	--	3	95
Skim	346							264						
Drinking		17	2/	1	--	2	80		14	2	2/	2/	2/	84
On cereals		2	4	3	2/	11	80		1	3	3	--	9	84
Cooking or baking		1	4	2	2/	13	80		--	3	1	2/	12	84
Coffee or tea		2/	1	1	1	17	80		2	3	3	2/	8	84
Non-fat dry	346							264						
Drinking		5	2	2/	--	3	90		13	3	1	--	3	80
On cereals		--	2	1	--	7	90		1	3	4	1	11	80
Cooking or baking		6	2	1	--	1	90		4	4	2	3	7	80
Coffee or tea		--	--	2/	1	9	90		1	2	2	2	13	80
Buttermilk	346							264						
Drinking		10	2	--	--	5	83		11	2/	--	--	5	84
Cooking or baking		6	4	--	--	7	83		2	2	2/	--	12	84
Chocolate	346							264						
Drinking		12	--	--	--	2/	88		13	--	--	--	2	85

1/ Week prior to interview.
2/ Less than 1 percent.

Table 46.--"Do you or does any member of your family ever mix (non-fat dry, powdered, or skim) milk with regular whole milk?" (Asked of respondents who reported family use of whole milk and either non-fat dry or skim milk during week prior to interview.)

Replies	Milwaukee	New Orleans
	Percent	
Yes, whole mixed with:	23	23
Non-fat dry	13	19
Skim	10	2
Kind not ascertained	--	2
No, milks not mixed	77	77
Total	100	100
Number of respondents	81	67

Table 47.--"Now, beginning with yourself, what kind of milk do you drink at meals away from home meals, at home meals, for snacks, whether at home or away from home?" (Asked for each family member.)

Age Group and occasion	Milk used as a beverage										
	Milwaukee						New Orleans					
	Family members	Whole	Low-fat	Skim	Nonfat dry	None	Family members	Whole	Low-fat	Skim	Nonfat dry	None
	Number	Percent 1/					Number	Percent 1/				
18 and over	710						583					
At home meals		52	10	10	3	33		55	2	8	8	36
Snacks		47	8	9	2	39		51	3	7	6	39
Meals away from home		40	1	4	--	57		37	2/	4	1	59
6-17	280						247					
At home meals		87	10	5	5	1		85	1	2	13	13
Snacks		84	10	5	4	5		78	2/	2	10	20
Meals away from home		79	1	2	--	17		74	2/	2	2	25
Up to 5	172						107					
At home meals		83	7	2	6	5		88	--	--	13	11
Snacks		78	7	2	4	11		81	1	--	8	19
Meals away from home		66	3	2	1	28		74	--	4	5	26

1/ Percentages add to more than 100 because some members drank more than one milk.
2/ Less than 1 percent.

Table 48.--"Now, I'd like to know the kinds of things that you and your family like about different kinds of milk. First, what do you like about (kind) milk?" (Asked of all respondents.)

Things liked	Milwaukee				New Orleans			
	Whole	Low-fat	Skim	Nonfat dry	Whole	Low-fat	Skim	Nonfat dry
	Percent 1/							
Health	32	26	42	7	42	5	25	13
It's nutritious, healthful, wholesome, filling	14	2	3	1	20	1	2	1
Good, nourishing for the children, babies	12	1	1	1	7	--	1	1
Contains vitamins, minerals, calcium, protein	7	1	1	1	11	1	2/	2/
Builds bones and teeth	4	--	--	--	4	--	--	--
Ordered by the doctor; on diet for specific ailment	1	2/	1	2/	2	--	3	3
Nonfattening, low calories (not filling)	--	23	37	5	--	5	20	9
Other	1	3	1	2/	4	1	1	--
Taste	29	13	2	2	34	3	2	4
Like the taste (general)	28	4	2	1	33	1	2	4
Tastes better than skim	1	4	--	2/	1	--	--	--
Tastes like whole milk	--	5	2/	1	--	2	2/	--
Consistency	29	8	4	--	17	2	1	
Rich, creamier	26	3	--	--	14	1	2/	2/
Like the consistency	3	1	2/	--	3	2/	--	--
Not too rich	1	4	4	--	1	1	2/	--
Use	23	1	2	17	16	1	2	9
Thirst quencher, refreshing	10	1	1	--	8	2/	1	--
Good for cooking	7	--	1	15	2	--	1	4
Good in coffee, tea	6	2/	2/	2/	5	2/	--	2/
Good on cereal	2	--	--	2/	3	2/	--	1
Fortifies, can be mixed with other milk	--	--	--	2	--	--	--	4
Other	1	--	--	--	2/	--	--	--
Convenience	1	2/	--	25	1	2/	--	9
Easy to keep, store; less or no spoilage	1	2/	--	16	2/	2/	--	2
Easy to prepare, mix	2/	--	--	2	2/	--	--	2
Always available; good in emergency	--	--	--	13	--	--	--	5
Other	--	--	--	2	--	--	--	--
Some (or all) family members like it	15	1	1	1	14	2/	2	1
Less expensive	--	3	1	16	--	--	2/	11
Nothing liked	5	7	30	18	2	2	7	8
Not used; not ascertained	3	54	24	36	7	89	65	60
Number of respondents	346	346	346	346	264	264	264	264

1/ Percentages may add to more than their subtotals and these add to more than 100 because some respondents gave more than one answer.

2/ Less than 1 percent.

Table 49.--"What do you dislike about (kind) milk?" (Asked of all respondents.)

Things disliked	Milwaukee				New Orleans			
	Whole	Low-fat	Skim	Non-fat dry	Whole	Low-fat	Skim	Non-fat dry
	Percent 1/							
Health	15	5	4	1	10	2/	3	3
Fattening, high in calories	12	1	--	--	6	--	--	--
It upsets stomach, digestive system	3	1	1	2/	4	--	1	--
Not nutritious, as good for you	2/	3	3	1	2/	2/	2	3
Consistency	6	8	34	10	3	2	11	7
Too rich, creamy, greasy thick	5	1	--	2/	1	--	--	2/
Not rich enough	1	3	6	4	1	1	2	3
Too watery, weak	--	4	28	6	2/	1	9	4
Other	2/	2/	--	2/	1	--	2/	--
Taste	5	5	26	30	6	1	8	14
Dislike taste (general)	3	4	9	18	2	1	3	4
Leaves aftertaste	2	--	2/	1	1	--	--	--
Flat, chalky taste; tasteless	2/	1	16	11	1	--	5	9
Other	2/	--	1	2/	2	--	2/	1
Some (or all) family members dislike it	2	1	3	3	2	2/	2	2
Too expensive	2	1	1	--	5	2	--	--
Dislike color	--	--	7	2	2/	--	2/	--
Difficult to prepare	--	--	--	12	--	--	--	7
Miscellaneous	2/	1	3	2	1	2/	1	--
Nothing disliked	69	25	16	14	72	7	13	14
Not used; not ascertained	2	56	22	35	7	89	64	59
Number of respondents	346	346	346	346	264	264	264	264

1/ Percentages may add to more than their subtotals and these add to more than 100 because some respondents gave more than one answer.

2/ Less than 1 percent.

THE ECONOMIC IMPACT OF LOW-FAT MILK AND ESTIMATES OF ITS MARKET POTENTIAL

The impact of low-fat milk, either within a market or between markets, depends upon many factors. Among the more important of these are (1) the quantities of existing milk products for which it is substituted, and (2) the change in consumption of fluid milk that is achieved through bringing new users of fluid milk into the market. Futhermore, the impact may be different for each of the segments of the industry that are affected--i.e., producer, processor, or consumer.

Data from the surveys included in this study provide an indication of the low-fat product's current sales trend as well as use patterns for this group of users. These use patterns, however, do not show the effects of changes in consumption patterns for all consumers of all types of fluid dairy products in the market. Therefore, the following analysis will show the possible effects on producer and processor revenues

from sales only to users of low-fat milk on the basis of the stated assumptions. The analysis may or may not reflect actual use patterns and pricing structure existing in an individual market. It may, however, provide a procedure which can be used to analyze the impact in a specific market under actual conditions, provided sufficient data are available.

Most milk producers in the United States receive payment for their milk on the basis of a classified system of pricing. Therefore, this method of payment will be used for analytical purposes.

Under a classified pricing system, processors pay for milk on the basis of its use. Generally there are two classes of use - Class I and Class II. Class I milk is milk bottled and distributed in fluid form. It has to be priced higher because of its bulkiness, perishability, and the rigid sanitary conditions required for its processing. Class II milk is generally producer milk that is used in making various manufactured dairy products. 17/

Assumptions used in this analysis are as follows:

1. Standard compostion of market milk is 3.5 percent butterfat and 96.5 percent skim fluid.
2. The price for Class I milk is $4.80 per hundredweight and for Class II milk is $3.12 per hundredweight. The Class I and Class II butterfat differential is 7.2 cents per each 0.1 percent difference in the processed product's fat content, either above or below the 3.5 percent fat content of standard market milk.
3. The butterfat content of milk sold at retail as whole milk is 3.5 percent; skim, 0.5 percent; and low-fat, 2.0 percent.
4. Butterfat removed from the 3.5 percent market milk used in making a low-fat product is replaced by nonfat dry milk valued at $18 per hundredweight.

Impact on Producer's Gross Returns

The impact of sales of a low-fat product on producer revenues is significantly affected by the amount of total low-fat sales which represent additional consumption of milk as opposed to the quantities of skim and whole milk which have been replaced by the low-fat product. The household surveys indicate some users have substituted low-fat milk for whole and skim milk. They also indicate some users of this product did not buy fluid milk prior to its introduction into the market.

Table 50 shows the estimated producer value for 100 pounds of 3.5 percent market milk if all of it is used as either whole, skim, or low-fat milk. Also shown is the estimated producer value for this market milk if sold on the basis of the 1961 sales pattern for whole and skim milk in Federal Milk Order Markets. 18/

The estimated values shown in tables 50 and 51 for the butterfat and skim fluid components of market milk used in Class I and Class II products were computed using the following formulas:

$$\text{Value per pound of skim fluid} = \frac{A-(B \times C)}{100}$$

17/ For a more detailed description of the classified system of pricing market milk see (1, 8, 4, 2).

18/ Relationship between whole and skim milk sales based on 1961 sales patterns, Federal Milk Order Market Statistics (6).

$$\text{Value per pound of butterfat} = X + \frac{(C \times D)}{100}$$

Where: A = Class price per 100 pounds of market milk.
B = Number 0.1 percents of butterfat in 3.5% market milk.
C = Butterfat differential in cents.
D = Number of 0.1 percents in 1 pound of butterfat.
X = Value per pound of skim fluid.

For example, substituting the assumed Class I price of $4.80 per hundredweight and butterfat differential of 7.2 cents in the formula gives the following estimated prices per pound for each of the two milk components used in Class I products.

$$\text{Nonfat fluid price per pound} = \$4.80 - \frac{(35 \times .072)}{100} = 2.28$$

$$= \$0.0228 \text{ or } 2.28 \text{ cents}$$

$$\text{Butterfat price per pound} = \$0.0228 + \frac{(.072 \times 1{,}000)}{100}$$

$$= \$0.0228 + 0.7200$$
$$= \$0.7428 \text{ or } 74.28 \text{ cents}$$

Table 50.--Estimated producer value for 100 pounds of 3.5 percent market milk used in selected processing alternatives

Product into which market milk is processed	Butterfat content (percent)	Quantity used (pounds)	Estimated value per pound (cents)	Estimated total value to producer (dollars)
Whole milk (Class I)	3.5			
Butterfat		3.500	74.28	2.600
Skim fluid		96.500	2.28	2.200
Total		100.000		4.800
Skim milk (Class I)	0.5			
Butterfat		.485	74.28	.360
Skim fluid		96.500	2.28	2.200
Transferred to Class II				
Butterfat		3.015	72.60	2.189
Skim fluid		0	--	
Total		100.000		4.749
Low-fat milk (Class I)	2.0			
Butterfat		1.969	74.28	1.463
Skim fluid		96.500	2.28	2.200
Transferred to Class II				
Butterfat		1.531	72.60	1.112
Skim fluid		0	--	
Total		100.000		4.775
90% whole and 10% skim whole milk (Class I)	3.5			
Butterfat		3.150	74.28	2.340
Skim fluid		86.850	2.28	1.980
Skim (Class I)	0.5			
Butterfat		.048	74.28	.036
Skim fluid		9.650	2.28	.220
Transferred to Class II				
Butterfat		.302	72.60	.219
Skim fluid		0	--	
Total		100.000		4.795

Table 51.--Estimated value to producers for 100 pounds of 3.5 percent market milk used to make low-fat milk when 5 percent of the low-fat sales represent new consumption, 85 percent represent former whole milk sales, and 10 percent represent former skim milk sales

Product into which market milk is processed	Butterfat content (percent)	Quantity used (pounds)	Estimated value per pound (cents)	Estimated total value to producer (dollars)
Low-fat milk (Class I)	2.0			
Butterfat		1.969	74.28	1.463
Skim fluid		96.500	2.28	2.200
Transferred to Class II				
Butterfat		1.531	72.60	1.112
Skim fluid		0	--	
Total		100.000		4.775
Replaced items				
Whole milk (Class I)	3.5			
Butterfat		2.929	74.28	2.176
Skim fluid		80.770	2.28	1.842
Skim milk (Class I)	0.5			
Butterfat		.049	74.28	.036
Skim fluid		9.798	2.28	.223
Class II				
Butterfat		.522	72.60	.379
Nonfat skim fluid		5.932	0.60	.036
Total		100.000		4.692

These data show that returns to producers for this 100 pounds of market milk are greatest when it is sold for use in whole milk and lowest when used in skim milk. When the milk is used in low-fat milk, producers receive less than they would if it is used in whole milk but more than is received when it is used in skim milk.

Table 51 compares the total estimated producer return for 100 pounds of 3.5 percent market milk when it is used in low-fat milk to the return they would receive from the quantity of whole milk and skim milk which has been replaced by the low-fat product. The comparison assumes that 85 percent of the low-fat sales were former whole milk sales, 10 percent were former skim sales, and 5 percent represent new or additional fluid milk consumption. The 85 percent and 10 percent figures were selected to show the changes under an extremely high substitution rate for whole milk.

Three things become apparent from this table. First, butterfat is shifted from a Class I to Class II use category; second, skim fluid is transferred from a Class II to a Class I use; and finally, the change in value for the quantity of skim fluid shifted to a higher payment use category more than offsets the value of the butterfat moved down to a lower paying use category.

In this illustration, producers receive an additional 8 cents per hundredweight for each 100 pounds of market milk used in a low-fat product as compared with the return from its use in whole milk and skim milk ($4.775 - $4.692 = $0.083). The 8-cent figure, however, does not represent a net increase received for each 100 pounds of market milk. The relationship of the quantities of whole and skim milk sold to the amount of low-fat milk sold in a market has a significant effect on the net return for this 100 pounds of market milk. Table 52 illustrates this point by using the return

Table 52.--Comparison of estimated producer revenue from 2,000 pounds of 3.5 percent market milk used in Class I and Class II products before and after the introduction of low-fat milk into the market

Product into which market milk is processed	Butterfat content (percent)	Quantity used (pounds)	Estimated value per pound (cents)	Estimated total value to producer (dollars)
Before sale of low-fat milk				
Class I				
Whole milk	3.5			
Butterfat		62.370	74.28	46.328
Skim fluid		1,719.630	2.28	39.208
Skim milk	0.5			
Butterfat		.990	74.28	.735
Skim fluid		197.010	2.28	4.492
Class II				
Butterfat		6.640	72.60	4.821
Skim fluid		13.360	0.60	.080
Total		2,000.000		95.664
After sale of low-fat milk				
Class I				
Whole milk	3.5			
Butterfat		59.395	74.28	44.119
Skim fluid		1,637.605	2.28	37.337
Skim milk	0.5			
Butterfat		.940	74.28	0.698
Skim fluid		187.060	2.28	4.265
Low-fat milk	2.0			
Butterfat		2.000	74.28	1.486
Skim fluid		98.000	2.28	2.234
Class II				
Butterfat		7.665	72.60	5.565
Skim fluid		7.335	0.60	.044
Total		2,000.000		95.748

for 2,000 pounds of 3.5 percent market milk used in Class I and Class II before and after the introduction of low-fat milk into the market. The assumptions used in this table are the same as those used in the 2 preceding tables.

Here again, producers receive an additional 8 cents for the 100 pounds of market milk used in the low-fat product. ($95.748 - $95.664= $0.084). Since 2,000 pounds of market milk were used for all types of Class I products, the 8 cents must be divided by 20 to obtain the net return per 100 pounds of market milk. In this example, on the basis of the stated assumptions, producer returns would be increased by 0.4 cents for each 100 pounds of market milk sold.

On the basis of the preceding examples and assumptions, it may be concluded that producer revenues tend to be increased for those quantities of market milk going to low-fat milk consumers when a relatively small proportion of the total low-fat milk sales represents additional or new consumption of fluid milk. On the other hand, while some market milk producers may benefit from the sale of the low-fat product, other industry groups may be adversely affected, since they would be required to

use or dispose of the butterfat shifted from a fluid use to a manufacturing use category. In surplus producing areas, this might represent a serious threat to the stability of the pricing structure for milk used in manufactured dairy products in these markets.

Impact on Processors' Gross Returns

Processors can benefit from the sale of low-fat milk. The extent to which an individual processor may benefit, however, is directly related to the proportion of this low-fat product's total sales which represent new or additional use and that percentage which represents former whole and skim milk purchases.

For example, assuming that 1,000 quarts of low-fat milk were sold at the average retail prices reported in the national mail survey, they would have a retail value of $240.00. 19/

If the same relationships used for purposes of illustration in table 51 are applied to this 1,000 quarts of retail sales, 5 percent of this total figure would represent new or additional consumption by low-fat milk users; 85 percent of the total would represent replacement of whole milk, and the remainder would represent a replacement of skim milk. Processors would sell an additional 50 quarts of fluid product worth $12.00 at an average retail price of 24 cents per quart.

If the low-fat product were not sold, processors might have sold only 850 quarts of whole milk at 25 cents per quart and 100 quarts of skim milk at 20 cents per quart with a total retail value of $232.50. On this basis, the additional quantity of fluid milk sold would be worth $7.25 in retail sales instead of $12.00. Despite this increase in sales, however, processors are confronted with the problem of disposing of more butterfat when selling a low-fat product than they might have to do when only whole and skim milk are sold. This, of course, presumes that each 100 pounds of 3.5 percent market milk used in processing a low-fat item was paid for and used as shown in table 51.

Impact on Consumer Prices

Comparing the differences in the cost of milk used to make whole, low-fat, and skim milk to the differences existing between the average retail prices charged for these products provides a general indication of the effect that the butterfat content of these products has on retail prices.

Retail prices charged for nonfortified low-fat and skim milk, when compared with those paid for regular whole milk, generally reflect the full value of the butterfat differences between these products. When they are fortified with additional nonfat solids, however, it appears that less than the full value of the butterfat difference between the products is reflected in the variation between the prices paid.

Using the earlier-stated assumptions as a basis for comparison, the cost of milk used in fortified low-fat milk was 1.8 cents per quart below the milk used in whole milk. For nonfortified low-fat and skim milk, the difference amounted to 2.3 and 4.6 cents per quart. (table 53). Depending upon the channel of distribution, the retail prices for fortified low-fat milk were 0.9 and 1.2 cents per quart lower than those

19/ Estimated retail value of low-fat milk = 1,000 quarts x $0.24 weighted average price per quart = $240.00.

Table 53.--Comparison of differences in estimated raw material costs of making whole, low-fat, and skim milk, and average price differences in retail prices 1/

Product	Estimated market milk cost for hundredweight by product use	Estimated raw material cost per quart	Average retail price per quart		Difference in cost and prices using whole milk as standard		
						Retail prices	
			Home delivered price	Retail store price	Raw material costs	Home delivered price	Retail store price
	(dollars)	(cents)	(cents)	(cents)	(cents)	(cents)	(cents)
Whole milk (3.5% B.F.)	4.80	10.3	25.4	24.0	--	--	--
Low-fat milk (2.0% B.F.) with added solids	3.72	2/8.5	24.5	22.8	-1.8	-0.9	-1.2
plain		8.0	23.1	20.5	-2.3	-2.3	-3.5
Skim milk (0.5% B.F.) with added solids	2.64	2/6.2	21.6	20.2	-4.1	-3.8	-3.8
plain		5.7	20.8	19.1	-4.6	-4.6	-4.9

1/ Cost per hundredweight of 3.5 percent market milk used is the 1963 average Class I price for 79 Federal Milk Order Markets. Butterfat differential used to compute costs for low-fat and skim milk was 7.2 cents per each 0.1 percent butterfat difference from a 3.5 percent standard. Prices per quart from table 10, p. 16.

2/ Includes adding dry nonfat solids at an estimated cost of 0.5 cents per quart.

charged for whole milk. In this instance, between one-half and two-thirds of the difference in the cost of milk used in making the product appeared to be reflected in the variations between retail prices for the products.

Prices paid for fortified skim milk were 3.8 cents per quart less than those charged for whole milk. Cost of the milk used was 4.1 cents per quart below the cost of the milk used in whole milk. In this case, nine-tenths of the cost difference between the two products appeared to be fully reflected in the variation between the retail prices of the products.

In view of the differences between the amount of the cost spreads and retail price spreads between fortified and nonfortified low-fat and skim milk, it appears that consumers may be paying a slight premium for the fortified products.

It must be noted, however, the figures used in the above table are based upon average retail price and not wholesale price data and also do not reflect any adjustments for costs of vitamin fortification; differences in processing, packaging, or distribution costs; or any difference in promotional expenses which may exist between the products in the various channels of distribution.

Provided recent patterns continue, sales for low-fat, skim, and whole milk could possibly reach an estimated 1.8, 1.2, and 24.0 billion quarts respectively between 1962 and 1970. These estimates were developed by using the average annual increase in fluid milk sales, in terms of product weight, that occurred during the mid-fifties and late fifties and early sixties (7, p. 24). The percentage changes of whole and skim milk in relation to the total pounds of product sold between 1953 and 1961 were also used (6, p. 14). Survey data relating to per capita sales trends for the low-fat product in the Milwaukee and Salt Lake City markets and the low-fat milk sales data for 57 Federal Milk Order Markets were used to make estimates of the 1970 product mix. A comparison of the total product pounds of fluid milk used for these 1970 estimates compares favorably with a total figure calculated by using recently reported per capita consumption and population estimates for 1970. 20/

These estimates, however, should not be interpreted as forecasting a higher per person usage for all fluid milk products between 1963 and 1970 but should be viewed as reflecting the effect of a shifting consumption pattern between types of fluid milk products and an increasing population with low-fat milk sales increasing at a much greater rate than those for either skim or whole milk sales.

CONCLUSIONS

Producers, processors, and consumers derive some benefits from the sale of low-fat milk. Benefits to producers and processors are in the form of increased revenues, while dieting and weight-conscious consumers are able to obtain a fluid dairy product that meets their taste and special nutritional requirements.

From the producers' and processors' viewpoints, low-fat milk sales to date can be considered a beneficial factor in marketing fluid milk for one reason. That is, the additional quantity of fluid milk product sold to consumers who might not purchase any fluid milk if the low-fat product were not available can under favorable pricing conditions more than offset any income loss that may result from whole milk and skim milk users shifting to the low-fat product. Future benefits from expanded sales of low-fat milk will depend upon that volume of the product's total sales which represents new or additional users as well as sales which would otherwise be lost if the low-fat product were not available. If the low-fat product is substituted for whole milk at a rate that exceeds the foregoing gains, this product's sales would result in lower relative returns under present pricing procedures.

From the standpoint of the consumer, low-fat milk is used primarily for health-connected reasons. Its relatively low-fat content, together with nutrient adequacy and generally acceptable taste, make it popular with those who are dieting or merely watching weight. Only a few consumers cited its lower costs as a reason for use. However, most consumers are satisfied with whole milk and continue to use it.

Household surveys indicate that word-of-mouth promotion by relatives, friends, and medical personnel appear to be the most effective means of introducing the low-fat product to consumers. Next in importance are the milk distributor and mass advertising media.

20/ Speech: Agriculture in the Years Ahead, R. F. Daly, Econ. Res. Serv., U. S. Dept. Agr., Southern Agricultural Workers Conference, Atlanta, Ga. February 3, 1964.

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APPENDIX A-TECHNICAL APPENDIX

Methodology

The research program was divided into three operational phases. Phase I involved research to determine (1) States and areas where the low-fat product was sold or could be sold, (2) length of time the product was available, (3) number of processors in these areas retailing the product, and (4) composition of the low-fat product sold.

Phase I

Preliminary investigation revealed any data relating to sales of low-fat milk were being included as part of the total figures reported for other types of fluid milk. In addition, a standard of identity or uniform product definition was not in general use to identify the low-fat product. In order to determine where low-fat milk was currently being sold, general composition of the product, and whether sales data could be readily obtained, a mail questionnaire was sent to all Federal Milk Order Market Administrators in the spring of 1962. They were asked (1) whether or not a low-fat fluid milk product was sold in their marketing area, (2) if sold, what was the date it was placed on the market, (3) the product's composition in terms of its butterfat and nonfat solids levels as well as the quantity and types of vitamin and mineral fortification, and (4) whether sales figures for this type of milk could be regularly reported as a separate item in reports. Administrators who indicated such a product was not available were asked to provide (if possible) the reason or reasons for the product's nonsale and whether or not there was any indication the product might be offered for sale in their market in the immediate future.

Several conclusions were drawn from the information supplied by milk market administrators. First, adequate data relating to the low-fat product's composition, packaging, distribution, price, and volume of sales on an individual company basis could not be obtained from consolidated reports or central sources of information. Second, some of the most important markets in the United States operating under Federal Milk Marketing Orders where low-fat milk was being sold could not supply separate sales data for the product. Finally, low-fat milk--defined as a skim milk or skimmed milk product by various State statutes and regulatory agencies--covered such a varied and wide range of butterfat levels, it was necessary for survey purposes to limit the term low-fat milk to include only those skim or skimmed milk products whose milk fat content fell within a specified range.

Phase II

Phase II of this research was concerned with the general lack of data throughout the country on the production, distribution, and sales volume of low-fat milk. This included a national mail survey by regions designated in figure 1, page 2, as well as a more intensive survey of all processors selling a low-fat product in selected cities.

National Mail Survey

Table 54 presents a comparison by geographic region of the total number of plants in the region and the number of addresses used in the mail survey.

Table 54.--Comparison of sample universe to total number of plants by geographic region 1/

Region	Plants in 1958 Census of Manufactures SIC Code 2026	Share of total plants in U.S.	Plant addresses in sample	Share of total sample
	Number	Percent	Number	Percent
New England	728	12.5	353	11.5
Mid. Atlantic	1,409	24.2	731	23.8
So. Atlantic	426	7.3	254	8.3
E.So. Central	269	4.6	147	4.8
W.So. Central	272	4.7	149	4.9
E.No. Central	1,270	21.8	719	23.5
W.No. Central	732	12.6	353	11.5
Mountain	253	2/4.4	146	4.8
Pacific	458	7.9	211	6.9
U.S. total	5,817	100.0	3,063	100.0

1/ See figure 1 for the States included in each region.
2/ Rounded upwards by 0.1 percent for balancing purposes.

Table 55 presents a regional breakdown of the 1,638 usable schedules returned by sellers and nonsellers of low-fat milk.

For one reason or another, 1,072 plants included in the sample failed to return the schedule. A randomly selected list of 100 plants in this nonresponding group were contacted by telephone. These companies were asked why the schedule had not been returned, whether or not they sold low-fat milk as defined for survey purposes, whether or not they intended to sell the product in the future and why, and also their total 1962 fluid milk sales. A corporate representative was contacted at 71 of these 100 companies. However, 18 companies were either distributors or jobbers and not processors, while an additional 6 companies either refused to answer or did not have their 1962 total fluid milk sales figures available. Of the 100 companies, 29 could not be contacted because the organization had (1) merged with another company, (2) moved and left no forwarding address, (3) discontinued business, (4) had no telephone listing and could not be located by the telephone company operator, or (5) could not be contacted after three attempts.

Table 56 compares the results of the mail survey with those from the nonresponse check on the basis of information received from both sellers of low-fat milk and nonsellers, and for sellers only.

The nonresponse telephone check indicated the schedule was not returned two-thirds of the time because it was reported as not being received or its receipt could not be recalled. The remaining third failed to return the questionnaire for such reasons as "not interested or too busy," "misplaced questionnaire," or "did not complete because did not sell product." (table 57).

Personal Interviews of all Milk Processors--Five Selected Cities

The mail questionnaires were either reviewed with or collected from both sellers

Table 55.--Low-fat milk mail survey response by geographic region

Region	Plants in regional sample	Usable questionnaires	Usable questionnaires as percentage of regional sample	Sellers' returns	Sellers' returns as percentage of regional sample	Nonsellers' returns	Nonsellers' returns as percentage of regional sample
	Number	Number	Percent	Number	Percent	Number	Percent
New England	353	177	50.1	14	4.0	163	46.2
Mid. Atlantic ..	731	440	60.2	52	7.1	388	53.1
So. Atlantic ...	254	135	53.1	8	3.1	127	50.0
E.So. Central ..	147	87	59.2	26	17.7	61	41.5
W.So. Central ..	149	86	57.7	30	20.1	56	37.6
E.No. Central ..	719	330	45.9	162	22.5	168	23.4
W.No. Central ..	353	167	47.3	103	29.2	64	18.1
Mountain	146	87	59.6	60	41.1	27	18.5
Pacific	211	129	61.1	87	41.2	42	19.9
Total U.S.	3,063	1,638	---	542	---	1,096	---
Percentage of U.S. total	100.0	53.5	---	17.7	---	35.8	---

Table 56.--Comparison: Mail survey returns as compared with telephone nonresponse check by 1962 total sales category

Sales category 1962 sales	Total sellers and nonsellers				Sellers only			
	Number in mail survey	Percent total	Number in telephone nonresponse survey	Percent total	Number in mail survey	Percent total	Number in telephone nonresponse survey	Percent total
Under 400 million quarts	163	10.0	9	17.0	28	5.2	4	13.3
400 mil. qts. - 999 mil. qts.	270	16.5	11	20.8	49	9.0	4	13.3
1,000 mil. qts. - 4,999 mil. qts.	619	1/37.7	15	28.3	178	32.8	10	2/33.4
5,000 mil. qts. - 9,999 mil. qts.	233	14.2	5	9.4	119	22.0	4	13.3
Over 10,000 mil. qts.	286	17.5	7	13.2	162	29.9	3	10.0
No report	67	4.1	6	11.3	6	1.1	5	16.7
Total	1,638	100.0	53	100.0	542	100.0	30	100.0

1/ Rounded down 0.1 percent for balancing purposes.
2/ Rounded up 0.1 percent for balancing purposes.

and nonsellers of low-fat milk in 5 selected cities. Additional information relating marketing practices and costs, not included in the mail schedule, also was obtained from sellers of the low-fat product.

The five cities selected were (1) Wilmington, Del., (2) Milwaukee, Wis., (3) New Orleans, La., (4) Salt Lake City, Utah, and (5) San Francisco, Calif. Primary factors in selecting these cities were first, availability of fluid milk sales data by type; second, representativeness for a general geographic area; and finally, varied sales and consumption levels for the low-fat product between the cities.

Phase III

Phase III of the study involved conducting household consumption surveys in Milwaukee, Wis., and New Orleans, La. Objectives of this phase of the research project were to develop information from a representative group of consumers about (1) consumption of different types of milk by the family unit and by individual members, (2) frequency of purchase of milk and purposes for which used, (3) use of low-fat milk, related attitudes and opinions and product comparison with other types of milk, and (4) family type, age composition, and income, and education of household head as these relate to family use of milk.

Table 57.--Reported reasons for nonreturn of schedule

Reported reasons for not returning mail questionnaire	Number reporting	Percent of total	Under 400,000 quarts	400,000 to 999,999 quarts	1,000,000 to 4,999,999 quarts	5,000,000 to 9,999,999 quarts	Over 10 million quarts	Sales unknown
Questionnaire not received or receipt unknown	35	66.0	6	7	7	4	6	5
Too busy to complete or wasn't interested	3	5.7	1	1	1	0	0	
Given to subordinate who didn't complete	2	3.8	0	0	2	0	0	
Misplaced questionnaire or just didn't bother to complete	9	16.9	1	2	4	1	0	1
Didn't complete because did not sell product	2	3.8	1	0	1	0	0	
Questionnaire reported as returned	1	1.9	0	1	0	0	0	
No reason	1	1.9	0	0	0	0	1	
Total	53	100.0	9	11	15	5	7	6

United States Department of Agriculture
Economic Research Service
Marketing Economics Division
Market Potentials Branch

Budget Bureau No. 40-6321

Approval Expires 6/30/63

Schedule No.:_____

The information requested in this questionnaire will be held in confidence by the Economic Research Service of the United States Department of Agriculture. Information reported in the survey will be recorded and summarized in such a manner that neither the operation nor the name of an individual establishment or group of establishments can be identified.

A MARKETING STUDY ON LOW-FAT FLUID MILK

(Questionnaire 1)

A. Identification

Company:_____

Address:_____
(Administrative office) (Number) (Street) (City) (Zone) (State)

Name and title of person furnishing information:_____

Telephone number:_____

B. General Information

Note: For survey purposes, low-fat milk is defined as a fluid milk product whose butterfat level most frequently ranges between 1.5 and 2.5 percent either with or without the addition of nonfat solids. However, concentrated fluid milk, buttermilk, and flavored whole and skim milk products whose fat contents lie within these ranges are not to be considered as low-fat milk for this survey.

Under the term Whole Milk include Pasteurized Homogenized, and Vitamin Fortified Whole Milk. Under the term Skim Milk include fortified and non-fortified skim milk (except low-fat) and defatted milk. Exclude figures for buttermilk and chocolate milk or drink from any category listed.

1. (a) Does your company sell low-fat milk at wholesale, retail; or both?

/__/.....Yes
(If yes, please go to question 1 (b) (Page 2)

/__/.....No
(If no, please go to question number 12) (Page 6)

(b) Please identify the marketing area for which the data reported on this schedule will apply.

Market_____

(c) If the area for the specified market includes more than one State, i.e. portions of other States or State, are considered as part of the total marketing area, please furnish the names of this State or States.

_____

_____

_____

(If additional space is required, please enter on separate sheet and attach to schedule).

NOTE: Question 1 (d) is to be answered only by companies with more than one plant.

(d) Will the reported data be for (Please check one).

☐.....All plants and distribution branches in the specified market

☐.....All plants in a sales region or division

2. (a) When did you first introduce low-fat milk into the market? (Please specify month and year)

Month_____ Year_____

(b) How is the low-fat product generally identified in your marketing area? i.e. low-fat skim, modified skim, high fat skim, etc.
(Please specify)

_____

(c) What brand or trade name do you use for indentifying your low-fat product? Please list product name or names such as Hi-Pro, Hi-Vi, 2% Skim, etc., that you use. Not producer or company name, i.e., Doe's Dairy, All Pure Milk Co., etc._____

_____

3. Have local regulations prevented or limited your use of the name or a specific brand or trade name in any cities within your marketing area.

☐.....Yes ☐.....No

If yes, please identify the area and specify what was done to resolve the problem._____

_____

4. If your low-fat product contains added nonfat solids, please indicate the method by which the nonfat solids content was increased.

☐.....Nonfat dry solids added ☐.....Condensed skim added

☐.....Other (Please specify)

_____

C. Product Composition and Sales:

5. What is the composition of the low-fat milk commonly marketed by your company?

Item	Percent or Quantity Per Qt. Minimum	Maximum
Milk fat	_____%	_____%
Nonfat solids	_____%	_____%
Total solids	_____%	_____%
Vitamin fortification	_____%	_____%
"A"	U.S.P. units	U.S.P. units
"D"	U.S.P. units	U.S.P. units
Other (Please Specify)		
_____	_____	_____
_____	_____	_____

6. Please enter the percentage that each of the following products represented of your total fluid milk sales for the calendar year year 1962. (Do not include buttermilk, flavored skim milk, milk drinks or cream items in any of the categories shown).

Product	Percent of total fluid sales
Whole milk (legal minimum fat content and over) includes pasteurized, homogenized, with or without vitamin fortification, concentrated, etc.	_____
Low-fat milk (1.5 - 2.5% butterfat): Containing additional nonfat solids	_____
Not containing additional nonfat solids	_____
Skim milk (less than 1.5% butterfat): Containing additional non-fat solids	_____
Not containing additional non-fat solids	_____

7. Please indicate which marketing methods your company uses to distribute packaged fluid milk products.

Type of distribution	Percent of total 1962 fluid sales	Percent of total 1962 low-fat sales
a. ☐.....Home delivery	_____	_____

b. ☐.....Retail stores, restaurants industrial in-plant feeding establishments _____ _____

c. ☐.....Milk vending machines _____ _____

d. ☐.....Peddler-platform (sales to individuals who operate and maintain own delivery routes) _____ _____

e. ☐.....Dairy stores (company and privately owned) _____ _____

f. ☐.....Federal, State, and local institutions, military _____ _____

g. ☐.....Schools _____ _____

h. ☐.....Other (Please specify) _____ _____

_____ _____ _____
Total 100% 100%

8. Please estimate the proportion of your total 1962 sales of low-fat milk, that were distributed in:

Container size	Low-fat milk
a. Half pint	_____%
b. Pint	_____%
c. 1/3 quart	_____%
d. Quart	_____%
e. 1/2 gallon	_____%
f. Gallon	_____%
g. Other (Please specify)	_____%
Total	100%

9. What were the ranges in prices paid by consumers for your fluid products in your market (omit quantity discounts) during December 1962?

	Home delivered		Retail store	
Whole milk	Cents per quart	Cents per 1/2 gallon	Cents per quart	Cents per 1/2 gallon
Regular milk (pastuerized)	_____	_____	_____	_____
Homogenized-vitamin D	_____	_____	_____	_____
Low-fat milk				
Fortified with added solids	_____	_____	_____	_____
Not fortified with added solids	_____	_____	_____	_____

Skim milk

Fortified with added solids _____ _____ _____ _____

Not fortified with added solids _____ _____ _____ _____

10. What were your total fluid milk sales in the market area specified in 1 (b) for the calendar year 1962? (Please check one)

☐.....Under 400,000 quarts
☐.....400,000 to 999,999 quarts
☐.....1,000,000 to 4,999,999 quarts
☐.....5,000,000 to 9,999,999 quarts
☐.....Over 10,000,000 quarts

11. In order for the Department of Agriculture to make national and regional consumption estimates for low-fat milk in 1962, please furnish your 1962 sales for the following types of low-fat products in gallons or quarts rounded to the nearest 1,000 units of product. (Please specify units reported)

Low-fat milk with added solids_____

Low-fat milk without added solids_____

NOTE: Questions 12, 13, 14, and 15 are to be answered only by those processors who do not sell low-fat milk.

12. Are there any legislative or administrative barriers which prevent or limit the sale of low-fat milk in your marketing area?

☐.....Yes ☐.....No

If yes, please explain_____

_____

_____

_____

_____

13. If low-fat milk can be sold in your marketing area, is your company considering selling this product?

☐.....Yes ☐.....No

(Please give reasons)_____

_____

_____

_____

14. Has your company sold the low-fat product and discontinued its sale?

☐.....Yes ☐.....No

(If yes, please give reasons for discontinuing its sale)._____

_____

_____

15. What were your total fluid milk sales for the calendar year 1962? (Please check one)

☐.....Under 400,000 quarts
☐.....400,000 to 999,999 quarts
☐.....1,000,000 to 4,999,999 quarts
☐.....5,000,000 to 9,999,999 quarts
☐.....Over 10,000,000 quarts

This completes the information requested. Your cooperation in this study is sincerely appreciated. Please check to see if you have answered all applicable questions. Return the questionnaire in the enclosed self-addressed envelope which does not require a stamp. If you would like a copy of the final report, please check. ☐

Date_____

U. S. Department of Agriculture
Economic Research Service
Marketing Economics Division
Market Potentials Branch

Budget Bureau No. 40-6322

Approval Expires 9/30/63

Schedule No. _____

The information requested in this questionnaire will be held in confidence by the Economic Research Service of the United States Department of Agriculture. Data reported for the survey will be recorded and summarized in such a manner that neither the operation nor the name of an individual establishment or group of establishments can be identified.

A MARKETING STUDY ON LOW-FAT MILK

(Questionnaire 2)

A. Identification

Company: _____

Address: _____
(Administrative office) (Number) (Street) (City) (Zone) (State)

Name and title of person furnishing information: _____

Telephone number: _____

B. General Information

Note: For survey purposes, low-fat milk is defined as a fluid milk product whose butterfat level most frequently ranges between 1.5 and 2.5 percent either with or without the addition of nonfat solids. However, concentrated fluid milk, buttermilk, and flavored whole and skim milk products whose fat content lies within these ranges are not to be considered as low-fat milk for this survey.

Under the term Whole Milk include pastuerized, homogenized and vitamin fortified whole milk. Under the term Skim Milk include fortified and nonfortified skim milk (except low-fat) and defatted milk. Exclude figures for buttermilk and chocolate milk or drink from any category listed.

C. Sales, Manufacturing and Marketing Information

1. In 1962, what were your monthly sales in percentages by month of total annual sales, for the following fluid milk items:

Month	Low-fat milk	Skim milk (Other than low-fat)
Jan.	_____	_____
Feb.	_____	_____
Mar.	_____	_____

Month	Low-fat milk	Skim milk (Other than low-fat)
Apr.		
May		
June		
July		
Aug.		
Sept.		
Oct.		
Nov.		
Dec.		
Total	100%	100%

2. When did you first introduce low-fat milk into any part of your market? (Please specify month and year)

   Month_____ Year_____

3. What has been the sales pattern for your low-fat product since it was placed on the market: (Check one)

   a. /___/.....Sales account for a relatively small portion of total fluid sales and have not varied significantly from month to month or year to year.

   b. /___/.....Sales have generally increased.

   (Estimated percentage average annual increase or estimated total increase if product has been sold less than 2 years. Please specify number of months included). _____

   _____

   c. /___/.....Sales have generally declined
   (Estimated percentage average annual decrease or estimated total decrease if product has been sold less than 2 years. Please specify number of months included)._____

   _____

   d. /___/.....Sales have exhibited a varied pattern.

   (Please explain)_____

   _____

   _____

4. Was the total quantity for low-fat milk used to determine the percentages in question 1 higher, lower, or about the same as sold in 1961?

   a. Higher_____ Percent increase_____%

   b. Lower_____ Percent decrease_____%

c. About the same_____

5. In your opinion, what was the reason for this change or no change?

_____

_____

6. During the next year, do you expect your sales of low-fat milk to increase, decrease, or remain about the same? Please give your reasons.

/__/.....Increase /__/.....Decrease

/__/.....Remain about same.

_____

_____

_____

7. What method of procedure do you use to add solids not fat to the low-fat product?

a. /__/.....Skim milk powder b. /__/.....Add condensed skim

c. /__/.....Other (Specify)_____

8. Are there any specific production problems connected with the manufacture of low-fat milk?

/__/.....Yes /__/.....No

If yes, please state the nature of the problem_____

_____

_____

_____

9. What types of containers do you use to package fluid milk? (Please check all applicable boxes)

Container type	Estimated percent of total packed		
	Whole milk	Low-fat	Skim (other than low-fat)
a. /__/.....Glass	_____%	_____%	_____%
b. /__/.....Paper (including plastic coated).	_____%	_____%	_____%

c. /__/..... Plastic (other than coated paper). _____% _____% _____%

d. /__/..... Lined fibre carton (Plastic bag). _____% _____% _____%

e. /__/..... Metal _____% _____% _____%

f. /__/..... Other _____% _____% _____%

Total 100% 100% 100%

10. a. When you began selling low-fat milk, was the purchase of additional handling, processing, or other type of equipment necessary?

/__/..... Yes /__/..... No

If yes, please list the equipment and the approximate year installed:

Item	Year Installed
_____	_____
_____	_____
_____	_____

10. b. Were any additional employees required when you began selling low-fat milk?

/__/..... Yes /__/..... No

If yes, please specify number by position classification or title and weekly salary cost.

Classification	Number added	Salary per week
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

11. Currently, are any discounts or particular incentives such as retail driver salesmen bonuses, applicable to the sales of low-fat milk that are not applied to your other fluid sales?

/__/..... Yes /__/..... No

If yes, please specify type_____

_____

_____

_____

12. When you began selling low-fat milk, was an additional wholesale allowance for promotional purposes allowed?

/___/..... Yes /___/..... No

If yes, please specify type of allowances used and period of use, i.e., 1 week, 1-4 weeks, etc.

_____

_____

_____

13. Currently, does your company have a special promotional program for low-fat milk?

/___/..... Yes /___/..... No

If yes, please check all applicable methods.

a. /___/..... Radio

b. /___/..... Television

c. /___/..... Newspapers

d. /___/..... Point of sale

e. /___/..... Home delivery materials

f. /___/..... In-store sampling

g. /___/..... Dealer ads

h. /___/..... Direct mail

i. /___/..... Doctor detailing

j. /___/..... Other _____

_____

14. What was the amount spent and the percentage of your promotional or advertising budget that was allocated to whole milk as compared with low-fat milk in 1960, 1961, and 1962?

Year	Total spent for advertising	Whole milk	Low-fat milk
1960	$_____	_____%	_____%
1961	$_____	_____%	_____%
1962	$_____	_____%	_____%

15. In your opinion, what are the main problems for you to overcome in order to increase the sales of low-fat milk?

_____

_____

_____

_____

16. Based on your company's experience selling low-fat milk, what impact has it had on your sales of other fluid milks and total fluid milk sales (Please check those applicable).

a. /__/..... Lowered packaged whole milk sales

b. /__/..... Lowered packaged skim milk sales

c. /__/..... Lowered both whole and skim milk sales but increased total fluid packaged sales

d. /__/..... Lowered packaged skim milk sales but raised packaged whole milk and total packaged milk sales

e. /__/..... No descernible impact on packaged whole milk, skim milk, or total packaged milk sales

f. /__/..... Other (Please explain)_____

_____

_____

Interviewer:

This completes the information requested. Please check to see that you have answered all applicable questions.

Date_____

NONRESPONSE TELEPHONE CHECK

LOW-FAT FLUID MILK STUDY

1. Company: _____ Code No. _____

2. Address: _____

3. Name of Person Contacted: _____

   Title or Position: _____

4. Telephone Number: _____

5. Stated reason for not answering or returning low-fat milk survey questionnaire: _____

_____

_____

_____

_____

_____

6. Company sell low-fat product (1.5 - 2.5 percent butterfat with or without added solids)?

   /__/..... Yes /__/..... No

   If no, are they planning to sell low-fat product in future?

   /__/.... Yes /__/.... No

7. What were company's total fluid milk sales for calendar year 1962?

   /__/..... Under 400,000 quarts

   /__/..... 400,000 - 999,999 quarts

   /__/..... 1,000,000 - 4,999,999 quarts

   /__/..... 5,000,000 - 9,999,999 quarts

   /__/..... Over 10,000,000 quarts

. . . . . .
. With the exception of check-box material, .
. office-record information, and free-answer. .
. space, the questionnaire used for this .
. study is reproduced below. Data from a .
. few of these questions have been omitted .
. from tables and text because the numbers .
. of responses involved were too small to be. .
. significant. .
. . . . . .

U.S. Department of Agriculture
Statistical Reporting Service
Standards and Research Division
Special Surveys Branch

Budget Bureau No. 40-6336
Expiration date July 31, 1963

SURVEY AMONG HOUSEHOLD RESPONDENTS TO DETERMINE CONSUMER PREFERENCES AND CONSUMPTION PATTERNS FOR VARIOUS TYPES OF MILK

INTRODUCTION

Hello, my name is _____. I am from the U.S. Department of Agriculture. We are making a survey of milk consumption in this area. I'd like to talk to the person in your household who is responsible for buying the food.

First, I'd like to ask you a few questions about the kinds of milk that you use in your home:

Don't use milk at home (Skip to Q. 87)

As far as REGULAR WHOLE MILK is concerned:

1. Last week, about how many quarts did you use?
   IF 4 QTS. OR MORE - (Skip to Q. 10)
   IF 1, 2, 3, QTS - (Go to Q. 2)
   IF NONE - (Skip to Q. 3)

1, 2, 3, QUARTS
2. Why don't you use it more often? (Skip to Q. 10)

NONE
3. Do you ever use regular whole milk? IF YES - (Skip to Q. 8)

IF NO
4. Have you used any in the last 5 years? IF NO - (Skip to Q. 10)

IF YES
5. When did you last use it?
6. Why did you stop using it?
7. Do you feel you are using anything in place of it now? IF YES - What? (Skip to Q. 10)

IF YES
8. About how often?
9. Why don't you use it more often?

As far as CHOCOLATE MILK is concerned:

10. Last week, about how many quarts did you use?
IF 4 QTS. OR MORE - (Skip to Q. 18)
IF 1, 2, 3 QTS. - (Go to Q. 11)
IF NONE - (Skip to Q. 12)

1, 2, 3 QUARTS
11. Why don't you use it more often? (Skip to Q. 18)

NONE
12. Do you ever use chocolate milk? IF YES (Skip to Q. 16)
IF NO
13. Have you used any in the last 5 years? IF NO - (Skip to Q. 18)
IF YES
14. When did you last use it?
15. Why did you stop using it? (Skip to Q. 18)

IF YES
16. About how often?
17. Why don't you use it more often?

As far as BUTTERMILK is concerned:

18. Last week, about how many quarts did you use?
IF 4 QTS. OR MORE - (Skip to Q. 26)
IF 1, 2, 3 QTS - (Go to Q. 19)
IF NONE - (Skip to Q. 20)

1, 2, 3 QUARTS
19. Why don't you use it more often? (Skip to Q. 26)

NONE
20. Do you ever use buttermilk? IF YES - (Skip to Q. 24)
IF NO
21. Have you used any in the last 5 years? IF NO - (Skip to Q. 26)
IF YES
22. When did you last use it?
23. Why did you stop using it? (Skip to Q. 26)

IF YES
24. About how often?
25. Why don't you use it more often?

As far as NONFAT DRY OR POWDERED MILK is concerned (that is, after it is made up into liquid form):

26. Last week, about how many quarts did you use?
IF 4 QTS. OR MORE - (Skip to Q. 35)
IF 1, 2, 3 QTS. - (Go to Q. 27)
IF NONE - (Skip to Q. 28)

1, 2, 3 QUARTS
27. Why don't you use it more often? (Skip to Q. 35)

NONE
28. Do you ever use nonfat dry or powdered milk? IF YES - (Skip to Q. 33)
IF NO
29. Have you used any in the last 5 years? IF NO - (Skip to Q. 35)
IF YES
30. When did you last use it?

31. Why did you stop using it?
32. Do you feel you are using anything in place of it now?
IF YES - What? (Skip to Q. 35)
33. About how often?
34. Why don't you use it more often?

As far as SKIM MILK is concerned:

35. Last week, about how many quarts did you use?
IF 4 QTS. OR MORE - (Skip to Q. 44)
IF 1, 2, 3 QTS. - (Go to Q. 36)
IF NONE - (Skip to Q. 37)

1, 2, 3 QUARTS
36. Why don't you use it more often? (Skip to Q. 44)

NONE
37. Do you ever use skim milk? IF YES - (Skip to Q. 42)
IF NO
38. Have you used any in the last 5 years? IF NO - (Skip to Q. 44)
IF YES
39. When did you last use it?
40. Why did you stop using it?
41. Do you feel you are using anything in place of it now?
IF YES - What? (Skip to Q. 44)
IF YES
42. About how often?
43. Why don't you use it more often?

As far as 2 PERCENT MILK/THESE LOW-FAT MILKS are concerned:

44. Last week, about how many quarts did you use?
IF 4 QTS. OR MORE - (Skip to Q. 55)
IF 1, 2, 3 QTS. - (Go to Q. 45)
IF NONE - (Skip to Q. 46)

1, 2, 3 QUARTS
45. Why don't you use it more often? (Skip to Q. 55)

NONE
46. Do you ever use 2 percent milk/any of them? IF YES - (Skip to Q. 51)
IF NO
47. Have you used any in the last 5 years? IF NO - (Skip to Q. 53)
IF YES
48. When did you last use it?
49. Why did you stop using it?
50. Do you feel you are using anything in place of it now?
IF YES - What? (Skip to Q. 55)
IF YES
51. About how often?
52. Why don't you use it more often? (Skip to Q. 55)

53. Have you ever heard of 2 percent milk/any of them? IF YES - (Skip to Q. 55)

IF NO

54. What do you think 2 percent/low-fat milk is? (Skip to Q. 74)

55. Do you know whether or not 2 percent milk is/any of them are sold: (a) In grocery stores? (b) By dairy route delivery? (c) In specialty stores? (d) In restaurants?

56. Is 2 percent milk/are any of these milks sold at the place where you regularly buy your other milk?

57. (IF NO) Would you buy it, or buy more of it, if it were sold in the place where you regularly buy your other milk?

58. When you have guests come to your home for a meal, do you sometimes serve milk to them?

59. (IF YES) If you knew 2 or 3 days ahead of time that guests were coming for a meal, what kind of milk would you serve them?

TO BE ASKED ONLY OF RESPONDENTS WHO HAVE USED 2 PERCENT/LOW-FAT MILK IN THE LAST 6 MONTHS

Now, I would like to talk to you about your experience and opinions with regard to 2 percent milk/these low-fat milks. For instance:

60. Why do you use 2 percent/low-fat milk?

61. When did you first try 2 percent/low-fat milk?

62. Why did you try 2 percent/low-fat milk in the first place?

63. Where did you first learn about 2 percent/low-fat milk?

64. What was said about 2 percent/low-fat milk?

65. Since you started using 2 percent/low-fat milk, do you think it has replaced some other product in your home?

66. (IF YES) What other product has it replaced?

67. Do you think you are using more or less 2 percent/low-fat milk than you did the other product? IF ABOUT THE SAME - (Skip to Q. 69)

68. Do you have any idea how much (more or less) in terms of percent?

69. If 2 percent milk/these low-fat milks were no longer sold in your area, do you think you would: (USE FLASH CARD) Use more skim milk? Use more nonfat dry milk? Use more regular whole milk? Stop drinking milk? Use something else? If something else, what?

70. If you did use more (kind) milk, do you think you would use more, less, or about the same amount of it that you use of 2 percent/low-fat milk?

71. (IF MORE OR LESS) About how much (more or less) in terms of percent?

72. Incidentally, about how much do you pay for a quart of 2 percent/low-fat milk?

73. Considering the price of regular whole milk, do you think this price is about right, or do you think it is too high or too low? (IF TOO HIGH OR LOW) What should the price per quart be?

TO BE ASKED OF RESPONDENTS WHO ARE CURRENTLY USING REGULAR WHOLE MILK AND EITHER NONFAT DRY OR POWDERED, OR SKIM MILK

74. Do you or does any member of your family ever mix (nonfat dry, powdered, or skim) milk with regular whole milk? IF NO - (Skip to Q. 77)

75. For what purposes do you (or the other person) use this mixed milk?

76. Why is it that you (or the other person) use this mixed milk?

77. (IF RESPONDENT BUYS NONFAT DRY OR POWDERED MILK) What size box of dry milk do you usually buy?
IF RESPONDENT DOESN'T KNOW, ASK FOR BRAND NAME AND BEST ESTIMATE OF SIZE.)

TO BE ASKED OF ALL RESPONDENTS WHO HAVE USED EACH MILK DURING THE PREVIOUS WEEK

78. You said that you use (kinds of milk that respondents uses). In what way do you use most of it; for instance, do you use it most for cooking or baking, on cereals, drinking, in coffee or tea, or any other way? In what way do you use it next most, next most in any other way? (INDICATE RANK ORDER BY USE OF 1, 2, 3, 4 BELOW. SPECIFY OTHER.)
79. Now I would like you to tell me where you buy (kind) milk?
80. Why do you buy it at this particular place? (ASK FOR EACH SOURCE.)

TO BE ASKED OF ALL RESPONDENTS WHO USE MILK

81. Now, I'd like to know the kinds of things that you and your family like or dislike about different kinds of milk. First, what do you like about (kind) milk?
82. What do you dislike about (kind) milk?
83. Now, I'd like to list everyone in your household in terms of their relationship to you, beginning with yourself. (THEN ASK FOR HUSBAND, UNMARRIED CHILDREN IN ORDER OF THEIR AGE, MARRIED CHILDREN AND THEIR FAMILIES, OTHER RELATIVES, AND OTHER PERSONS EATING IN THE HOUSEHOLD.)
84. (FOR EACH PERSON LISTED ASK AGE AT LAST BIRTHDAY.)
85. Now, beginning with yourself, what kind of milk do you drink at meals away from home? At home meals? For snacks whether at home or away from home?
86. What meal (or meals) do you eat away from home at least three times a week? (ASK Q. 84 AND Q. 85 FOR EACH MEMBER OF THE HOUSEHOLD.)

TO BE ASKED OF RESPONDENTS WHO DO NOT USE ANY KIND OF MILK AT ALL

87. Different people have different reasons for not buying a particular product. What is the reason why you and your family do not use any milk?

TO BE ASKED OF ALL RESPONDENTS

88. Are you or is any member of your family on any sort of a diet at the present time?
89. (IF YES) Which persons? (ENTER RELATIONSHIP TO RESPONDENT)
What kind of diet is he (or she) on?
90. While many people are not on a strict diet for either gaining or losing weight, does any member of your family watch his (or her) weight so as not to gain weight or so as not to lose weight?
91. Now we'd like an idea of what you think the calories are in different kinds of milk. If a glass of regular milk contains 165 calories, do you think this is more, or less, or the same as the calories in a glass of (kind) milk?

Now I would like to ask just a few questions about your family. This information will help us to compare the answers of different kinds of people.

92. What is the last grade of school completed by the head of the household?
93. What is the last grade of school that you completed?
94. (HAND RESPONDENT INCOME CARD) What was the total family income in 1962? a. $0-1,999 b. $2,000-3,999 c. $4,000-5,999 d. $6,000-7,999 e. $8,000-9,999 f. $10,000 or more.