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Packaged Fluid Milk Sales in Federal Milk Order Markets:

By Size and Type of Container And Distribution Method During November 1999

PREFACE

This publication presents information relating to the containers in which fluid milk products are sold, and the methods of distribution used to market these items by handlers regulated under Federal milk marketing orders. The information in this report is based on a survey of fluid milk sales under Federal milk marketing orders during November 1999. Its purpose was to update a similar survey in November 1997, and to see if trends observed in past surveys are continuing. Data were obtained from milk handlers regulated under 30 marketing orders.

Handlers regulated under Federal milk orders process approximately three-quarters of all the fluid milk products sold in the United States. In general, the sizes and types of containers, and methods of distribution used to market this production would be representative of the entire country. In addition, although these surveys are based on November fluid milk sales, the relationships shown would be representative in other months of the year. Two exceptions would be sales in half-pint containers and sales through school outlets which would not be applicable to sales in a nonschool month.

The tables in this report provide historical information from past surveys and detailed information from the current survey. Information is presented for groups of orders and for all orders combined. The data in this report are percentages of total fluid milk products sold by regulated handlers. The number of each size of container can be approximated by using the additional information as shown in the appendices at the end of the report.

This is the twenty-first report in a series. Similar data have been distributed based on surveys made in November 1963 through 1967, 1969, and every other year through 1997.

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SURVEY HIGHLIGHTS

Some highlights of this survey with comparisons to previous years are:

- (1) The proportion of total fluid milk products sold in plastic containers increased, continuing the long-term trend in evidence since this survey was first taken in 1963. The 2.4 percentage point increase pushed the market share of plastic to 81 percent. Sales of fluid milk in paper containers accounted for 18.8 percent of total sales, while glass containers accounted for 0.2 percent of total sales. (See table 1.)
- (2) The proportion of total fluid milk products sold in plastic increased significantly for nearly all container sizes. While the market shares of the smaller than half-gallon plastic containers are relatively small, the increases in these shares from November 1997 are dramatic. The volume of fluid milk products sold in plastic pints increased by more than 325 percent from November 1997. The market share of plastic half-pints tripled. The single-serve, round (milk bottle shaped) container likely contributed largely to these increases. The market share in larger plastic sizes also increased; quarts more than doubled, half-gallons jumped to over 12 percent of total sales. (See table 3.)
- (3) In all regions of the country, more fluid milk products were sold in plastic containers than in paper and glass combined. Market shares of plastic ranged from 71.3 percent in the Northeast group of orders to 91.6 percent in the Florida group. Glass containers were used in 5 of the 9 regions and accounted for 1 percent or less of total sales. (See table 4.)
- (4) Plastic containers accounted for nearly 80 percent or more of the sales of whole milk, reduced fat (2%) milk, low fat (1%) milk, and fat-free (skim) milk. Conversely, about 74 percent of the sales of flavored fat-reduced milk were sold in paper containers. More flavored whole milk was sold in plastic than in paper for the first time. (See table 3.)
- (5) The market share of total fluid milk products sold in gallons decreased to 64.5 percent, the first such change in the time period covered by the surveys. Conversely, the market share of half-gallon containers remained 18.0 percent. About 10.1 percent of total sales were made in half-pint containers up about 1 percentage point from the previous survey. More fluid milk products also were sold in pint containers. (See tables 2 and 3.)
- (6) For nearly all container sizes, plastic accounted for larger proportions of total sales. While plastics' share of gallons remained at 99.9 percent, plastics' share of half-gallons increased by 10 percentage points to 67.4 percent. For pint containers, the share sold in plastic increased by 40.6 percentage points to 59.3 percent; the single-serve, round (milk bottle shaped) container likely contributed largely to this increase. The plastic share of quarts increased by 13.1 percentage points and for "other" sizes, increased 11.8 percentage points. (See table 3.)

- (7) In all regions of the country, a larger proportion of total fluid milk products were sold in gallon containers than in all other sizes combined. The market share of gallons ranged from 52.2 percent in the Northeast group of orders to 71.8 percent in the Western group. The proportion of fluid milk products sold in half-pint containers was significantly larger in the Southeast. In the Northeast, quarts accounted for twice the national average. (See table 4.)
- (8) Gallon containers accounted for much larger proportions of the sales of whole milk, reduced-fat milk (2%), low fat (1%) milk, and fat-free (skim) milk. On the other hand, about 61 percent of the sales of flavored whole milk and nearly 76 percent of the sales of flavored fat-reduced milk were made in pint and half-pint containers. These market shares might be expected as the sales of these flavored milk products are made predominantly through schools and other food service outlets. Much more buttermilk was sold in half-gallon containers than in other sizes. (See table 3.)
- (9) This is the first survey in which single-serve, round plastic containers were reported separately. In November 1999, these containers accounted for 1.6 percent of total fluid milk product sales. On a regional basis, single-serve round plastic containers ranged from 3.2 percent of total fluid milk product sales in the Southeast to 0.9 percent in the Western group of orders. Pints accounted for 62 percent of the sales of this type of container, half-pints about 36 percent, and other sizes about 2 percent. Of the total sales of fluid milk products in plastic pints and half-pints, 82 and 65 percent, respectively, were in these single-serve round plastic containers. (See table 5.)
- (10) The proportion of fluid milk products sold through wholesale outlets remained steady at 99.5 percent. The market share of wholesale had increased with each successive survey in this series. The remaining 0.5 percent was home-delivered. (See table 6.)
- (11) The most important wholesale outlet continues to be food chain stores, which accounted for nearly two-thirds of total fluid milk sales. However, the market share of this wholesale distribution method did drop 1.3 percentage points in the current survey. Fluid milk sales through institutional outlets (military and schools) totaled 7.6 percent of total sales, up moderately from 1997. Sales through all other wholesale outlets accounted for 25.4 percent of total sales, up from 1997. (See table 6.)
- (12) The food chain store method of distribution is further broken down into supermarkets and dairy/convenience stores. Sales of fluid milk products through supermarkets accounted for 57 percent of total sales, down about 0.6 percentage points from 1997. On a regional basis, the supermarkets market share ranged from 50 percent in the Upper Midwest group of orders to 67.1 percent in the Appalachian group. Sales of fluid milk products through dairy/convenience stores accounted for 9.5 percent of total sales, down 0.7 percentage points. A much larger proportion of fluid milk sales occurred at this method of distribution in the Northeast group of orders. (See table 7.)

- (13) The market share of vertically integrated food chain stores totaled 18.8 percent, down from 19.7 percent in 1997. Sales by vertically integrated supermarket chains accounted for 17.3 percent of total sales, while dairy/convenience store chains accounted for 1.5 percent. Vertical integration of food chains showed significant regional variation. In the Southwest/Western combined group of orders one-third of total fluid milk sales were made by vertically integrated food chains. There was virtually no vertical integration in the Upper Midwest group. Vertically integrated supermarket chains accounted for over 90 percent of food chain store vertical integration and also showed significant regional variation. The market share of vertically integrated dairy/convenience chains in the Northeast group of orders was 4.7 percent, well above the national average of 1.5 percent. (See table 8.)
- (14) Schools were the predominant institutional outlet. Sales of total fluid milk products through elementary, high school, and college outlets totaled 6.8 percent, 0.5 percentage points above 1997. On a regional basis, the market share of schools ranged from 10.1 percent in the Southeast group of orders to 3.5 percent in the Western group. Sales of fluid milk products through military installations totaled 0.8 percent. (See table 7.)
- (15) This is the first survey in which information was collected for some of the outlets that have been included in all other wholesale, namely superstores/hypermarkets and warehouse stores/wholesale clubs. Sales of fluid milk products through superstores/hypermarkets accounted for 3 percent of total sales and ranged from 5.2 percent in the Central group of orders to 1.1 percent in the Northeast group. The market share of warehouse stores/wholesale clubs was 1.6 percent and ranged from 2.5 percent in the Central group of orders to zero in the Appalachian group. (See table 9.)

While there is no historical data for these methods of distribution in this series of surveys, sales through these methods may account for the decrease in the food chain stores market share that occurred in the current survey.

Table 1—Percentage of Total Fluid Milk Products Sold by Type of Container, by Handlers Regulated Under Federal Milk Orders, November of Selected Years, 1963-1999 ^{1/}

| Year | Type of container | | | | |
|------|-------------------|-------|---------------|---------------------|-------|
| | Glass | Paper | Plastic | Other ^{2/} | Total |
| | Percent | | | | |
| 1963 | 32 | 63 | ^{3/} | 5 | 100 |
| 1967 | 20 | 71 | 8 | 1 | 100 |
| 1971 | 7 | 78 | 15 | ^{4/} | 100 |
| 1975 | 2 | 67 | 31 | ^{4/} | 100 |
| 1979 | 1 | 49 | 50 | ^{4/} | 100 |
| 1983 | ^{4/} | 38 | 62 | ^{4/} | 100 |
| 1987 | ^{4/} | 33 | 67 | ^{4/} | 100 |
| 1991 | ^{4/} | 28 | 72 | ^{4/} | 100 |
| 1995 | ^{4/} | 24 | 76 | ^{4/} | 100 |
| 1997 | ^{4/} | 21 | 79 | ^{4/} | 100 |
| 1999 | ^{4/} | 19 | 81 | 0 | 100 |

^{1/} The figures in the table are based on the total sales volume in all orders combined. See Appendix Table 1 for the applicable sales volume and fluid milk products included.

^{2/} Percentages represent metal cans and plastic bag-in-box containers in 1963; metal cans only, 1967 to date.

^{3/} Data were reported as "Other".

^{4/} Less than 0.5 percent.

Table 2—Percentage of Total Fluid Milk Products Sold by Size of Container, by Handlers Regulated Under Federal Milk Orders, November of Selected Years, 1963-1999 ^{1/}

| Year | Size of container | | | | | | | |
|------|-------------------|-------------|-------|------|-----------|-----------------|---------------|-------|
| | Gallon | Half-gallon | Quart | Pint | Half-pint | Over 10 quarts | Other | Total |
| | Percent | | | | | | | |
| 1963 | 13 | 56 | 15 | 1 | 9 | 5 ^{2/} | 1 | 100 |
| 1967 | 19 | 53 | 9 | 1 | 11 | 5 | 2 | 100 |
| 1971 | 29 | 44 | 10 | 1 | 11 | 3 | 2 | 100 |
| 1975 | 43 | 34 | 7 | 1 | 11 | 3 | 1 | 100 |
| 1979 | 53 | 26 | 5 | 1 | 11 | 3 | 1 | 100 |
| 1983 | 58 | 23 | 5 | 1 | 10 | 3 | ^{3/} | 100 |
| 1987 | 60 | 21 | 5 | 2 | 10 | 2 | ^{3/} | 100 |
| 1991 | 64 | 19 | 4 | 1 | 9 | 2 | ^{3/} | 100 |
| 1995 | 64 | 18 | 4 | 2 | 10 | 2 | ^{3/} | 100 |
| 1997 | 66 | 18 | 4 | 2 | 9 | 1 | ^{3/} | 100 |
| 1999 | 65 | 18 | 4 | 2 | 10 | 1 | ^{3/} | 100 |

^{1/} The figures in the table are based on the total sales volume in all orders combined. See Appendix Table 1 for the applicable sales volume and fluid milk products included.

^{2/} Includes "5-10 quart" containers.

^{3/} Less than 0.5 percent.

Table 3—Percentage of Individual and Total Fluid Milk Products Sold by Size and Type of Container, by Handlers Regulated Under Federal Milk Orders, November 1999 ^{1/}

| Size of container ^{2/} | Type of container | | | |
|---------------------------------|------------------------------|-------|---------|--------------------|
| | Glass | Paper | Plastic | Total of all types |
| | Percent | | | |
| | <u>Whole milk</u> | | | |
| Gallon | | 0.1 | 70.5 | 70.6 |
| Half-gallon | 0.1 | 4.9 | 12.4 | 17.4 |
| Quart | <u>3/</u> | 2.8 | 0.7 | 3.5 |
| Pint | <u>3/</u> | 0.7 | 1.0 | 1.6 |
| Half-pint | <u>3/</u> | 5.2 | 0.4 | 5.5 |
| 6-Gallon | | | 0.4 | 0.4 |
| 5-Gallon | | | 0.7 | 0.7 |
| All other sizes | | 0.2 | 0.1 | 0.3 |
| Total of all sizes | 0.2 | 13.7 | 86.1 | 100.0 |
| | <u>Flavored whole milk</u> | | | |
| Gallon | | | 1.6 | 1.6 |
| Half-gallon | 0.2 | 5.0 | 13.1 | 18.3 |
| Quart | 0.4 | 9.6 | 6.9 | 16.8 |
| Pint | 0.1 | 18.5 | 27.9 | 46.5 |
| Half-pint | <u>3/</u> | 7.3 | 7.5 | 14.7 |
| 6-Gallon | | | 0.2 | 0.2 |
| 5-Gallon | | | 0.5 | 0.5 |
| All other sizes | | 0.9 | 0.5 | 1.4 |
| Total of all sizes | 0.7 | 41.2 | 58.2 | 100.0 |
| | <u>Reduced fat (2%) milk</u> | | | |
| Gallon | | 0.1 | 73.3 | 73.4 |
| Half-gallon | 0.2 | 4.1 | 10.6 | 14.8 |
| Quart | <u>3/</u> | 1.5 | 0.4 | 1.8 |
| Pint | | 0.2 | 0.4 | 0.6 |
| Half-pint | | 6.3 | 0.5 | 6.8 |
| 6-Gallon | | | 0.2 | 0.2 |
| 5-Gallon | | | 1.9 | 1.9 |
| All other sizes | | 0.3 | 0.2 | 0.5 |
| Total of all sizes | 0.2 | 12.5 | 87.4 | 100.0 |

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Table 3—Percentage of Individual and Total Fluid Milk Products Sold by Size and Type of Container, by Handlers Regulated Under Federal Milk Orders, November 1999 1/--continued

| Size of container <u>2</u> / | Type of container | | | |
|------------------------------|----------------------------------|------------|------------|--------------------|
| | Glass | Paper | Plastic | Total of all types |
| | Percent | | | |
| | <u>Low fat (1%) milk</u> | | | |
| Gallon | | 0.1 | 64.4 | 64.5 |
| Half-gallon | 0.2 | 7.3 | 13.5 | 21.0 |
| Quart | 0.1 | 2.5 | 0.5 | 3.0 |
| Pint | | 0.4 | 0.1 | 0.5 |
| Half-pint | | 9.3 | 0.6 | 9.9 |
| 6-Gallon | | | <u>3</u> / | <u>3</u> / |
| 5-Gallon | | | 0.7 | 0.7 |
| All other sizes | | 0.3 | 0.2 | 0.4 |
| Total of all sizes | 0.3 | 19.8 | 80.0 | 100.0 |
| | <u>Fat-free (skim) milk</u> | | | |
| Gallon | | 0.1 | 67.0 | 67.1 |
| Half-gallon | 0.4 | 8.1 | 14.4 | 22.8 |
| Quart | <u>3</u> / | 2.8 | 0.6 | 3.5 |
| Pint | <u>3</u> / | 0.3 | 0.2 | 0.4 |
| Half-pint | | 3.7 | 0.3 | 4.0 |
| 6-Gallon | | | 0.1 | 0.1 |
| 5-Gallon | | | 1.5 | 1.5 |
| All other sizes | | 0.3 | 0.2 | 0.6 |
| Total of all sizes | 0.4 | 15.3 | 84.3 | 100.0 |
| | <u>Flavored fat-reduced milk</u> | | | |
| Gallon | | <u>3</u> / | 7.4 | 7.4 |
| Half-gallon | 0.1 | 3.6 | 5.8 | 9.5 |
| Quart | <u>3</u> / | 3.3 | 1.2 | 4.5 |
| Pint | <u>3</u> / | 1.8 | 3.6 | 5.4 |
| Half-pint | | 64.2 | 6.0 | 70.2 |
| 6-Gallon | | | <u>3</u> / | <u>3</u> / |
| 5-Gallon | | | 1.8 | 1.8 |
| All other sizes | | 0.8 | 0.4 | 1.2 |
| Total of all sizes | 0.2 | 73.8 | 26.1 | 100.0 |

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Table 3—Percentage of Individual and Total Fluid Milk Products Sold by Size and Type of Container, by Handlers Regulated Under Federal Milk Orders, November 1999 1--continued

| Size of container <u>2</u> / | Type of container | | | |
|------------------------------|----------------------------------|------------|---------|--------------------|
| | Glass | Paper | Plastic | Total of all types |
| | Percent | | | |
| | <u>Buttermilk</u> | | | |
| Gallon | | 0.3 | 9.8 | 10.0 |
| Half-gallon | <u>3</u> / | 31.5 | 30.0 | 61.5 |
| Quart | <u>3</u> / | 19.3 | 3.8 | 23.1 |
| Pint | | 1.0 | 0.4 | 1.4 |
| Half-pint | | 2.2 | 0.1 | 2.3 |
| 6-Gallon | | | 0.1 | 0.1 |
| 5-Gallon | | | 1.4 | 1.4 |
| All other sizes | | <u>3</u> / | 0.4 | 0.4 |
| Total of all sizes | 0.1 | 54.1 | 45.8 | 100.0 |
| | <u>Total fluid milk products</u> | | | |
| Gallon | | 0.1 | 64.4 | 64.5 |
| Half-gallon | 0.2 | 5.7 | 12.1 | 18.0 |
| Quart | <u>3</u> / | 2.7 | 0.8 | 3.5 |
| Pint | <u>3</u> / | 0.8 | 1.2 | 2.0 |
| Half-pint | | 9.2 | 0.9 | 10.1 |
| 6-Gallon | | | 0.2 | 0.2 |
| 5-Gallon | | | 1.3 | 1.3 |
| All other sizes | | 0.3 | 0.2 | 0.5 |
| Total of all sizes | 0.2 | 18.8 | 81.0 | 100.0 |

1/ The figures in the table are based on the total sales volume for the product in all orders combined. See Appendix Table 1 for applicable sales volume; see Appendix Table 2 for orders included. Totals may not add due to rounding.

2/ Five-gallon and six-gallon containers listed under plastic are mostly bag-in-box units.

3/ Less than 0.05 percent.

Table 4—Percentage of Total Fluid Milk Products Sold by Size and Type of Container, by Handlers Regulated Under Federal Milk Orders, for Selected Order Groups, November 1999 ^{1/}

| Size of container ^{2/} | Type of container | | | |
|---------------------------------|--------------------|-----------|-----------|--------------------|
| | Glass | Paper | Plastic | Total of all types |
| | Percent | | | |
| | <u>Appalachian</u> | | | |
| Gallon | | | 70.6 | 70.6 |
| Half-gallon | | 0.1 | 15.0 | 15.1 |
| Quart | | 1.7 | <u>4/</u> | 1.7 |
| Pint | | 1.5 | 0.6 | 2.1 |
| Half-pint | | 10.0 | <u>4/</u> | 10.0 |
| 6-Gallon | | | | |
| 5-Gallon | | | | |
| All other sizes | | | 0.6 | 0.6 |
| Total of all sizes | | 13.2 | 86.8 | 100.0 |
| | <u>Central</u> | | | |
| Gallon | | | 69.3 | 69.3 |
| Half-gallon | <u>3/</u> | 3.4 | 9.9 | 13.3 |
| Quart | | 2.0 | 0.1 | 2.1 |
| Pint | | 0.8 | 0.9 | 1.7 |
| Half-pint | | 10.3 | 1.1 | 11.4 |
| 6-Gallon | | | <u>3/</u> | <u>3/</u> |
| 5-Gallon | | | 2.0 | 2.0 |
| All other sizes | <u>4/</u> | 0.2 | <u>4/</u> | 0.2 |
| Total of all sizes | <u>4/</u> | 16.7 | 83.2 | 100.0 |
| | <u>Florida</u> | | | |
| Gallon | | | 63.8 | 63.8 |
| Half-gallon | | <u>3/</u> | 21.8 | 21.8 |
| Quart | | 0.3 | 1.2 | 1.5 |
| Pint | | 1.0 | 0.7 | 1.7 |
| Half-pint | | 7.0 | 3.8 | 10.7 |
| 6-Gallon | | | <u>3/</u> | <u>3/</u> |
| 5-Gallon | | | <u>3/</u> | <u>3/</u> |
| All other sizes | | 0.1 | 0.4 | 0.5 |
| Total of all sizes | | 8.4 | 91.6 | 100.0 |

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Table 4—Percentage of Total Fluid Milk Products Sold by Size and Type of Container, by Handlers Regulated Under Federal Milk Orders, for Selected Order Groups, November 1999 1--continued

| Size of container <u>2</u> / | Type of container | | | |
|------------------------------|-------------------|------------|------------|--------------------|
| | Glass | Paper | Plastic | Total of all types |
| | Percent | | | |
| | <u>Mideast</u> | | | |
| Gallon | | <u>3</u> / | 69.1 | 69.1 |
| Half-gallon | <u>4</u> / | 3.2 | 11.3 | 14.5 |
| Quart | <u>3</u> / | 2.3 | 0.8 | 3.1 |
| Pint | | 0.5 | 1.3 | 1.8 |
| Half-pint | | 9.0 | 0.4 | 9.4 |
| 6-Gallon | | | <u>3</u> / | <u>3</u> / |
| 5-Gallon | | | 1.0 | 1.0 |
| All other sizes | <u>4</u> / | 0.6 | 0.5 | 1.1 |
| Total of all sizes | <u>4</u> / | 15.6 | 84.3 | 100.0 |
| | <u>Northeast</u> | | | |
| Gallon | | | 52.2 | 52.2 |
| Half-gallon | 0.3 | 13.1 | 13.2 | 26.6 |
| Quart | 0.1 | 6.1 | 1.2 | 7.3 |
| Pint | <u>4</u> / | 1.0 | 1.3 | 2.3 |
| Half-pint | <u>4</u> / | 7.7 | 0.7 | 8.3 |
| 6-Gallon | | | 0.7 | 0.7 |
| 5-Gallon | | | 1.9 | 1.9 |
| All other sizes | | 0.6 | 0.1 | 0.7 |
| Total of all sizes | 0.4 | 28.4 | 71.3 | 100.0 |
| | <u>Southeast</u> | | | |
| Gallon | | <u>3</u> / | 64.2 | 64.2 |
| Half-gallon | | 1.7 | 14.9 | 16.5 |
| Quart | | 1.1 | 1.1 | 2.2 |
| Pint | | 0.6 | 1.9 | 2.5 |
| Half-pint | | 12.5 | 1.4 | 13.9 |
| 6-Gallon | | | | |
| 5-Gallon | | | 0.6 | 0.6 |
| All other sizes | | <u>4</u> / | 0.2 | 0.2 |
| Total of all sizes | | 15.8 | 84.2 | 100.0 |

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Table 4—Percentage of Total Fluid Milk Products Sold by Size and Type of Container, by Handlers Regulated Under Federal Milk Orders, for Selected Order Groups, November 1999 ^{1/}--continued

| Size of container ^{2/} | Type of container | | | |
|---------------------------------|----------------------|-----------|-----------|--------------------|
| | Glass | Paper | Plastic | Total of all types |
| | Percent | | | |
| | <u>Southwest</u> | | | |
| Gallon | | | 68.6 | 68.6 |
| Half-gallon | <u>3/</u> | 3.5 | 10.9 | 14.5 |
| Quart | <u>3/</u> | 1.5 | 0.3 | 1.8 |
| Pint | | 0.7 | 1.7 | 2.4 |
| Half-pint | | 11.2 | 0.4 | 11.5 |
| 6-Gallon | | | | |
| 5-Gallon | | | 0.8 | 0.8 |
| All other sizes | 0.3 | <u>4/</u> | | 0.3 |
| Total of all sizes | 0.3 | 16.9 | 82.8 | 100.0 |
| | <u>Upper Midwest</u> | | | |
| Gallon | | | 62.9 | 62.9 |
| Half-gallon | 1.1 | 7.6 | 10.2 | 18.9 |
| Quart | <u>3/</u> | 1.6 | 1.0 | 2.6 |
| Pint | | 0.4 | 1.1 | 1.5 |
| Half-pint | | 9.5 | 1.0 | 10.5 |
| 6-Gallon | | | | |
| 5-Gallon | | | 2.1 | 2.1 |
| All other sizes | <u>4/</u> | 0.6 | 1.0 | 1.6 |
| Total of all sizes | 1.1 | 19.7 | 79.3 | 100.0 |
| | <u>Western</u> | | | |
| Gallon | | 0.5 | 71.3 | 71.8 |
| Half-gallon | | 9.5 | 4.3 | 13.8 |
| Quart | | 3.0 | 0.7 | 3.7 |
| Pint | | 1.0 | 0.8 | 1.8 |
| Half-pint | | 6.2 | 0.1 | 6.2 |
| 6-Gallon | | | 0.6 | 0.6 |
| 5-Gallon | | | 1.6 | 1.6 |
| All other sizes | | 0.5 | <u>4/</u> | 0.5 |
| Total of all sizes | | 20.6 | 79.4 | 100.0 |

^{1/} The figures in the table are based on the total sales volume for the milk order group. See Appendix Table 1 for applicable sales volume and fluid milk products included. See Appendix Table 2 for orders included in each group. Totals may not add due to rounding.

^{2/} 5-gallon and 6-gallon containers listed under plastic are mostly bag-in-box units. ^{3/} Data are restricted; pertains to the operations of fewer than three handlers. Data are included in "All other sizes". ^{4/} Less than 0.05 percent.

Table 5—Percentage of Total Fluid Milk Products Sold in Single-Serve Round Plastic Containers, by Handlers Regulated Under Federal Milk Orders, by Selected Order Group, November 1999 ^{1/}

| Selected Federal milk order group | Size of single-serve round plastic container | | | | |
|-----------------------------------|--|---------------|------|---------------|-------|
| | Half-pint | 12-ounce | Pint | Other | Total |
| | Percent | | | | |
| Appalachian ^{2/} | --- | --- | --- | --- | --- |
| Central | 1.1 | 0 | 0.8 | ^{3/} | 1.9 |
| Florida | 1.2 | 0 | 0.6 | 0 | 1.8 |
| Mideast | 0.2 | ^{3/} | 1.2 | ^{3/} | 1.4 |
| Northeast | 0.4 | 0 | 0.7 | ^{3/} | 1.2 |
| Southeast | 1.3 | 0 | 1.9 | 0 | 3.2 |
| Southwest | 0.4 | 0 | 1.7 | 0 | 2.1 |
| Upper Midwest | 0.8 | 0 | 1.0 | 0.1 | 1.9 |
| Western | 0.1 | 0 | 0.8 | 0 | 0.9 |
| All orders combined | 0.6 | ^{3/} | 1.0 | ^{4/} | 1.6 |

^{1/} The figures in the table are based on the total sales volume for the milk order group. See Appendix Table 1 for applicable sales volume and fluid milk products included. See Appendix Table 2 for orders included in each group. Totals may not add due to rounding.

^{2/} Information was not reported for this group of orders.

^{3/} Data are restricted; pertains to the operations of fewer than three handlers. Data are included in "Pint".

^{4/} Less than 0.05 percent.

Table 6—Percentage of Total Fluid Milk Products Sold by Method of Distribution and Type of Wholesale Outlet, by Handlers Regulated Under Federal Milk Orders, November of Selected Years, 1963 to 1999

| Year | Method of distribution ^{2/} | | | | | | |
|---------|--------------------------------------|-----------------|--|-----------------------|-------------------|-------------------|-----------|
| | Home-delivery | Total wholesale | Type of wholesale outlet ^{3/} | | | | All other |
| | | | Food chain stores | | Institutional | | |
| | | | Supermarket | Dairy and convenience | Military | Schools | |
| Percent | | | | | | | |
| 1963 | 29.7 | 70.3 | --- | --- | --- | --- | --- |
| 1967 | 23.1 | 76.9 | --- | --- | --- | --- | --- |
| 1971 | 14.8 | 85.2 | --- | --- | --- | --- | --- |
| 1975 | 6.9 | 93.1 | --- | --- | --- | --- | --- |
| 1977 | 5.3 | 94.7 | 42.9 | 10.0 | 1.7 ^{4/} | 7.7 ^{4/} | 32.8 |
| 1979 | 3.8 | 96.2 | 46.2 | 10.7 | 1.5 | 7.6 | 30.2 |
| 1983 | 1.8 | 98.2 | 50.2 | 9.8 | 1.4 | 6.7 | 30.1 |
| 1987 | 1.2 | 98.8 | 51.2 | 10.6 | 1.4 | 7.1 | 28.5 |
| 1991 | 1.0 | 99.0 | 55.2 | 10.4 | 1.0 | 6.7 | 25.8 |
| 1995 | 0.7 | 99.3 | 56.5 | 10.2 | 1.0 | 6.5 | 25.1 |
| 1997 | 0.5 | 99.5 | 57.6 | 10.2 | 0.9 | 6.3 | 24.4 |
| 1999 | 0.5 | 99.5 | 57.0 | 9.5 | 0.8 | 6.8 | 25.4 |

^{1/} The figures in the table are based on the total sales volume in all orders combined. See Appendix Table 1 for the applicable sales volume and fluid milk products included.

^{2/} See the “Definitions” section in the Appendix for the description of the various methods of distribution.

^{3/} This breakdown was not available prior to 1977. Percentages may not add to total wholesale due to rounding.

^{4/} Does not include data for the New York-New Jersey marketing area for which these data were not available.

Table 7--Percentage of Total Fluid Milk Products Sold by Method of Distribution and Type of Wholesale Outlet, by Handlers Regulated Under Federal Milk Orders, by Selected Order Group, November 1999 ^{1/}

| Selected Federal milk order group | Method of distribution ^{2/} | | | | | | | | |
|-----------------------------------|--------------------------------------|-----------------|--------------------------|--------------|-----------------------|---------------|---------------|---------|-----------|
| | Home-delivery | Total wholesale | Type of wholesale outlet | | | | | | All other |
| | | | Food chain stores | | | Institutional | | | |
| | | | Total | Supermarkets | Dairy and convenience | Total | Military | Schools | |
| Percent | | | | | | | | | |
| Appalachian | 0 | 100.0 | 76.8 | 67.1 | 9.7 | 9.5 | 1.6 | 7.9 | 13.7 |
| Central | 1.2 | 98.8 | 62.5 | 58.8 | 3.8 | 7.2 | 0.9 | 6.4 | 29.0 |
| Florida | ^{3/} | 100.0 | 69.2 | 61.0 | 8.1 | 4.5 | 0.5 | 3.9 | 26.4 |
| Mideast | 0.1 | 99.9 | 62.8 | 52.5 | 10.3 | 6.6 | 0.3 | 6.3 | 30.5 |
| Northeast | 0.2 | 99.8 | 76.2 | 59.3 | 16.9 | 7.7 | 0.5 | 7.2 | 15.9 |
| Southeast | 0.4 | 99.6 | 56.9 | 47.0 | 9.9 | 11.6 | 1.5 | 10.1 | 31.1 |
| Southwest | 0 | 100.0 | 71.0 | 64.1 | 6.9 | 8.6 | 1.1 | 7.4 | 20.4 |
| Upper Midwest | 2.4 | 97.6 | 55.9 | 50.0 | 5.9 | 6.7 | ^{4/} | 6.6 | 35.0 |
| Western | 0.5 | 99.5 | 61.2 | 56.9 | 4.3 | 4.9 | 1.4 | 3.5 | 33.4 |
| All groups combined | 0.5 | 99.5 | 66.5 | 57.0 | 9.5 | 7.6 | 0.8 | 6.8 | 25.4 |

^{1/} The figures in the table are based on the total sales volume for the milk order group. See Appendix Table 1 for applicable sales volume and fluid milk products included. See Appendix Table 2 for orders included in each group. Totals may not add due to rounding.

^{2/} See the "Definitions" section in the Appendix for the description of the various methods of distribution.

^{3/} Data are restricted; pertains to the operations of fewer than three handlers. Data are included in "All other wholesale."

^{4/} Less than 0.05 percent.

Table 8--Percentage of Total Fluid Milk Products Sold by Type of Food Chain Store, by Handlers Regulated Under Federal Milk Orders, by Selected Order Group, November 1999 ^{1/}

| Selected Federal milk order group | Type of food chain store ^{2/} | | | | | |
|-----------------------------------|--|-----------------------|----------------|-----------------------|-------|-----------------------------|
| | Total food chain stores | Supermarket | | Dairy/convenience | | Total vertically integrated |
| | | Vertically integrated | Other | Vertically integrated | Other | |
| Percent | | | | | | |
| Appalachian | 76.8 | 28.9 | 38.2 | 0 | 9.7 | 28.9 |
| Central | 62.5 | 14.4 | 44.4 | 0.5 | 3.3 | 14.9 |
| Florida | 69.2 | <u>3/</u> | <u>3/</u> | 0 | 8.1 | <u>3/</u> |
| Mideast | 62.8 | 7.2 | 45.3 | 0.9 | 9.4 | 8.1 |
| Northeast | 76.2 | 9.6 | 49.7 | 4.7 | 12.2 | 14.3 |
| Southeast | 56.9 | 24.5 <u>4/</u> | 27.3 <u>4/</u> | <u>5/</u> | 9.9 | 24.5 <u>4/</u> |
| Southwest | 71.0 | <u>6/</u> | <u>6/</u> | <u>5/</u> | 6.9 | <u>6/</u> |
| Upper Midwest | 55.9 | 0 | 50.0 | <u>5/</u> | 5.9 | <u>5/</u> |
| Western | 61.2 | 33.3 <u>7/</u> | 26.3 <u>7/</u> | <u>5/</u> | 4.3 | 33.3 <u>7/</u> |
| All orders combined | 66.5 | 17.3 | 39.7 | 1.5 | 8.0 | 18.8 |

^{1/} The figures in the table are based on the total sales volume for the milk order group. See Appendix Table 1 for applicable sales volume and fluid milk products included. See Appendix Table 2 for orders included in each group. Totals may not add due to rounding.

^{2/} See the "Definitions" section in the Appendix for the description of the types of food chain stores.

^{3/} Data are restricted; pertains to the operations of fewer than three handlers. Data have been combined with Southeast.

^{4/} Includes data for Florida; see ^{3/}.

^{5/} Data are restricted; pertains to the operations of fewer than three handlers. Data are included in applicable "Other". "All orders combined" includes restricted data.

^{6/} Data are restricted; pertains to the operations of fewer than three handlers. Data have been combined with Western.

^{7/} Includes data for Southwest; see ^{4/}.

Table 9—Percentage of Total Fluid Milk Products Sold by Type of All Other Wholesale Outlets, by Handlers Regulated Under Federal Milk Orders, by Selected Order Group, November 1999 ^{1/}

| Selected Federal milk order group | Type of all other wholesale outlets ^{2/} | | | |
|-----------------------------------|---|--------------------------|----------------------------------|-------|
| | Total all other | Superstores/hypermarkets | Warehouse stores/wholesale clubs | Other |
| | Percent | | | |
| Appalachian | 13.7 | ^{3/} | 0 | 13.7 |
| Central | 29.0 | 5.2 | 2.5 | 21.2 |
| Florida ^{4/} | 26.4 | 4.2 | 2.1 | 20.1 |
| Mideast | 30.5 | 4.7 | 1.0 | 24.9 |
| Northeast | 15.9 | 1.1 | 2.1 | 12.8 |
| Southeast | 31.1 | 4.7 | 2.2 | 24.2 |
| Southwest | 20.4 | 5.0 | 2.3 | 13.2 |
| Upper Midwest | 35.0 | 1.2 | 0.9 | 32.9 |
| Western | 33.4 | 1.5 | 1.3 | 30.7 |
| All orders combined | 25.4 | 3.0 | 1.6 | 20.7 |

^{1/} The figures in the table are based on the total sales volume for the milk order group. See Appendix Table 1 for applicable sales volume and fluid milk products included. See Appendix Table 2 for orders included in each group. Totals may not add due to rounding.

^{2/} See the “Definitions” section in the Appendix of the types of all other wholesale outlets.

^{3/} Data are restricted; pertains to the operations of fewer than three handlers. Data are included in “Other”.

^{4/} “Total all other” and “Other” includes data for home-delivery which were restricted.

APPENDIX

Definitions

Type of Container: Containers are categorized by glass, paper, and plastic. Containers larger than one gallon shown in the glass category are metal cans. The paper category includes wax-coated and plastic-coated containers, and foil-lined UHT containers. Plastic includes rigid blow mold or thermoformed containers, single-serve round (milk bottle shaped) containers, plastic-lined boxes (polyethylene bag in corrugated paper box or in rigid plastic case), and plastic bags sold separately. Containers larger than one gallon in the plastic category, for the most part, are bag-in-box containers.

Size of Container: Container sizes surveyed are; gallon, half-gallon, quart, pint, half-pint, 6-gallon, 5-gallon, and all others. Containers banded together, or containers put into larger bags, sacs, etc., are reported separately. Examples: 1/2 –gallon twin packs are reported as two ½ gallons; four 1-quart bags in a larger bag are reported as four quart units, not as a gallon; six-packs of half pints are reported as six half pints, etc.

Method of Distribution: Sales are divided into home-delivery and wholesale. Home-delivery includes quantities delivered to homes or sold to others for delivery to homes. Wholesale includes quantities distributed through all other methods. Wholesale is broken down into food chain stores, institutional outlets, and all other.

Food chain stores are defined as 11 or more stores, primarily engaged in food retailing, and either being under common management, being franchised by a common company, or belonging to a common purchasing association. Food chain stores are categorized into supermarket or dairy/convenience stores. Also identified are vertically integrated chain stores. Vertically integrated includes those chain stores which have integrated backwards into fluid milk processing, and fluid milk processing plants which have integrated forward into chain store ownership. Also included are franchise organizations in which the franchiser also owns a dairy plant that services the franchisee's store and associations of independent food store owners which jointly own a dairy plant that services their stores.

Institutional outlets are military installations and schools which includes public schools (elementary and high school), colleges, and universities. All other wholesale is broken down into superstores/hypermarkets, warehouse stores/wholesale clubs, and other. Superstores/hypermarkets are general merchandise stores that include a full-line supermarket. Other includes nonchain food stores, nonfood stores (drug stores, gasoline stations, etc.), restaurants, hotels, hospitals, nursing homes, vending machines, and any other type of wholesale outlet.

**Appendix Table 1—Volume of Fluid Milk Products Sold by Handlers Regulated Under Federal Milk Orders
in November of Selected Years**

| Fluid milk product | Sales in November 1999 <u>1/</u> | Order group <u>2/</u> | Sales in November 1999 <u>3/</u> | Year | Sales in November <u>4/</u> |
|---------------------------|--|-----------------------|--|------|--------------------------------|
| | 1,000 pounds | | 1,000 pounds | | 1,000 Pounds |
| Whole milk | 1,207,127 | Appalachian | 313,658 | 1963 | 1,662,174 |
| Flavored whole milk | 67,827 | Central | 457,052 | 1967 | 2,297,632 |
| Reduced fat (2%) milk | 1,184,890 | Florida | 209,901 | 1971 | 3,365,148 |
| Low fat (1%) milk | 403,391 | Mideast | 567,306 | 1975 | 3,290,151 |
| Fat-free (skim) milk | 593,472 | Northeast | 793,607 | 1977 | 3,473,912 |
| Flavored fat-reduced milk | 218,500 | Southeast | 407,860 | 1979 | 3,512,377 |
| Buttermilk | 48,972 | Southwest | 327,365 | 1983 | 3,485,998 |
| Total fluid milk products | 3,724,179 | Upper Midwest | 322,401 | 1987 | 3,500,266 |
| | | Western | 325,029 | 1991 | 3,617,710 |
| | | All orders combined | 3,724,179 | 1995 | 3,762,277 |
| | | | | 1997 | 3,651,023 |
| | | | | 1999 | 3,724,179 |

1/ Total sales for all orders combined.

2/ See Appendix Table 2 for orders included in each group.

3/ Sales of total fluid milk products for all the orders in the group.

4/ Sales of total fluid milk products for all orders included in the applicable survey.

Appendix Table 2—Federal Milk Order Groups

Appalachian

Carolina
Louisville-Lexington-Evansville

Central

Central Illinois
Eastern Colorado
Eastern South Dakota
Greater Kansas City
Iowa
Nebraska-Western Iowa
Southern Illinois-Eastern Missouri
Southwest Plains
Western Colorado

Florida

Southeastern Florida
Tampa Bay
Upper Florida

Midwest

Eastern Ohio-Western Pennsylvania
Indiana
Michigan Upper Peninsula
Ohio Valley
Southern Michigan

Northeast

Middle Atlantic
New England
New York-New Jersey

Southeast

Southeast

Southwest

New Mexico-West Texas
Texas

Upper Midwest

Chicago Regional
Upper Midwest

Western 1/

Central Arizona
Great Basin
Pacific Northwest

1/ Data for the Southwestern Idaho-Eastern Oregon milk order were excluded from this survey.

Appendix Table 3—Factors for Converting Volumes Sold into Number of Container Units Sold 1/

| Fluid milk product | Conversion factors - pounds per: | | | | | | |
|---------------------------|----------------------------------|-------------|--------|--------|-----------|----------|----------|
| | Gallon | Half-gallon | Quart | Pint | Half-pint | 6-Gallon | 5-Gallon |
| Whole milk | 8.60 | 4.300 | 2.1500 | 1.0750 | .5375 | 51.60 | 43.00 |
| Flavored whole milk | 8.00 | 4.000 | 2.0000 | 1.0000 | .5000 | 48.00 | 40.00 |
| Reduced fat (2%) milk | 8.62 | 4.310 | 2.1550 | 1.0775 | .5388 | 51.72 | 43.10 |
| Low fat (1%) milk | 8.62 | 4.310 | 2.1550 | 1.0775 | .5388 | 51.72 | 43.10 |
| Fat-free (skim) milk | 8.63 | 4.315 | 2.1575 | 1.0788 | .5394 | 51.78 | 43.15 |
| Flavored fat-reduced milk | 8.00 | 4.000 | 2.0000 | 1.0000 | .5000 | 48.00 | 40.00 |
| Buttermilk | 8.62 | 4.310 | 2.1550 | 1.0775 | .5388 | 51.72 | 43.10 |

1/ Conversion process—compute volume sold in the particular size container by multiplying the percentage in the table by the applicable volume in Appendix Table 1; then divide volume by applicable factor in this table to determine the number of container units.