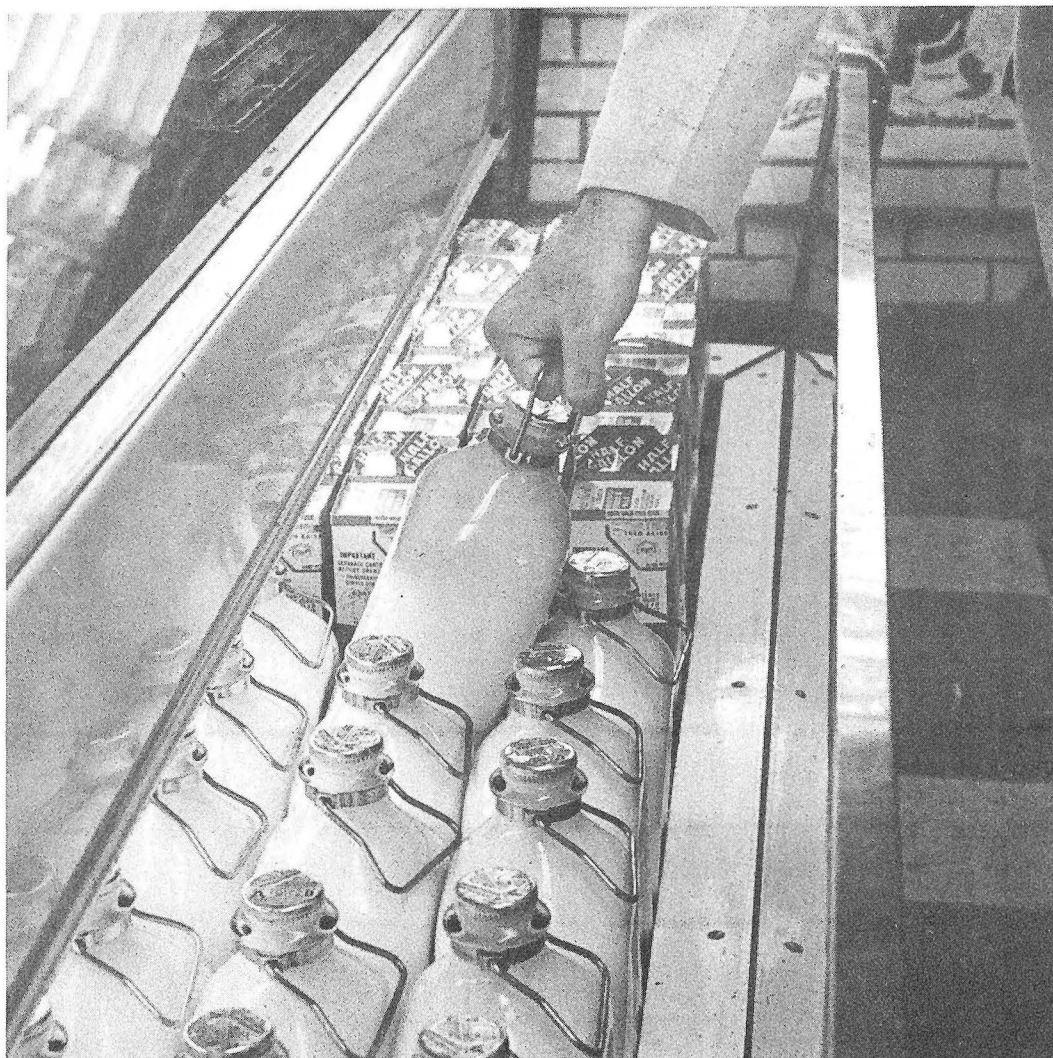


The Marketing of High Fat Fluid Milk Products in Five Major Ohio Milk Markets



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INTRODUCTION

In the major Ohio milk markets large differences exist in the relationship between the amount of milkfat produced in the market and the amount of milkfat utilized in its fluid form. As an example, in the Toledo market nearly 90 percent of the milkfat received in 1958 was utilized in Class I as fluid milkfat. During this same period, less than 70 percent of the milkfat received in the Cleveland market was utilized in Class I. All the excess milkfat received must be utilized in the lower utilization classes, II or III.

The dairy farmer receives a larger return for his product as the amount of milkfat utilized in its fluid form (Class I) increased. High fat fluid milk products, especially the various cream products, offer an outlet for relatively large amounts of fluid milkfat in relation to the pounds of product consumed. In recent years it is generally conceded that the sales of high fat fluid milk products have decreased in importance relative to fluid milk sales. This has been caused by an increased emphasis on low calorie diets, in addition to other factors. Therefore, it is desirable to determine the extent to which changes in the sales of the various high fat fluid milk products have occurred. Information on the products which are largely responsible for this decreasing importance and which products have the most potential for increased sales is also desired.

The seasonal variation in the sales of high fat fluid milk products and its relation to the seasonality of producer receipts is important to handlers. This is because these products are an outlet for large volumes of milkfat in relation to the product pounds sold. The knowledge of a product's seasonal sales pattern can also be helpful in planning sales promotional programs.

Milk handlers are interested in the sales potential of these products because volume is a relatively large factor in determining the unit cost of processing and packaging. In many markets high fat fluid milk products account for less than 2 percent of the market's total milk sales. This low unit sales volume, plus the fact that milk is a highly perishable food product, limits handlers in the amount of these products that can be processed and packaged at one time. Handlers also

market high fat fluid milk products in a large variety of container types and sizes. These factors all affect the profitability of these products.

Assuming a high efficiency of operation and an efficient sales program, if the volume of a high fat fluid milk product is below a handler's breakeven volume, the handler has four possible alternatives: (1) increase the price of the product to the consumer, (2) continue to handle the product at a loss, (3) drop the product from the company line, or (4) have another handler in the market process the product for his use. Management, however, is often hesitant to increase prices to consumers or to reduce their product line because of possible competitive consequences. Having a competitor process a product for one's own use has its known disadvantages. Consequently, many handlers continue to handle some high fat fluid milk products at a loss. For this reason the alternatives available to handlers will be examined.

Objectives

1. Determine and analyze the trend in the marketing of the following high fat fluid milk products:
 - A. High fat milk
 - B. Cream mixtures
 - C. Single cream
 - D. Double cream
 - E. Sour cream

with respect to:

1. Product sales volume
 2. Sales volume in relation to producer receipts
 3. Sales volume in relation to fluid milk utilization
- II. Determine the seasonality of cream sales.
 - III. Determine handler's attitudes toward high fat fluid milk products.
 - IV. Examine and analyze the alternatives available to handlers when a high fat fluid milk product is not profitable.

Methodology

The markets selected for study were Cincinnati, Cleveland, Columbus, Dayton-Springfield, and Toledo. These markets are the largest milk markets in Ohio on which sales volume data for a period of ten years could be obtained. Data on producer receipts, fluid milk utilization, special milk sales, cream mixture sales, single cream sales, double cream sales, and sour cream sales were obtained from Federal Milk Market Administrators in the selected markets.

For the final phase of the study, determining handlers' attitudes toward high fat fluid milk products, the three largest handlers and three randomly selected handlers in each market were sampled. The three largest handlers were selected because of their importance in establishing market-wide policies and because they were the major handlers of these products. The attitudes of the smaller handlers were determined from the randomly selected plants. A personal interview was conducted with the plant manager or the assistant plant manager and the sales manager.

Definitions

Persons in the dairy industry use different terminology when referring to particular high fat fluid milk products. For the purpose of clarity it seems desirable to define the terms used throughout this publication. For uniformity, where possible, the terms are defined in such a manner that they are analogous with the terms used in Federal Milk Marketing Orders.

1. High fat milk—milk containing at least 4 percent milkfat but less than 6 percent milkfat.
2. Cream mixtures—cream containing at least 6 percent milkfat but less than 13 percent milkfat.
3. Single cream—cream containing at least 13 percent milkfat but less than 27 percent milkfat.
4. Double cream—cream containing 27 percent milkfat or more.
5. Sour cream—cream treated and soured to produce a clean sour flavor and a heavy spreading consistency. This product contains approximately 18 percent milkfat. For the purposes of this study, sour cream which has been flavored and sold as a party dip is included in this classification.

6. High fat fluid milk products—includes all the products defined in items 1 through 5 above.
7. Cream—includes the products defined in items 2 through 5 above.

HIGH FAT FLUID PRODUCTS SALES DATA

Product Sales Volume

Significant changes have occurred since 1948 in the pounds of cream sold and in the pounds of milkfat utilized in cream in the five markets studied. These changes can be noted by an examination of Tables I and II.

The total pounds of cream sold daily in 1960 in the five markets combined exceeded the 1948 sales by approximately 15,000 pounds, (Table I). The general trend has been upward although the yearly averages have fluctuated over the period. It is recognized that a decrease in per capita consumption has resulted due to a population increase of over 20 percent in these markets. The total pounds of milkfat utilized in cream has decreased from 21,900 pounds per day in 1948 to 20,000 pounds in 1960, (Table II). The increase in the pounds of cream sold with a corresponding decrease in milkfat utilized is the result of an increase in the relative importance of the lower milkfat cream products. This fact is evident from an examination of the average milkfat content of cream sold, Table III.

Individual markets have not necessarily followed the trend that has prevailed in the five milk markets combined. An increase in the pounds of cream sold with a decrease in the pounds of milkfat utilized was experienced in the Cincinnati and Cleveland markets. In contrast, the Dayton-Springfield and Columbus markets have experienced an increase and the Toledo market a decrease in both the pounds of cream sold and the amount of milkfat utilized in cream. Also, the Toledo market is the only milk market that has not had a significant downward trend in the average milkfat content of the cream sold, (Table III).

Table I. —Average Daily Cream Sales, by Market, Five Ohio Milk Markets, 1948 – 1960
(Product Pounds)

Year	Market					Total
	Cincinnati	Cleveland	Columbus	Dayton-Springfield	Toledo	
1948	16,592	50,175	13,444	12,313	25,901	118,425
1950	16,010	51,637	13,567	12,881	25,337	119,432
1952	15,047	52,318	13,558	12,194	23,564	116,681
1954	15,065	49,730	13,429	13,549	22,117	113,890
1956	15,816	56,405	15,384	15,866	23,820	127,291
1958	17,108	54,786	16,541	16,473	22,264	127,172
1960	21,244	53,696	20,074	16,459	22,092	133,565

Source: Federal Milk Market Administrators: Cincinnati, Cleveland, Columbus, Dayton, and Toledo, Ohio.

Table II. —Average Daily Milkfat Utilized in Cream, by Market, Five Ohio Milk Markets, 1948 – 1960
(Pounds of Milkfat)

Year	Market					Total
	Cincinnati	Cleveland	Columbus	Dayton-Springfield	Toledo	
1948	3,249	10,370	2,534	2,384	3,362	21,899
1950	3,098	10,488	2,412	2,333	3,124	21,455
1952	2,782	9,711	2,211	2,059	2,864	19,632
1954	2,668	8,804	2,102	2,219	2,839	18,632
1956	2,678	9,436	2,389	2,507	3,226	20,236
1958	2,747	8,941	2,467	2,527	3,096	19,778
1960	3,232	8,381	2,957	2,478	3,001	20,049

Source: Federal Milk Market Administrators: Cincinnati, Cleveland, Columbus, Dayton, and Toledo, Ohio.

Table III. —Average Milkfat Content of Cream Sales, by Market, Five Ohio Milk Markets, 1948 – 1960

Year	Market					Average*
	Cincinnati	Cleveland	Columbus	Dayton-Springfield	Toledo	
1948	19.58%	20.67%	18.85%	19.36%	12.98%	18.49%
1950	19.35	20.31	17.78	18.11	12.33	17.96
1952	18.49	18.56	16.31	16.93	12.15	16.82
1954	17.71	17.70	15.65	16.38	12.84	16.36
1956	16.93	16.73	15.53	15.80	13.54	15.90
1958	16.06	16.32	14.91	15.34	13.90	15.55
1960	15.21	15.61	14.73	15.06	13.58	15.01

*Weighted average

Source: Federal Milk Market Administrators: Cincinnati, Cleveland, Columbus, Dayton, and Toledo, Ohio.

Sales of individual cream products have also changed significantly since 1948, Tables IV and V. Cream mixture sales increased over 200 percent while sour cream sales increased nearly 300 percent. During this same period the average daily sales volume of single and double cream decreased significantly, single cream sales by 60 percent and double cream sales by 40 percent. Even with this large increase in sour cream sales and the decrease in single cream sales are still twice the volume of sour cream sales.

The Toledo market is the only market that has not experienced increases in cream mixture sales since 1948. The sales increases ranged from 551 percent in the Dayton-Springfield market to 3,747 percent in the Cincinnati market. In the Toledo market cream mixture sales decreased by approximately 15 percent. One important reason for this difference can be advanced. In 1948 cream mixtures as a dairy product was generally in its development stage. This is indicated by the short period that this product had been on the market and by its relatively low sales volume. With a low sales volume base, it is relatively easy

Table IV. --Average Daily Cream Sales, by Cream Classification, Five Ohio Milk Markets Combined, 1948 - 1960
(Product Pounds)

Year	Cream Classification				Total
	Cream Mixtures	Single Cream	Sour Cream	Double Cream	
1948	25,968	76,240	3,916	12,301	118,425
1950	35,019	67,855	4,691	11,867	119,432
1952	44,842	56,746	5,506	9,587	116,681
1954	48,099	51,581	5,596	8,614	113,890
1956	62,945	48,108	7,004	9,005	127,062
1958	69,341	39,007	10,632	8,192	127,172
1960	80,746	30,130	15,405	7,284	133,565

Source: Federal Milk Market Administrators: Cincinnati, Cleveland, Columbus, Dayton, and Toledo, Ohio.

Individual milk markets did not necessarily experience the trend that prevailed when the five milk markets were totaled. The average daily pounds of cream sold in each market by cream classification is given in Tables VI through X.

to obtain large percentage sales increases as a product passes through its growth stage. Cream mixtures, however, was first introduced in Ohio in the Toledo market, and by 1948 this product was past its growth stage. After a product passes its growth stage, the most that can be expected is that its per capita usage remain relatively constant.

Table V. --Average Daily Milkfat Utilized in Cream, by Cream Classification, Five Ohio Milk Markets Combined, 1948 - 1960
(Pounds of Milkfat)

Year	Cream Classification				Total
	Cream Mixtures	Single Cream	Sour Cream	Double Cream	
1948	2,700	14,177	692	4,330	21,899
1950	3,694	12,703	847	4,211	21,455
1952	4,677	10,557	988	3,405	19,627
1954	5,101	9,517	1,013	2,945	18,576
1956	6,839	8,947	1,331	3,119	20,236
1958	7,752	7,205	1,957	2,864	19,778
1960	9,236	5,549	2,717	2,547	20,049

Source: Federal Milk Market Administrators: Cincinnati, Cleveland, Columbus, Dayton, and Toledo, Ohio.

Each market has experienced decreases in single cream sales since 1948. Cleveland had the lowest percentage decrease, 53 percent, while Toledo experienced the largest percentage decrease, 76 percent. The three other markets had decreases which exceeded 60 percent.

Sour cream sales in each market have increased from their 1948 level. The percentage increases range from approximately 130 percent in the Cleveland market to nearly 2,500 percent in the Columbus market. It is especially significant to note that most of the increased sour cream sales have occurred since 1956

Table VI. —Average Daily Cream Sales, by Cream Classification, Cincinnati Milk Market, 1948 — 1960
(Product Pounds)

Year	Cream Classification				Total
	Cream Mixtures	Single Cream	Sour Cream	Double Cream	
1948	342	14,638	254	1,358	16,592
1950	3,036	11,200	246	1,534	16,010
1952	4,028	9,333	272	1,414	15,047
1954	4,825	8,534	296	1,410	15,065
1956	6,294	7,900	326	1,296	15,816
1958	8,801	5,964	1,067	1,276	17,108
1960	13,158	5,267	1,590	1,229	21,244

Source: Federal Milk Market Administrator: Cincinnati, Ohio.

Table VII. —Average Daily Cream Sales, by Cream Classification, Cleveland Milk Market, 1948 — 1960
(Product Pounds)

Year	Cream Classification				Total
	Cream Mixtures	Single Cream	Sour Cream	Double Cream	
1948	2,577	36,747	3,366	7,485	50,175
1950	4,741	35,804	3,953	7,139	51,637
1952	11,290	31,060	4,528	5,440	52,318
1954	12,476	28,688	4,372	4,194	49,730
1956	20,187	27,304	5,372	3,542	56,405
1958	22,134	23,038	6,662	2,952	54,786
1960	26,105	17,187	7,846	2,558	53,696

Source: Federal Milk Market Administrator: Cleveland, Ohio

Table VIII. —Average Daily Cream Sales, by Cream Classification, Columbus Milk Market, 1948 — 1960
(Product Pounds)

Year	Cream Classification				Total
	Cream Mixtures	Single Cream	Sour Cream*	Double Cream	
1948	933	11,523	—	988	13,444
1950	2,227	10,263	100	977	13,567
1952	4,707	7,899	96	856	13,558
1954	5,882	6,681	66	800	13,429
1956	8,023	6,340	153	868	15,384
1958	9,992	4,880	807	862	16,541
1960	12,520	3,990	2,587	977	20,074

*Sour cream sales were included in single cream sales before 1950.

Source: Federal Milk Market Administrator: Columbus, Ohio

high fat milk, but it may also include milk that tests under 4 percent, providing the milk has a special characteristic, such as soft curd milk.

Both markets have experienced a significant decrease in the product and milkfat pounds utilized in special milk. From 1948 to 1960 the average daily sales of special milk in the Cleveland market have decreased 77 percent. In the Columbus market the average daily special milk sales from 1948 to 1958 decreased 37 percent. Due to a significant decrease in the average milkfat content, the pounds of milkfat utilized in special milk has declined 43 percent in the Columbus market.

milkfat received from producers in the five markets was 13.88 percent. By 1960 these values had declined to 1.84 percent and 7.01 percent, respectively. Therefore, since 1948 cream sales have decreased in importance as a source for utilizing producer receipts.

Each market experienced the same trend, although to varying degrees, that prevailed in the five markets combined. The Cincinnati market has consistently had the lowest percentage relationship between cream sales and producer receipts, while the Toledo market has consistently had the highest. Differences in this relationship among the markets can largely be explained on the basis of the amount of excess milk in the

Table XI. —Average Daily Special Milk Sales, Product Pounds, Milkfat Pounds, Milkfat Percentage, Cleveland and Columbus Milk Markets, 1948 — 1960

Year	Cleveland Market			Columbus Market		
	Product Pounds	Milkfat* Pounds	Milkfat* Percentage	Product Pounds	Milkfat Pounds	Milkfat Percentage
1948	14,779	665	4.50%	19,645	823	4.19%
1950	17,538	789	4.50	18,539	744	4.02
1952	15,733	708	4.50	16,931	677	4.00
1954	13,185	593	4.50	12,693	496	3.90
1956	11,905	532	4.47	14,858	580	3.90
1958	6,660	300	4.50	12,333	466	3.77
1960**	3,458	152	4.40	—	—	—

*Milkfat pounds and percentage were estimated prior to 1956.

**Not available for 1960 in the Columbus market.

Source: Federal Milk Market Administrators: Cleveland and Columbus, Ohio.

CREAM SALES IN RELATION TO PRODUCER RECEIPTS

To determine the significance of changes in the sales of high fat fluid milk products, it is necessary to compare the sales with other segments of the dairy industry. Producer receipts in the various markets were selected as one of the bases for comparison.

The cream product pounds and milkfat pounds sold in each market expressed as a percentage of the product pounds and milkfat pounds of producer receipts is shown in Tables XII and XIII. The total pounds of cream sold in 1948 for the five milk markets combined were 2.94 percent of the total pounds of producer receipts. The total pounds of milkfat utilized in cream expressed as a percentage of the total pounds of

markets. Since 1954 the Cincinnati, Cleveland, Columbus, and Dayton-Springfield markets have experienced a relatively constant relationship between cream sales and producer receipts.

Assuming no decrease in producer receipts and no change in the class prices of milk, if the sales of other Class I dairy products did not increase in relation to producer receipts at the same rate that cream sales have decreased, producers in the markets have received a lower return per hundredweight. This is true because a larger portion of the producer receipts would have been utilized in the lower priced milk classes, Classes II and/or III. The decrease in cream product pounds sold as a percentage of producer receipts might easily be absorbed by an increase in the sales of other Class I dairy products. However, it would require a large increase in these sales to absorb the decreased milkfat sold in Class I because of the relatively high milkfat content of cream com-

and that this product is currently in its growth stage.

The Toledo market was the only market studied that experienced an increase, 23 percent, in double cream sales since 1948. Double cream sales decreased by one percent in the Columbus market and by 66 percent in the Cleveland market. The Cincinnati and Dayton-Springfield markets, like the Cincinnati market, had small percentage decreases in double cream sales.

The large relative importance of cream mixtures, a low milkfat cream, in the Toledo market from 1948 to 1958 explains why the average milkfat percentage of the total cream sold in the Toledo market has been consistently below the average that prevailed in the other markets. Also, the relative importance of cream mixtures in the Toledo market has remained relatively constant throughout the period. In the other markets the relative importance of cream mixtures has in-

Table IX. —Average Daily Cream Sales, by Cream Classification, Dayton-Springfield Milk Market, 1948 – 1960
(Product Pounds)

Year	Cream Classification				Total
	Cream Mixtures	Single Cream	Sour Cream*	Double Cream	
1948	1,772	9,251	—	1,290	12,313
1950	3,688	7,932	—	1,261	12,881
1952	4,663	6,324	153	1,054	12,194
1954	6,520	5,665	228	1,136	13,549
1956	9,667	4,626	403	1,170	15,866
1958	11,032	3,600	663	1,178	16,473
1960	11,536	2,723	1,135	1,065	16,459

*Sour cream sales were included in single cream sales before 1951.

Source: Federal Milk Market Administrator: Dayton, Ohio

The relative importance of the various cream products for the five markets combined and for the five markets individually is shown graphically in Charts I through VI. Total cream sales for each year was assigned the value of 100 and individual cream product sales were then expressed as a percentage of total cream sales. These charts are self-explanatory for showing changes in the relative importance of the various cream products.

creased significantly. This explains why a downward trend in the average milkfat content of the cream sold has not prevailed in the Toledo market.

Market wide data on the sales of high fat milk were difficult to determine due to variations in the classification under the Federal Milk Marketing Orders. Sales volume data on special milk were obtained for the Cleveland and Columbus markets, Table XI. The special milk classification is composed primarily of

Table X. —Average Daily Cream Sales, by Cream Classification, Toledo Milk Market, 1948 – 1960
(Product Pounds)

Year	Cream Classification				Total
	Cream Mixtures	Single Cream	Sour Cream	Double Cream	
1948	20,344	4,081	296	1,180	25,901
1950	21,333	2,656	392	956	25,337
1952	20,154	2,130	457	823	23,564
1954	18,396	2,013	634	1,074	22,117
1956	18,774	1,938	979	2,129	23,820
1958	17,382	1,525	1,433	1,924	22,264
1960	17,427	963	2,247	1,455	22,092

Source: Federal Milk Market Administrator: Toledo, Ohio

CHART I
 Percentage Distribution, Average Daily Cream
 Sales, Five Ohio Milk Markets Combined
 1948 - 1960

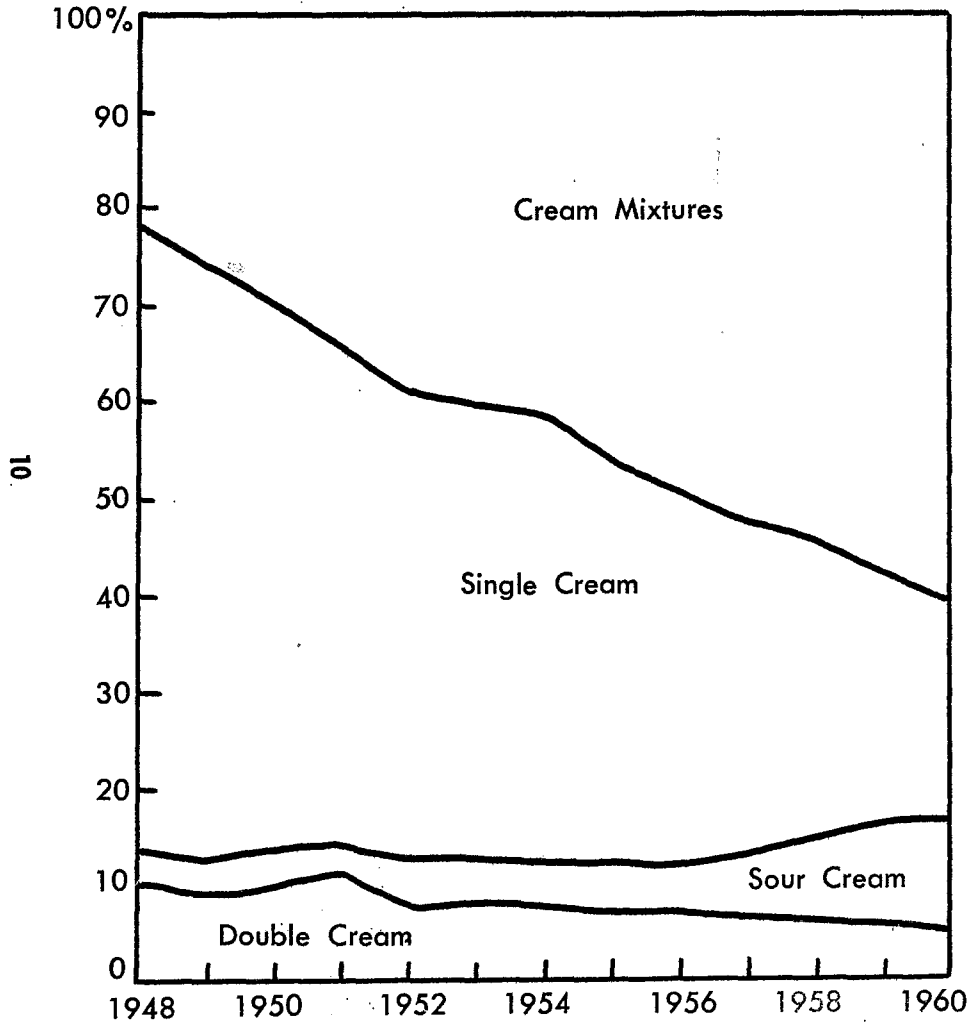


CHART II
 Percentage Distribution, Average Daily Cream
 Sales, Cincinnati Milk Market, 1948 - 1960

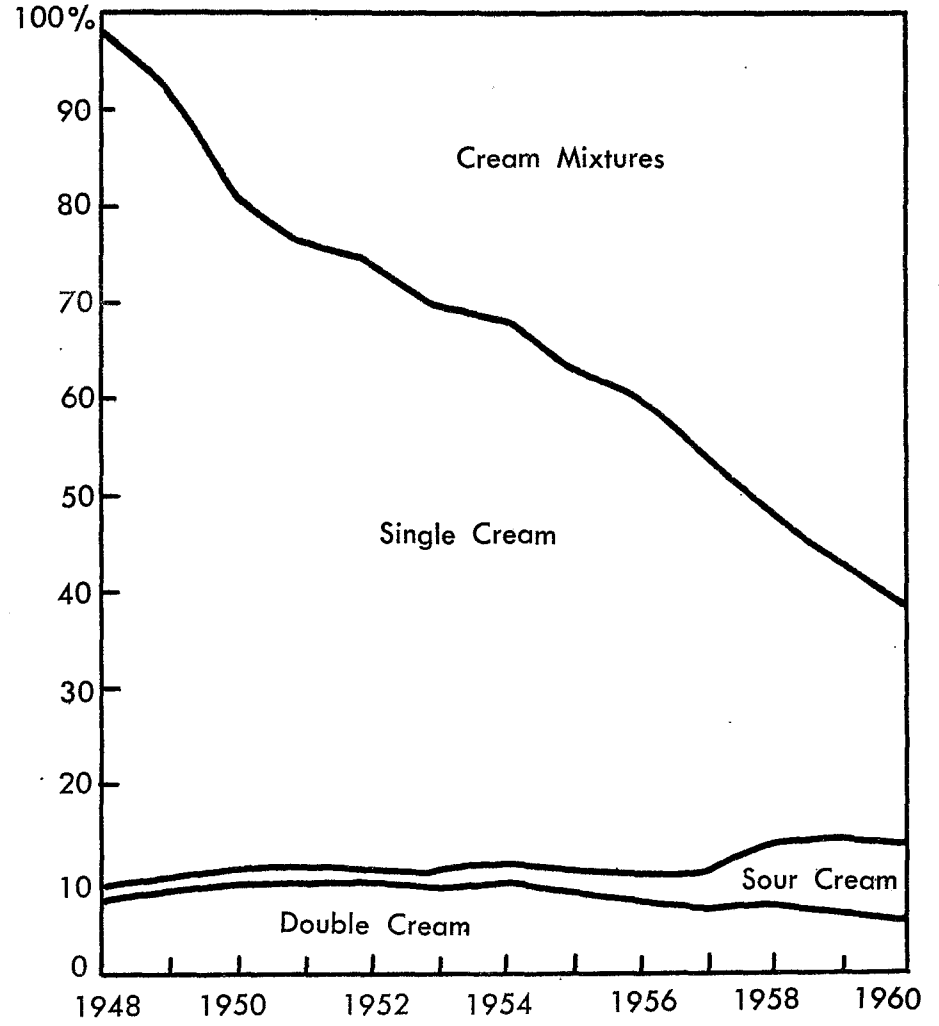


CHART III
 Percentage Distribution, Average Daily Cream
 Sales, Cleveland Milk Market
 1948 - 1960

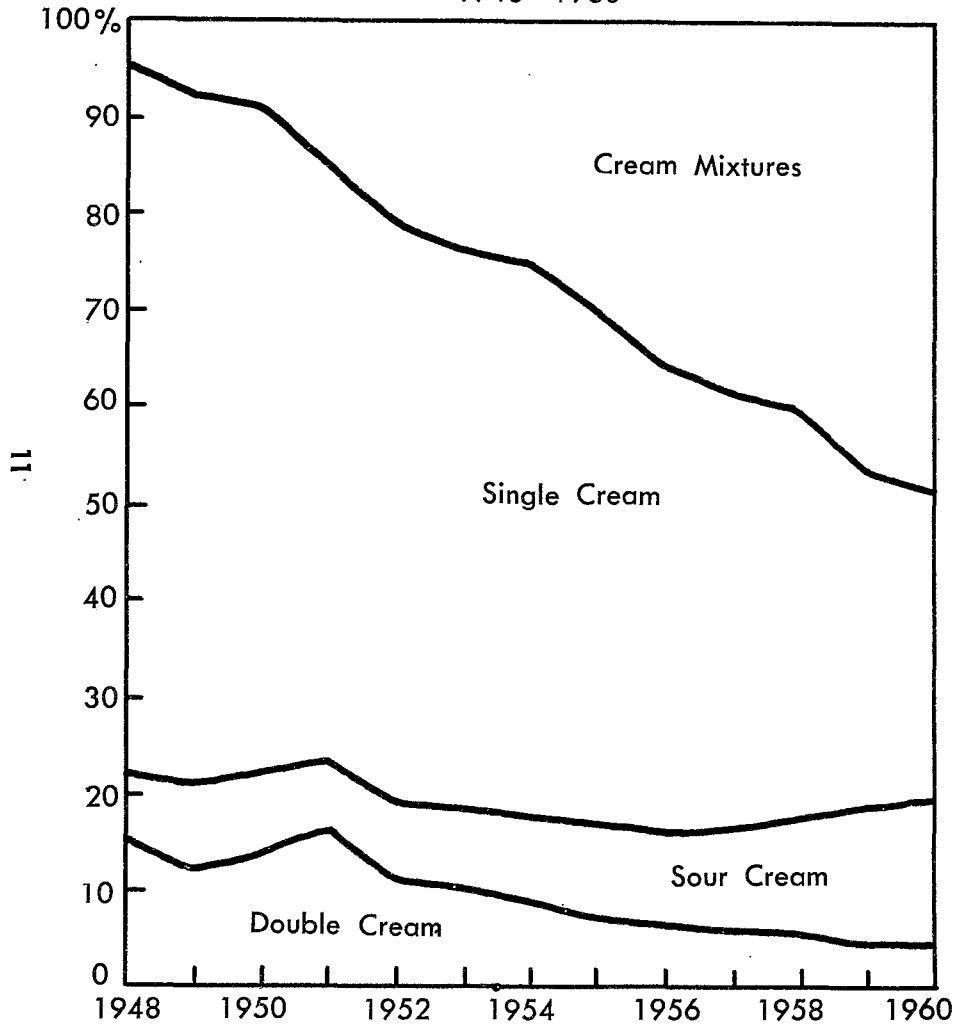


CHART IV
 Percentage Distribution, Average Daily Cream
 Sales, Columbus Milk Market, 1948 - 1960

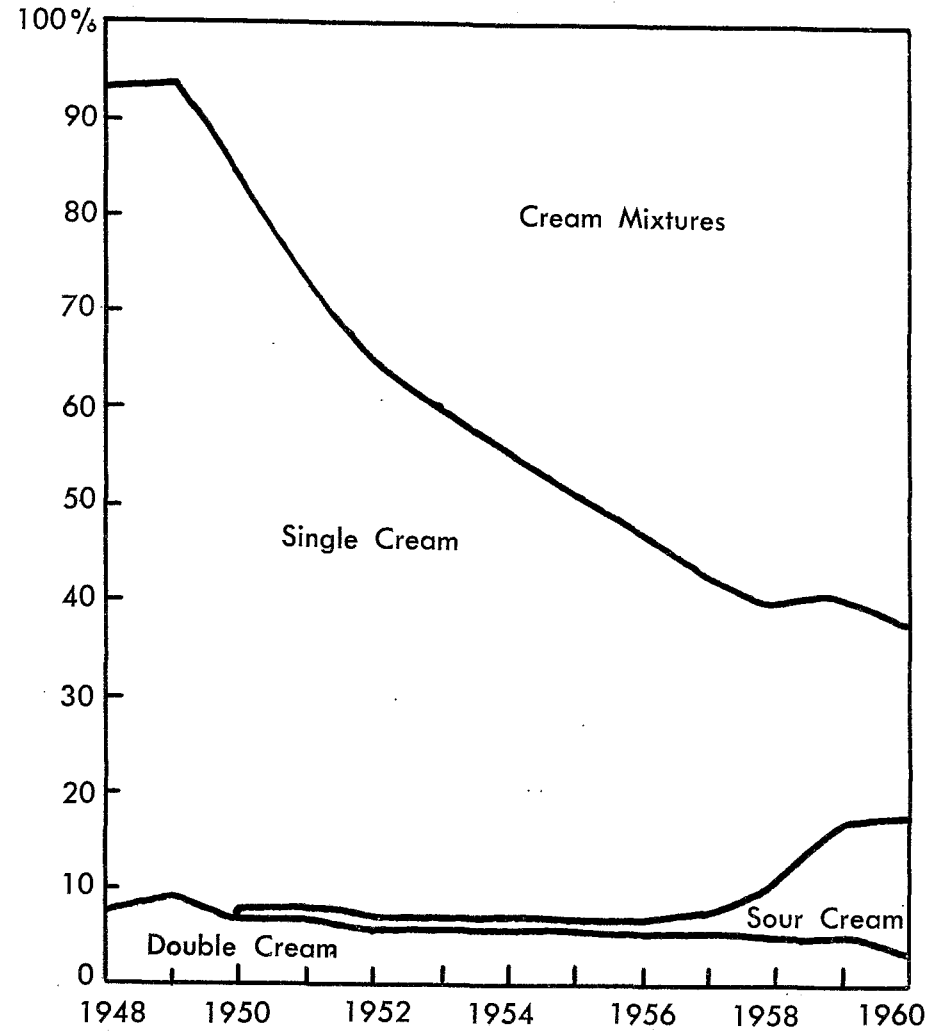


CHART V
 Percentage Distribution, Average Daily Cream
 Sales, Dayton-Springfield Milk Market
 1948 - 1960

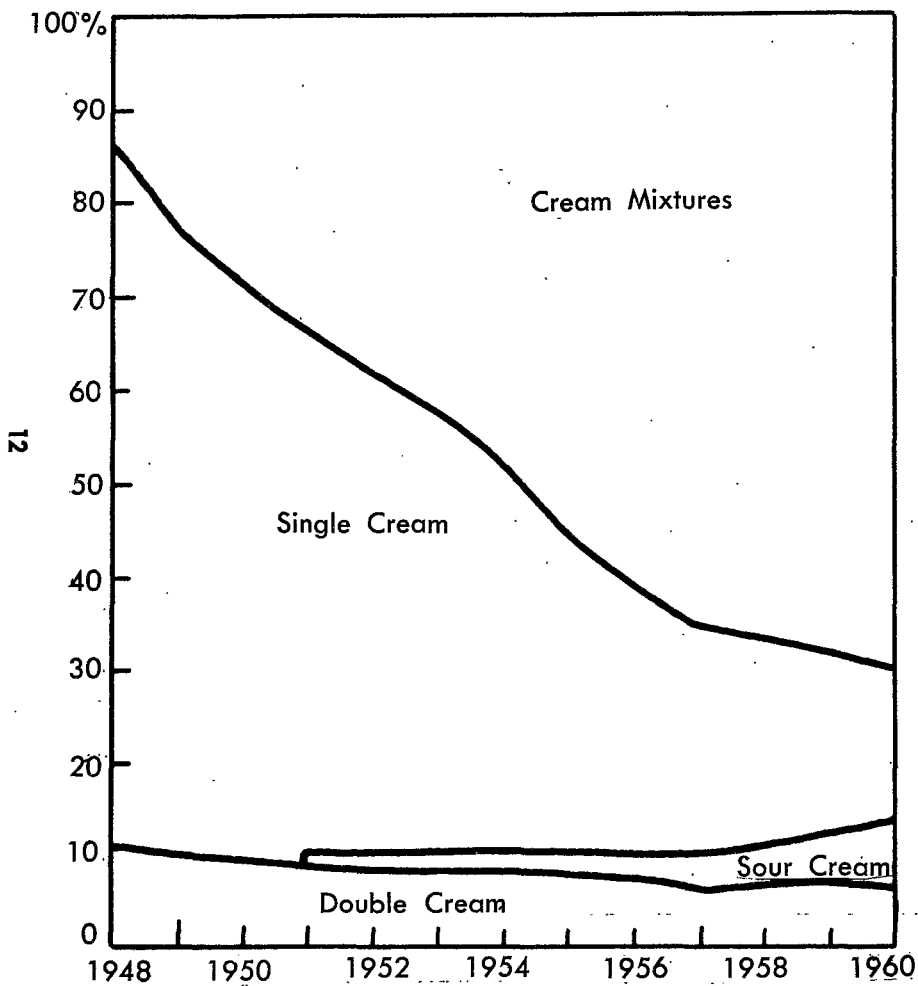
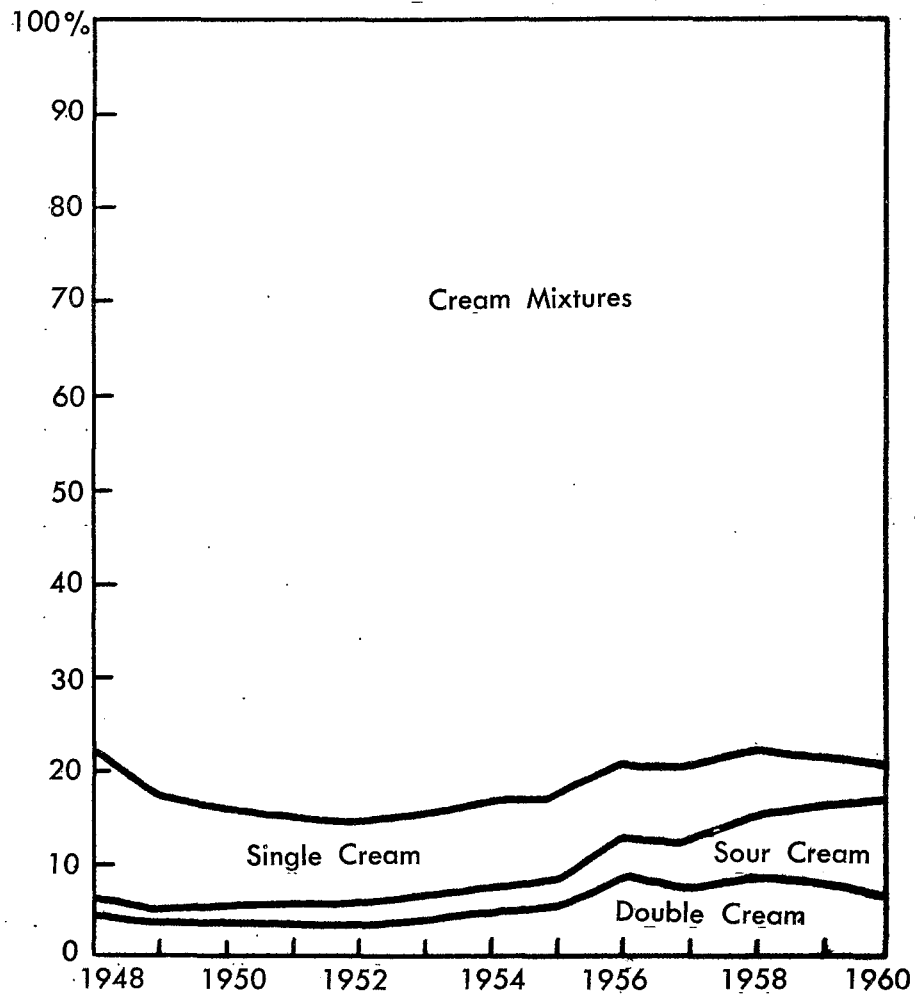


CHART VI
 Percentage Distribution, Average Daily Cream
 Sales, Toledo Milk Market
 1948 - 1960



pared to the milkfat content of other Class I dairy products.

Cream sales as a percentage of total fluid milk utilization have decreased significantly since 1948.

Table XII. —Total Pounds of Cream Sold as a Percentage of the Total Pounds of Producer Receipts, by Market, Five Ohio Milk Markets, 1948 – 1960

Year	Market					Average*
	Cincinnati	Cleveland	Columbus	Dayton-Springfield	Toledo	
1948	1.86%	3.06%	2.62%	2.20%	6.44%	2.94%
1950	1.55	2.77	2.31	2.02	5.50	2.61
1952	1.49	2.31	2.20	1.75	4.94	2.30
1954	1.27	1.96	1.74	1.60	3.56	1.91
1956	1.30	2.09	1.86	1.62	3.45	1.98
1958	1.40	1.71	2.03	1.64	2.91	1.82
1960	1.39	1.92	2.16	1.40	2.60	1.84

*Weighted average

Source: Federal Milk Market Administrators: Cincinnati, Cleveland, Columbus, Dayton, and Toledo, Ohio

Table XIII. —Total Pounds of Milkfat Utilized in Cream as a Percentage of the Total Pounds of Milkfat Received from Producers, by Market, Five Ohio Milk Markets, 1948 – 1960

Year	Market					Average*
	Cincinnati	Cleveland	Columbus	Dayton-Springfield	Toledo	
1948	9.10%	16.46%	11.88%	10.55%	22.18%	13.88%
1950	7.52	14.71	10.02	9.19	18.17	11.98
1952	7.05	11.33	8.96	7.56	16.25	10.08
1954	5.86	9.24	7.01	6.77	12.55	8.21
1956	5.79	9.37	7.59	6.71	12.77	8.39
1958	5.94	7.52	8.03	6.63	10.95	7.54
1960	5.60	7.41	8.34	5.56	8.59	7.01

*Weighted average

Source: Federal Milk Market Administrators: Cincinnati, Cleveland, Columbus, Dayton, and Toledo, Ohio.

CREAM SALES IN RELATION TO FLUID MILK UTILIZATION

The relationship between cream sales and fluid milk utilization in terms of product pounds and milkfat pounds was the second comparison used to determine the significance of the changes in cream sales, Tables XIV and XV. If changes in the sales of cream products have paralleled changes in the sales of all fluid milk products, the percentage relationship between the two would be relatively constant.

For the five milk markets combined cream sales were 3.92 percent of fluid milk utilization in 1948 compared with 2.42 percent in 1960. Cream sales in 1948 accounted for 17.47 percent of the milkfat utilized in fluid milk products, but by 1960 this value had declined to 9.80 percent.

Each individual market has experienced the same general trend, although to varying degrees. In the Cincinnati, Cleveland, Columbus and Dayton-Springfield markets the relationship between cream sales and fluid milk utilization since 1953 has been relatively stable. The Toledo market has experienced the largest decrease in the relative importance of cream sales as a percentage of fluid milk sales.

Table XIV. —Total Pounds of Cream Sold as a Percentage of the Total Pounds of Fluid Milk Utilization, by Market, Five Ohio Milk Markets, 1948 – 1960

Year	Market					Average*
	Cincinnati	Cleveland	Columbus	Dayton-Springfield	Toledo	
1948	3.28%	3.94%	3.37%	2.64%	6.89%	3.92%
1950	2.74	3.69	3.12	2.65	6.21	3.61
1952	2.15	3.33	2.88	2.27	4.99	3.11
1954	2.00	3.02	2.45	2.16	4.14	2.77
1956	1.97	2.74	2.51	2.15	3.77	2.61
1958	2.08	2.43	2.55	2.14	3.24	2.46
1960	1.99	2.53	2.73	1.89	3.07	2.42

*Weighted average

Source: Federal Milk Market Administrators: Cincinnati, Cleveland, Columbus, Dayton, and Toledo, Ohio

Table XV. —Total Pounds of Milkfat Utilized in Cream as a Percentage of the Total Pounds of Milkfat Utilized in Fluid Milk, by Market, Five Ohio Milk Markets, 1948 – 1960

Year	Market					Average*
	Cincinnati	Cleveland	Columbus	Dayton-Springfield	Toledo	
1948	16.03%	19.42%	15.51%	12.16%	21.33%	17.47%
1950	13.60	18.06	13.93	11.70	18.98	15.94
1952	10.64	15.35	11.82	9.70	15.58	13.29
1954	9.68	13.62	10.09	9.08	14.05	11.78
1956	9.18	11.86	10.27	9.18	13.46	11.04
1958	9.37	10.59	10.43	9.13	12.11	10.37
1960	8.40	10.60	11.11	7.97	10.25	9.80

*Weighted average

Source: Federal Milk Market Administrators: Cincinnati, Cleveland, Columbus, Dayton and Toledo, Ohio

SEASONAL VARIATION OF CREAM SALES

A knowledge of the seasonality of cream sales is important to milk handlers for two reasons. It is useful in timing sales promotional campaigns for these products. Handlers might promote a product to even out its seasonal sales pattern or to take advantage of the factors that contribute to the peak sales periods, depending on the objectives of the promotional program. This is especially important for by-products, as the various cream products, where sales promotions are usually sporadic.

It has been indicated, (Table XIII), that 7.5 percent of the milkfat received from producers in 1958 was utilized in cream products. Therefore, the seasonality of cream sales and its relation to the seasonality of producer receipts is of some importance, especially for handlers that utilize a large portion of their producer milkfat receipts in Class I.

The seasonality of total cream sales for each market is shown graphically in Chart VII. The seasonality of cream sales correlates well among the five markets. In each market cream sales were at their lowest level in July and at their highest level in December.

CHART VII
 Seasonal Pattern, Average Daily Cream Sales, Cincinnati,
 Cleveland, Columbus, Dayton-Springfield and Toledo
 Milk Markets, 1948 - 1958

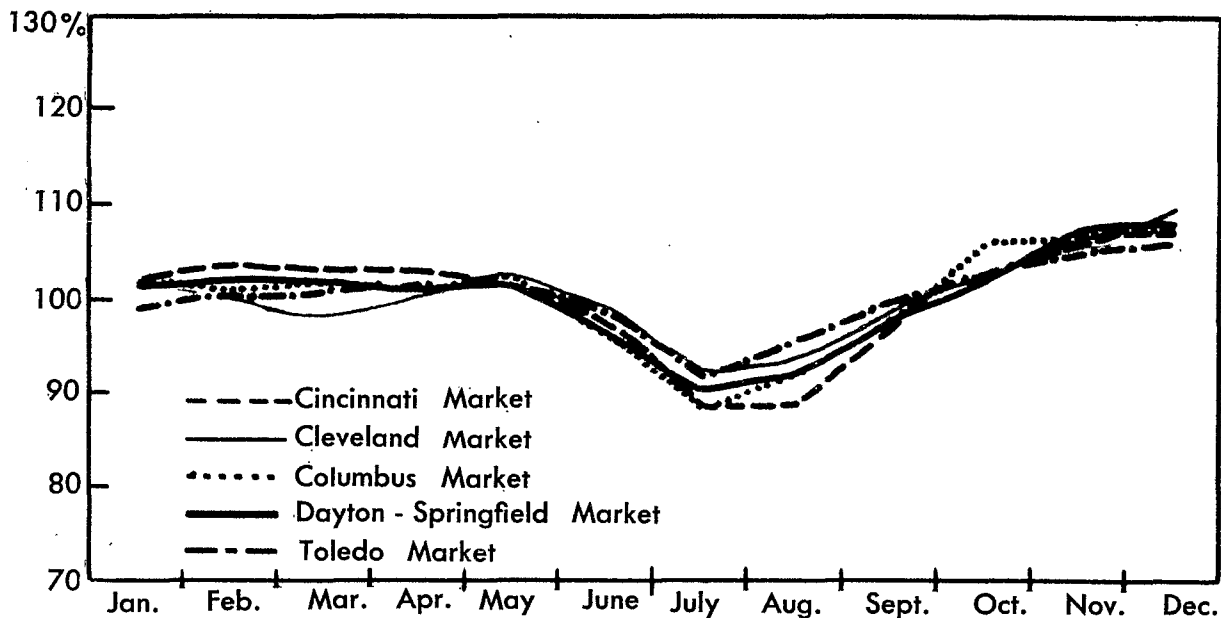
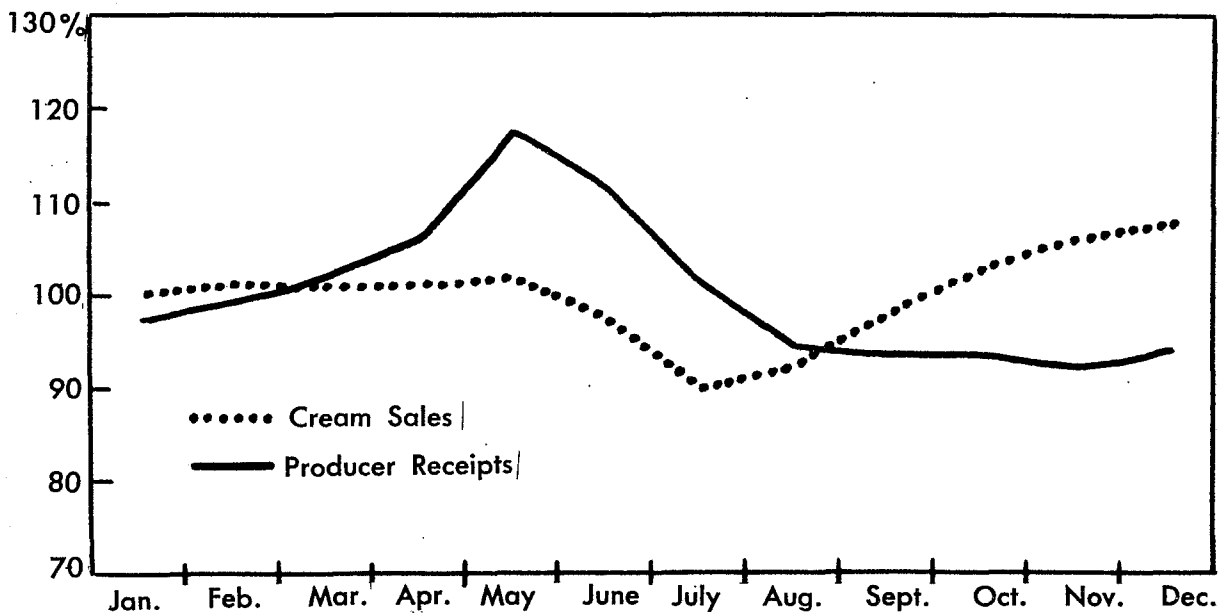


CHART VIII
 Seasonal Pattern, Average Daily Producer Receipts and Average
 Daily Cream Sales, Five Ohio Milk Markets Combined, 1948 - 1958



rated this product 4.8 compared to a 3.6 rating by handlers that carried the product. A rating of 5 was the lowest possible.

One third of the handlers interviewed have dropped high fat milk from their product line since 1945. The main reason given by handlers for discontinuing high

Table XVI. --Handlers' Opinions Toward the Sales Potential of High Fat Fluid Milk Products, 30 Ohio Handlers, by Handler Classification, Five Ohio Milk Markets, Autumn, 1959

(Sales Potential Rank)*

High Fat Fluid Milk Products	Handler Classification		
	Three Largest Handlers	Randomly Selected Handlers	All Handlers Interviewed
Cream Mixtures	1	2	1
Sour Cream	2	1	1
Single Cream	3	3	3
Double Cream	4	5	4
High Fat Milk	5	4	5

*Each Handler ranked the products one through five with the rating of one given to the product with the largest sales potential and five to the product with the smallest sales potential. The lower the value the higher rank and vice-versa.

Source: Primary data

Attitudes toward the sales potential of high fat milk were also determined by inquiring as to whether changes, either reducing the fat content, changing the product name, or dropping the product, had been made in the company's sales policy since 1945, Table XVII.

fat milk was declining sales volume making the product unprofitable. The handlers that reduced the milkfat content or changed the name of their high fat milk gave increased diet consciousness as their main reason.

Table XVII. --Status of High Fat Milk in 30 Selected Ohio Milk Plants, Five Ohio Milk Markets, 1945 - 1959

High Fat Milk Status	Number of Handlers
Presently handle high fat milk:	
Have not changed product since 1945	10
Changed product by reducing milkfat content	2
Changed product in name only	2
Changed product name and reduced milkfat content	2
Discontinued high fat milk since 1945	10
Have not handled high fat milk since 1945	4

Source: Primary data

The relationship between the seasonality of cream sales and the seasonality of producer receipts is shown graphically for the five markets combined in Chart VIII. The extreme seasonal nature of producer receipts in the spring makes this the period when excess milkfat supplies are likely to occur. In contrast, the seasonal pattern of cream sales in the fall is upward, while producer receipts are generally decreasing. It is during this period that handlers are most likely to need milkfat supplies from other sources.

The seasonal sales pattern for each individual cream product is shown graphically for two Ohio milk markets, Cincinnati and Toledo, in Charts IX through XII. The seasonal sales pattern of cream mixtures and single cream follow closely the seasonal pattern of total cream sales. This was to be expected because throughout the years these two products have been responsible for a large portion of the total cream sold in the two markets. The seasonal variation of cream mixtures was the smallest of the four cream products.

The seasonal sales pattern of double cream, Chart XI, shows extreme variation between the high and low sales periods. Even with this large seasonal fluctuation, the double cream seasonal sales pattern is similar to the pattern shown by total cream sales, cream mixture sales, and single cream sales. This is true because of the low sales period in July and August and the increase in sales during the months of November and December.

The seasonal sales pattern of sour cream, like double cream, fluctuates considerably, (Chart XII), but the seasonal sales pattern of sour cream does not parallel the seasonal sales pattern of total cream sales. Sour cream sales were at their peak during the summer months of July and August. This was the period when the other cream products experience their lowest sales level. The low point of sour cream sales occurred during January and February with a second low period occurring during October and November.

A word of caution with regard to the seasonality of sour cream sales is in order. It was previously indicated that prior to 1957 this product was not well established in these markets. Consequently, with the rapid growth that this product has experienced since 1957 due to a multitude of new uses for sour cream and the consumer's education to these uses, it is probable that the established seasonal pattern will change with time. Especially important is the promotional programs of handlers which could alter substantially the seasonal sales pattern of this product.

HANDLERS' ATTITUDES TOWARD HIGH FAT FLUID MILK PRODUCTS

The success of any product in today's market is partially dependent on the attitude of the product's manufacturer. For this reason the determination of handlers' attitudes toward high fat fluid milk products was the second phase of this study. These attitudes are an important factor in determining the future for these products.

A distinction will be made between the replies received from the largest handlers in each market and replies received from the randomly selected handlers when differences in responses are significant. For the most part the handlers selected at random were relatively small compared to the markets' three largest handlers.

Product Sales Potential

Handlers' attitudes toward the sales potential of the various high fat fluid milk products were determined by having the handlers rank in order the products they believed to have the largest potential for increased sales, Table XVI. Handlers ranked cream mixtures and sour cream as having the largest sales potential. These products were followed by single cream, double cream, and high fat milk. A few differences can be noted between the ratings given by the largest and randomly selected handlers. Little difference was noted in the ranking of these products among the five individual markets.

The sales potential rating of these high fat fluid milk products, generally followed the product's sales pattern since 1948. The two products, sour cream and cream mixtures, considered to have the greatest sales potential have generally shown sales gains from their 1948 level. The other products, whose sales potentials were ranked relatively low, have generally shown sales declines.

In most instances the handlers interviewed carried the five products studied. Each handler carried sour cream, double cream, and single cream. Two handlers did not carry cream mixtures, and 13 handlers, or nearly one half of the handlers interviewed, did not carry a high fat milk. The tendency for handlers to have high fat milk as a part of their product line was larger among the handlers selected at random.

Significant differences existed in handlers' opinions about the sales potential of high fat milk depending on whether the product was carried by the handler. Handlers that did not carry high fat milk

CHART IX

Seasonal Pattern, Cream Mixture Sales, Cincinnati and Toledo Markets 1948 - 1958

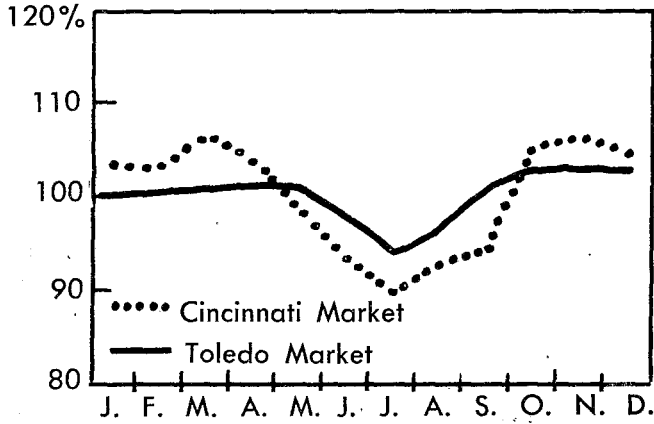


CHART X

Seasonal Pattern, Single Cream Sales, Cincinnati and Toledo Markets 1948 - 1958

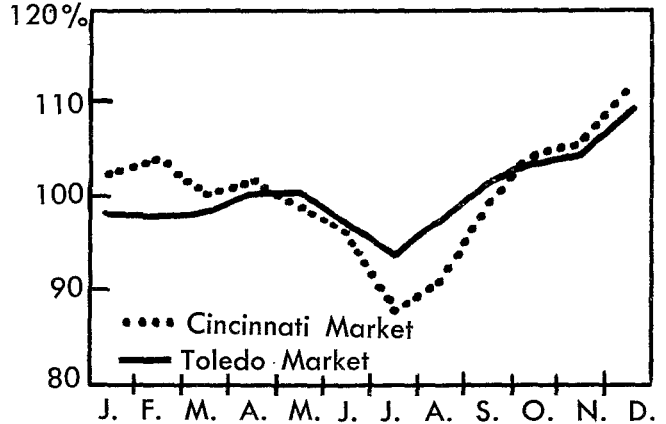


CHART XI

Seasonal Pattern, Double Cream Sales, Cincinnati and Toledo Markets 1948 - 1958

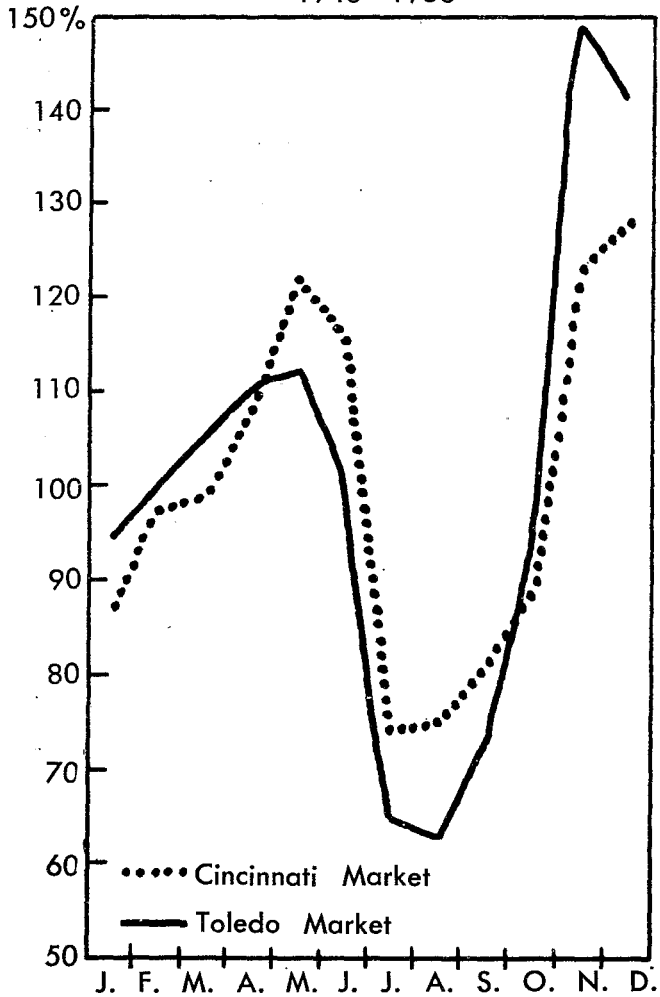
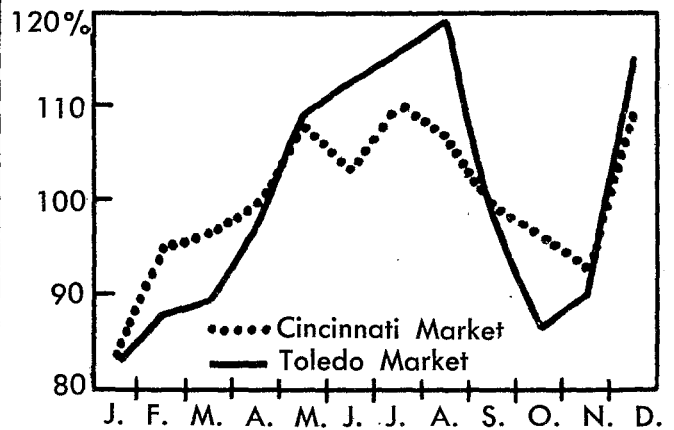


CHART XII

Seasonal Pattern, Sour Cream Sales, Cincinnati and Toledo Markets 1948 - 1958



losing product, and about two thirds said that high fat milk and double cream were not money making products. Except for high fat milk, the three largest handlers per market rated the profitability of these products higher than the randomly selected handlers.

sizes increased the plant down and change-over time, increased storage requirements, and increased the container and finished product inventory requirements.

A detailed analysis was made of one handlers'

Table XIX. --Handlers' Reasons for Carrying High Fat Fluid Milk Products, Five Ohio Milk Markets, Autumn, 1959

(Weighted response frequency)*

High Fat Fluid Milk Products	Reasons for Handling Products		
	Profitable to company	Customer Service	Competitively Necessary
High fat milk	7	23	7
Cream mixtures	26	33	23
Single cream	20	36	24
Double cream	19	35	25
Sour cream	27	36	25

*A weight of two was given to emphasized reasons and a weight of one if a reason was given but not emphasized.

Source: Primary data

Table XX. --Handlers' Attitudes Toward the Profitability of High Fat Fluid Milk Products, Five Ohio Milk Markets, Autumn, 1959
(Response frequency)

High Fat Fluid Milk Product	Profitable Product	Breakeven Product	Unprofitable Product
High Fat Milk	5	7	4
Cream Mixtures	25	2	0
Single Cream	19	7	3
Double Cream	11	10	8
Sour Cream	25	4	0

Source: Primary data

The reasons given for low profitability, Table XXI, stem from three main factors: low volume, large percentage returns, and the numerous items handled. Handlers considered lack of adequate volume as the most important reason because low volume increases all production and distribution costs per unit.

Large returns presented problems because fat losses occur in dumping products, extra handling and record keeping are involved, and the container is lost if paper cartons are used. The most persistent offender was double cream which often had a 50 percent return percentage. The use of many container types and

pricing policy, Table XXII. This handler was a price leader in the market and compensated himself for the higher costs associated with high fat fluid milk products by obtaining a larger mark-up percentage over raw product cost for these products than for homogenized milk. From the discussion on product profitability it is evident that in many instances handlers did not consider these higher margins adequate. On the premise that it is desirable that these products be profitable, various alternatives available to handlers were suggested for their comment.

Ten respondents indicated no change in their sales program with respect to high fat milk since 1945, but three of these revealed that they were presently considering discontinuing the product. To avoid discontinuance of the product some handlers have changed the emphasis from one of a high fat product to one of a high quality product. This has been done by changing the product's name, homogenizing the product, and/or reducing the milkfat content.

Changes in other high fat fluid milk products have not been as numerous, Table XVIII. Many handlers have added sour cream since 1949. Also, two related cream products not covered in this study, aerated and sterile cream, have been added by a few dairies. Under the category of cream products dropped, all cream products in glass containers were the most often mentioned.

Handlers' reasons for these attitudes on the sales potential of high fat fluid milk products were ascertained. These reasons also help explain why these products have experienced their respective sales trends since 1948.

Diet consciousness was the main factor listed as being responsible for limited high fat milk and single cream sales. Diet consciousness has shifted many customers from single cream to cream mixtures accounting for the large cream mixture sales potential. It should be noted that price was not mentioned as a deterrent to the sales of high fat milk and single cream.

this product. Diet consciousness was named as one factor responsible for limited double cream sales, but the increased use and acceptance of aerated cream, due to the convenience of preparation, was listed as the main factor causing this trend.

Reasons for Handling Products

The reasons why high fat fluid milk products were handled by the company gave another indication of handlers' attitudes toward these products, Table XIX. Three possible reasons were suggested, and handlers were asked to mention for each product any and all the reasons that were applicable. The suggested reasons were (1) provides a desired customer service, (2) profitable to the company, and (3) competitively necessary.

Providing a desired customer service was the main reason for handling each of these products. Profitability and competitive necessity were mentioned less frequently. Profitability as a reason was relatively unimportant for single and double cream. For high fat milk competitive necessity and profitability were extremely unimportant.

Product Profitability

The attitudes of handlers with respect to the profitability of high fat fluid milk products in their firm were determined by having them rate each product as a money making, a breakeven, or a money losing

Table XVIII. -Changes in Status of Cream Products in 30 Selected Ohio Milk Plants, Five Ohio Milk Markets, 1949 - 1959

Products Added	Number of Plants	Products Dropped	Number of Plants
Single cream	1	Cream mixtures - one-half gallon	1
Cream mixtures	2	Single cream - pints	1
Sterile cream	2	Single cream - all containers	1
Aerated cream	4	Double cream - quarts	1
Sour cream*	11	All cream in glass containers	3

*Includes potato chip dip which had been added by nine dairies during this period.

Source: Primary data

The large sales potential for sour cream was mainly attributed to increased consumer knowledge of the product's uses. The use of flavored sour cream as a party dip has also enhanced the sales potential of

product, Table XX. Handlers generally agreed that cream mixtures and sour cream were profitable items. Approximately one third of the respondents considered single cream either a breakeven or money

Possible Alternative Action

Handlers were asked to relate the desirability and feasibility of various alternative courses of action when high fat fluid milk products were not profitable. These alternatives included: (1) increasing the price to the consumer, (2) dropping the unprofitable item, (3) continuing to sell the product at a loss, and (4) having a competitor process the unprofitable item for the handler. Alternative number four may be termed cooperative bottling.

Handlers relate that carrying these products at a loss was undesirable, but commented, that little, if anything, could be done to remedy the problem. This was because competition forced them into the situation. Consequently, this alternative was often followed.

Little interest, except in the Columbus market, was shown toward cooperative bottling. The interest shown was with particular reference to two low volume products, single and double cream. There was no agreement as to the economic feasibility of a cooperative bottling arrangement. Handlers recognized the possible cost savings due to the increased volume

Table XXI. --Handlers' Reasons for Low Profitability Ratings Given to High Fat Fluid Milk Products, Five Ohio Milk Markets, Autumn, 1959

-
- I. Lack of Volume:
 - A. All production and distribution costs are higher per unit.
 - 1. Large amount of down time caused by change-overs and wash-ups.
 - 2. Extra storage tanks required that are not used to capacity.
 - 3. Small containers used for these products increases production costs per unit.
 - 4. Container costs are relatively higher for the volume processed.
 - 5. Special handling of products due to lower keeping quality and low rate of turn-over.
 - 6. Cooler space is not efficiently used due to low volume.
 - 7. Dry storage space cannot be used efficiently on low turn-over, low volume items.
 - 8. Requires extra laboratory work to keep the quality high.
 - 9. Relatively large product loss in pipelines and other equipment.
 - II. Large Percentage Returns:
 - A. Large fat loss in dumping returns.
 - B. Extra handling involved with returns.
 - C. Extra record keeping involved.
 - D. Loss of containers when product is dumped.
 - III. Numerous Number of Items, Container Sizes and Types:
 - A. Large inventory requirements (containers, hoods, caps, finished product).
 - B. Increases plant down and change-over time.
 - C. Increases storage space requirements in the milk cooler.
-

Source: Primary data

Handlers indicated that from their standpoint the most desirable alternative would be to increase the price. However, they were quick to indicate their belief that any price increase must be market-wide due to possible competitive consequences. Attitudes toward discontinuing the unprofitable items followed closely the attitudes expressed regarding possible price increases. Handlers generally indicated that, due to competition, these products could be dropped only on a market-wide basis.

processed and packaged at one location, but many indicated that these savings would be completely offset by the increased costs incurred, as additional transportation cost.

Table XXII. --Percentage Mark-Up over Raw Product Cost, Selected Dairy Products and Container Sizes, by Retail and Wholesale Distribution, One Ohio Milk Handler, May, 1959

Product and Container Size	Percentage Mark-Up* by Type of Distribution	
	Retail	Wholesale
Homogenized Milk:		
Half pint	d.n.h.**	160.2%
Quart	149.5%	127.8
Half gallon	133.2	111.5
Cream Mixtures:		
Pint	173.4	155.1
Quart	159.7	146.1
Half gallon	d.n.h.**	118.7
Single Cream:		
Half pint	184.9	160.1
Quart	163.2	147.8
Half gallon	d.n.h.**	133.8
Double Cream:		
Half pint	207.9	185.9
Quart	178.6	160.2
Sour Cream:		
Eight ounce	259.5	206.3

*The percentage mark-up was calculated on products in paper containers with no discounts considered.

**d.n.h. - did not handle product for retail distribution on this particular container.

Source: Personal interview

CONCLUSIONS

On the basis of the findings in this study the following conclusions and suggestions are made:

1. Sales of mixtures and sour cream have generally increased since 1948. Handlers indicated that these products have greatest potential for increased sales.
2. Sales of high fat milk, single cream and double cream have generally decreased since 1948. Sales of these products can be expected to decline more slowly because consumers have had an opportunity to change their consumption habits. Future changes in the sales pattern of these products, therefore, depend largely on the practices and policies of handlers. Handlers generally indicated that these three products lacked sales potential.
3. Cream sales since 1948 have decreased in importance as a method of utilizing milk. This could have resulted in lower per hundredweight returns to producers due to a larger portion of producer receipts being utilized in the production of lower valued products.
4. Cream sales as a percentage of fluid milk utilization have decreased since 1948 indicating a decline in the importance of high milkfat compared low milkfat fluid products.
5. The seasonal sales pattern of cream products indicated that:
 - a. total cream sales were at their lowest level in July and at their highest level in December.
 - b. cream mixtures, single cream and double cream had a seasonal sales pattern similar to total cream sales, but double cream showed a large

variation between the low and high sales periods.

c. it is probable that the seasonal sales pattern of sour cream will change with time due to the short period that this product has had significant consumer acceptance.

6. Providing a desired customer service was the main reason given by handlers for carrying high fat fluid milk products. Profitability and competitive necessity were mentioned less frequently.
7. Handlers generally agreed that cream mixtures and sour cream were profitable dairy products, but high fat milk, single cream and double cream were breakeven or unprofitable items for many handlers.
8. Low volume was the most important factor that caused high fat milk, single cream and double cream to be unprofitable. Other contributing causes were large returns and the numerous items handled.
9. Handlers obtained a higher percentage mark-up over raw product cost for high fat fluid milk products than for homogenized milk, but many indicated that these higher margins were not adequate to make these products profitable.
10. Handlers feared competitive consequences if their cream products were priced above competitors' product. These fears are thought to be somewhat unjustified because it has been pointed out in other research that: (1) consumers are largely unaware of the price paid for dairy products and (2) the price competition on by-products is not as keen as it is on 3.5 percent homogenized milk. Increasing the price to improve product profitability is especially applicable to home delivery distribution.
11. Handlers generally believed that due to competition, these products could be discontinued only on a market-wide basis. If three prerequisites apply, (1) the product is unprofitable due to low volume, (2) the product's profitability status is not likely to improve in the future and (3) substitute products are available, then discontinuing unprofitable items should be considered. Of the products studied these prerequisites are most likely to apply to high fat milk, single cream and double cream.
12. Handlers generally showed a lack of interest in cooperative bottling, but the possibility of developing such a program should be fully investigated. This is an area where further study and research is needed to clearly define its economic feasibility.
13. Product consolidation (the addition of one new product and the elimination of two presently carried products) to improve product profitability should be considered. For example, some handlers have found it profitable to combine their high fat milk and regular creamline milk into one product testing 3.7 percent butterfat.
14. Reducing the number of container types and sizes in which these products are packaged and distributed provides another method to improve product profitability. It is suggested that high fat fluid milk products be handled in only one container type, paper or glass, and in a maximum of two container sizes, excluding bulk. This would reduce the number of items carried by many handlers without reducing the actual products offered to the consumer.

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