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PROBLEMS OF MINNESOTA COOPERATIVE CREAMERIES

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The early years of cooperative creameries in Minnesota were marked by a very rapid increase in the number of plants in operation. The first creamery was organized in 1889 and a few creameries were established each succeeding year until about 1892. The period from 1892 to 1900 was one of very rapid development, during which the number of cooperative creameries increased at a rate in excess of fifty per year. This increase continued at an appreciable rate until 1915 when 655 cooperative creameries were in operation. Since that time the number has increased slowly and in 1929 there were 677 cooperative creameries in operation.

Although the increase in the number of cooperative creameries practically stopped about 1915, the total amount of butter manufactured by these creameries has continued to increase. In 1915 the total production of 655 cooperative creameries was 76,767,006 pounds of butter, an average of 117,201 pounds per creamery. The total production had increased by 1929, to 198,640,915 pounds, the number of creameries to 667, and the average output per creamery to 297,812. An increase of less than two per cent in the number of creameries was accompanied by an increase of 159 per cent in the total production of butter. The average size of creamery, measured by butter manufactured, increased 154 per cent from 1915 to 1919.

The increase in the average size of Minnesota cooperative creameries has been due partly to the development of a few very large cooperative creameries. Six of 430 creameries, for which records were available, made over a million pounds of butter in 1930. The typical Minnesota cooperative creamery, however, is still relatively small, and almost sixty per cent of them make less than 300,000 pounds of butter annually. Only about six per cent make less than 100,000 pounds of butter per year. In Table 1 these 430 creameries are classified according to size.

Table 1. Classification of 430 Minnesota Cooperative Creameries According to Pounds of Butter Churned in 1930

Butter Churned Thousands of Pounds	Number of Creameries	Per cent of Creameries	Butter Churned Thousands of Pounds	Number of Creameries	Per cent of Creameries
0 - 100	26	6.05	600 - 700	16	3.72
100 - 200	130	30.23	700 - 800	4	.93
200 - 300	96	22.33	800 - 900	5	1.16
300 - 400	76	17.67	900 -1,000	2	.46
400 - 500	42	9.77	1,000 & over	6	1.39
500 - 600	27	6.28			

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The wide variation in the size of cooperative creameries raises the question of the comparative efficiency of creameries making different amounts of butter. Three ways have been suggested by which volume of output may affect creamery efficiency.

Volume of Output and Costs

The total manufacturing expense in making butter at 100 Minnesota cooperative creameries in 1929 was 3.17 cents per pound, while the total expense was 3.88 cents. In Table 2 these 100 creameries are grouped according to pounds of butter churned and the effect of volume on cost of making a pound of butter is indicated. The items of expense are classified under three headings. Manufacturing expense includes all items such as creamery labor, supplies, repairs, fuel, light, water and power, and other expenses which enter directly into the cost of making butter. General expense includes items like taxes, insurance, office expense and other items entering only indirectly into the cost of making butter. Financing expense is made up chiefly of interest paid on indebtedness and dividends paid on capital stock. A wide variation is noted in the financing expense of the creameries studied.

Table 2. Cost of Manufacturing a Pound of Butter as Calculated from the Annual Reports of 100 Minnesota Cooperative Creameries, 1929 (cents per pound)

Butter Manufactured Thousands of Pounds	Number of Creameries	Creamery Labor	Creamery Supplies	Other Manufacturing Expense	Total Manufacturing Expense	Other Salaries Office Expense	Taxes & Insurance	Financing Expense	Grand Total All Expense
0 - 200	12	1.60	1.05	1.17	3.82	.38	.22	.28	4.70
200 - 400	49	1.34	.96	.99	3.29	.38	.18	.20	4.05
400 - 600	30	1.15	.87	.77	2.79	.31	.15	.10	3.35
600 & over	9	1.04	.85	1.00	2.89	.39	.18	.10	3.56
All Creameries	100	1.29	.93	.95	3.17	.37	.17	.17	3.88

A consideration of the relation between volume of business and cost of manufacturing indicates in general that as the amount of butter churned increases, the cost of manufacturing decreases. In this study a difference of 1.14 cents per pound in favor of the large creameries was found. The slight increase in the total cost per pound for the largest group is doubtless due, in part, to the larger proportion of these creameries drying buttermilk. This is indicated by the high fuel cost of these creameries. The office expense for these larger creameries is also slightly higher.

Volume of Output and Price Received for Butter Shipped

The price received for butter shipped is of more significance in judging creamery efficiency than the price received for all butter. The latter price may be affected greatly by what the creamery charges for patrons' butter, and for butter sold locally. For this reason, the price received for butter shipped was used. These prices, calculated from the annual reports of 355 Minnesota cooperative creameries for 1930 are given in Table 3. This table shows the same relation between volume of output and efficiency as that indicated by Table 2 showing costs. The very small creameries operated at a decided disadvantage. However, this disadvantage becomes less and less as the creamery increases its output.

Table 3. Net Price Received for Butter Shipped by 355 Minnesota Cooperative Creameries, 1930

Butter Churned Thousands of Pounds	Number of Creameries	Average Price per Pound	Butter Churned Thousands of Pounds	Number of Creameries	Average Price per Pound
0 - 100	22	33.25	600 - 700	12	34.69
100 - 200	104	33.96	700 - 800	4	34.12
200 - 300	78	34.02	800 - 900	5	35.01
300 - 400	64	34.29	900 -1,000	2	34.75
400 - 500	35	34.27	1,000 & over	6	34.52
500 - 600	23	34.59	All creameries	355	34.12

Disposal of By-Products

It has been suggested that through a large volume of business a more profitable disposal of creamery by-products might be made. In nearly all districts where hogs are raised the usual method of disposing of the buttermilk is to sell it in liquid form to farmers for hog feeding purposes. One of the principal items of business at the annual meetings of many cooperative creamery associations is the disposal of the buttermilk which usually goes to the highest bidder. Where such a market for the buttermilk prevails, the returns for this by-product compare very favorably with those obtained where individual driers have been installed.

In some areas, however, where hog raising is not general, some other method of handling the buttermilk must be devised. Drying equipment is much too expensive to warrant its purchase for the average size plant. In one area where producers were faced with this problem, a federation of 18 creamery organizations constructed a central drying plant to handle the buttermilk from all of the member creameries. This has enabled small plants to take advantage of large scale operation in drying their buttermilk.

Financing May Affect Volume

As previously stated, there is a wide variation in the financing expense of individual creameries. Certain Minnesota cooperative creameries, especially some of the smaller and long established ones, have no financing expense. They have no indebtedness and in many instances pay no dividends on the capital stock because the stockholders are interested in the creamery as an outlet for their butterfat rather than as a place to invest funds. In some cases, all record of capital stock has been lost. These creameries are in a fortunate position as long as it is not necessary to make extensive improvements or repairs. If the creamery is without sufficient reserves to finance these expenses, it must cover them by reducing the price it pays for butterfat. If it is a small creamery with large neighboring creameries located at better trade centers, failure to "pay up" may cause a number of patrons to shift to these larger creameries. Organizations, which still owe for their buildings and are reducing their indebtedness through deductions from payments for butterfat, may experience this same difficulty. On the other hand, the method of financing used by an organization may strenthen its hold on its patrons. Provision for meeting obligations may be made before the expense of building, improvement or repairs is actually incurred. One method is through the sale of stock for cash, or for notes to be retired by deductions from payments for butterfat. The payment of these notes cannot be avoided by taking butterfat to another creamery.

Uniformity in Records Needed

An attempt to study many problems requiring solution in Minnesota creameries brings out repeatedly the inadequacy of records kept by a large share of cooperative organizations. At many creameries, the information concerning the year's business is quite incomplete. In a still larger number of organizations, the records kept do not lend themselves to accurate comparison with the information available from other creameries. Using the illustrations presented in this discussion, it is noted that the records for 430 creameries for 1930 were originally obtained. All of these associations reported the amount of butter churned, (Table 1) but from only 355 creameries, (Table 2) was it possible to determine the price received for butter shipped.

The records pertaining to costs are still more incomplete. Over 600 creamery reports for 1929 were examined and only 100 reports (less than 16 per cent) gave complete cost data.

When prices of butter are comparatively low, creamery organizations, cooperative and private alike should watch their costs, and familiarize themselves with all phases of their business. When the price of butter is high, or when the margin for operation is wide, small differences in costs may not be so important--but at present prices, and in times when every possible economy must be observed to ensure successful plant operation, complete data regarding the items which go to make up manufacturing expense are most essential.

The Minnesota Agriculture Dairy and Food Department has recently issued forms which should aid creameries in keeping their records for the year, and in compiling their own annual reports.

MINNESOTA FARM PRICES FOR AUGUST 1931

Prepared by D.D. Kittredge and A.A. Erickson

The index number of Minnesota farm prices for the month of August 1931 was 55.1 When the average of farm prices of the three Augustsof 1924-25-26 is represented by 100, the indexes for August of each year from 1924 to date are as follows:

August 1924 - 95.2
" 1925 - 104.2
" 1926 - 100.5
" 1927 - 99.9
" 1928 - 100.3
" 1929 - 104.2
" 1930 - 81.5*
" 1931 - 55.1*

*Preliminary

The price index of 55.1 for the past month is the net result of increases and decreases in the prices of farm products in August 1931 over the average of August 1924-25-26 weighted according to their relative importance. The decreases range from 68 per cent to 17. The products ranked according to the size of their percentage increases or decreases in this comparison are shown in the following list:

Principal Farm Products which Showed Decreases in August 1931 when Compared with the Average Prices in August 1924-25-26
(listed in descending order of percentage change)

Decreases:	Rye, wheat, corn, barley, oats, lambs-sheep, eggs, flax, hogs, butterfat, hay, calves, milk, potatoes, chickens, cattle.

Although the Minnesota index for August 1931 does not measure price changes from July 1931, a comparison of month to month changes in price has been made. The increases range from 13 per cent to 2, and the decreases from 15 per cent to 2. The products ranked according to the size of their percentage increases or decreases in August 1931 over July 1931 are shown in the following list:

Principal Farm Products which Showed Price Increases and Decreases in August 1931 when Compared with July 1931
(listed in descending order of percentage change)

Increases:	Rye, butterfat, eggs, chickens, milk, barley, calves, cattle, hogs.
Decreases:	Oats, flax, potatoes, hay, corn, lambs-sheep, wheat.