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# FARM BUSINESS NOTES

Prepared by the Divisions of Agricultural Economics and Agricultural Extension  
Paul E. Miller, Director Agricultural Extension

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## Operating Results of Minnesota Cooperative Oil Associations<sup>1</sup>

E. FRED KOLLER

Cooperative distribution of petroleum products and related supplies in Minnesota has expanded rapidly since 1921 when the first oil association was established in the state. By 1939 Minnesota had about 200 cooperative oil associations with total sales of approximately \$14,000,000. Analysis of the operating results of 92 of these associations selected from all parts of the state reveals that in general they rank among the most successful types of cooperative endeavor in this area.

### Operating Analysis

**Sales**—The average operating statement of the 92 cooperatives included in the analysis is shown in the first column of table 1. This statement shows that the 1938 sales averaged \$69,785 per association. Of these sales, 90.1 per cent represented petroleum supplies including gasoline, kerosene, oils, and greases. Non-petroleum supplies including tires, tubes, batteries, and other farm supplies constituted 9.9 per cent of all sales.

**Gross Margin**—Gross margin, or the difference between net sales and the cost of sales, averaged \$16,027 per association, or 22.97 per cent of sales. This item varied widely from a low of 14.9 per cent in one association to a high of 36.3 per cent in another. However, about one half of the associations fell in the class having gross margins of 20 to 23 per cent of sales. Gross margins varied widely for the various types of supplies. The margin on all petroleum products combined was 23.3 per cent, while all non-petroleum products showed an average of 19.8 per cent. Typical margins on important petroleum items were as follows: All gasoline, 22.0; kerosene, 23.9; distillate and tractor fuels, 20.2; lubricating oil, 41.7; and grease, 40.5 per cent.

**Operating expense**—An important factor in the successful operation of oil associations is the ability of the management to render adequate services at a low cost. Operating expenses for this group of associations averaged \$11,274, or 16.16 per cent of sales (table 1). In most associations operating expenses ranged from 12 to 20 per cent, although one association held these expenses to

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9.48 per cent of sales while in another they exceeded 30 per cent.

A number of factors account for the variations in operating expenses of these companies. Some of the variation is explained by differences in services rendered and methods of operation. Volume of business is another factor influencing costs. Operating expenses per dollar of sales tend to be smaller as sales

volume is increased. Highly important in controlling operating expenses is the effectiveness of the manager in utilizing supplies, physical facilities, and labor. An important aid to more efficient management is an adequate accounting system and periodic audits including comparisons and interpretations which may indicate points of weakness and strength in management.

**Net Income**—A valuable indicator of the general efficiency of cooperative oil associations is the amount of net income for each dollar of sales. Although oil associations should not attempt to build their net income at the expense of quality and service standards, a large net income is important since it represents the amount of savings available for patronage dividends or to build up the association's reserves or surplus. The net income of the associations in this study averaged \$5,015 per association and was equivalent to 7.18 cents per dollar of net sales. Net income of individual associations varied from a high of 13.13 per cent to a net loss of 4.55 per cent. The distribution of the 92 associations according to net income as a percentage of sales is shown in table 2.

Net income per dollar of sales varied significantly with sales volume. Nine associations with less than \$25,000 of sales for the year had only 0.94 per cent of net income per dollar of sales as compared with 10.14 per cent of net income in nine associations each having sales over \$125,000.

The net income of these associations was generally distributed in three ways: As (1) dividends on capital stock; (2) patronage dividends; and (3) additions to net worth reserves and surplus. For a group of 70 associations from which this information was available, the proportion of

<sup>1</sup> Assistance in the preparation of this material was furnished by the personnel of the Work Projects Administration, Official Project No. 65-1-71-140, Sub-project 420.

**Table 1. Average Operating Statements of 92 Minnesota Oil Associations, 1938**

Item	92 Asso- ciations	92 Asso- ciations	20 Highest return as- sociations	20 Lowest return as- sociations
	Dollars	Per cent of net sales		
Net Sales .....	69,785	100.00	100.00	100.00
Cost of Sales .....	53,758	77.03	73.20	80.56
<b>Gross Margin .....</b>	<b>16,027</b>	<b>22.97</b>	<b>26.80</b>	<b>19.44</b>
<b>Operating Expense:</b>				
Salaries and Commis- sions .....	6,673	9.56	10.25	10.37
Social Security Taxes.....	224	.32	.33	.34
Truck Expense .....	752	1.08	.78	.81
Supplies .....	156	.29	.30	.15
Fuel, Light, Power, Water .....	292	.42	.50	.42
Repairs .....	85	.12	.12	.16
Rent .....	156	.22	.11	.40
Local Taxes .....	292	.42	.43	.50
Depreciation .....	677	.97	.84	1.22
Insurance and Bonds.....	325	.47	.42	.60
Advertising .....	136	.20	.19	.24
Loss on Bad Accounts.....	92	.13	.06	.15
Directors' Fees and Ex- pense .....	166	.24	.17	.32
Office Salaries .....	375	.54	.63	.73
Office Supplies .....	168	.24	.28	.25
Telephone and Tele- graph .....	102	.15	.13	.22
Auditing .....	119	.17	.13	.26
Other Expense .....	484	.62	.42	1.48
<b>Total Operating Ex- pense .....</b>	<b>11,274</b>	<b>16.16</b>	<b>16.09</b>	<b>18.62</b>
Net Operating Income.....	4,753	6.81	10.71	.82
Other Income .....	685	.98	.82	.90
Other Deductions .....	423	.61	.38	1.18
<b>Total Net Income .....</b>	<b>5,015</b>	<b>7.18</b>	<b>11.15</b>	<b>.54</b>
<b>Average Net Sales Per Assn. ....</b>	<b>\$69,785</b>	<b>\$69,785</b>	<b>\$116,537</b>	<b>\$36,422</b>

net income distributed to capital stock was 6.3 per cent, to patronage dividends 81.9 per cent, and to reserves and surplus 11.8 per cent. Patronage dividend distributions of this group of associations represented 5.7 per cent of their net sales.

### Comparison of High and Low Return Associations

The average operating statements for 20 high return and 20 low return associations are also shown in table 1. These average statements are presented as an aid to individual associations in comparing the operating results

**Table 2. Distribution of 92 Minnesota Oil Associations According to Net Income as a Percentage of Sales, 1938**

Net income as per cent of sales	Number of associations	Per cent of associations
Net loss .....	6	6.52
0.0- 1.9 .....	11	11.96
2.0- 3.9 .....	13	14.13
4.0- 5.9 .....	16	17.39
6.0- 7.9 .....	22	23.91
8.0- 9.9 .....	14	15.22
10.0-11.9 .....	6	6.52
12.0-13.9 .....	4	4.35
<b>Total .....</b>	<b>92</b>	<b>100.00</b>

of their organization with those of associations which are distinctly above or below the average. The associations included in the high return and low return groups have been selected on the basis of net income per dollar of sales.

The average sales of the 20 high return associations are \$116,537 as compared with \$36,422 for the 20 low return associations and \$69,785 for the average of all. This further illustrates the relationship between the size of associations and net income.

The gross margin of the high return associations is distinctly higher than that of the low return group, being 26.80 and 19.44 per cent respectively. The difference may be explained in part by various factors such as the effect of local competition on pricing, price wars, shrinkage losses, difference in purchasing of merchandise, proportions in which products are handled, and differences in freight rates. The high return associations also had an advantage in operating expenses since these were only 16.09 cents per dollar of sales as compared with 18.62 cents in the low return companies. The variation may be accounted for by the advantage of larger size and more efficient management in the high return organizations. Average net income for the 20 high companies was 11.15 per cent of sales and that of the low return companies 0.54 per cent.

Analysis of the operating results of this large sample of oil cooperatives shows that in general they have developed an efficient system of purchasing and distributing an important group of farm supplies and at a substantial saving to Minnesota farmers. Although considerable progress has been made in improving the operations of this group of cooperatives, comparisons of the operating results show that much remains to be done in further improving the management and business methods of these organizations. To effect these improvements the combined effort of the local management, central cooperative wholesale organizations, research and business advisory services should be directed toward the problems involved. In particular, the use of comparative accounting analyses of operating statements and balance sheets as a guide to improvement in performance should be continued and broadened.<sup>2</sup>

## Earnings of Dairy Farmers in Southeastern Minnesota

G. A. POND and T. R. NODLAND<sup>3</sup>

A group of dairy farmers in southeastern Minnesota have been keeping complete farm business records for the past 12 years in cooperation with the University of Minnesota. The average number of farmers reporting was 145 per year; the average size of farm varied from 170 acres in 1928-29 to 241 acres in 1938 and 225 acres in 1939,

<sup>2</sup> This article has been confined to the analysis of results as shown by the operating statements. A future publication will include an analysis of the balance sheets of these associations.

<sup>3</sup> Assistance in the preparation of this material was furnished by the personnel of the Work Projects Administration, Official Project No. 65-1-71-140, Sub-project 468.

**Table 1. Earnings of Dairy Farmers in Southeastern Minnesota, 1928-1939 (per 100 acres in farm)**

	1928-29	1930-32	1933-37	1938	1939
<b>Receipts:</b>					
Dairy products .....	978	623	665	626	520
Cattle .....	443	241	258	348	361
Hogs .....	685	490	417	517	412
Sheep .....	31	20	73	90	96
Poultry and eggs .....	244	191	304	373	287
Crops .....	259	180	305	257	255
Miscellaneous .....	156	151	276	335	332
<b>Total cash receipts .....</b>	<b>2796</b>	<b>1896</b>	<b>2298</b>	<b>2546</b>	<b>2263</b>
Increase in inventory .....	363	—	276	—	396
Farm produce used in house .....	191	128	123	104	115
<b>Total income .....</b>	<b>3350</b>	<b>2024</b>	<b>2697</b>	<b>2650</b>	<b>2774</b>
<b>Expenses:</b>					
Power and machinery .....	389	273	348	409	380
Bldgs., fences, etc. ....	107	66	104	164	142
Hired labor .....	160	130	154	216	151
Feed .....	259	167	212	250	211
Livestock expense .....	39	37	32	54	49
Livestock purchases .....	179	118	177	219	259
Crop expense .....	109	91	83	115	104
Taxes, insurance, misc. ....	193	190	145	150	143
<b>Total cash expense .....</b>	<b>1435</b>	<b>1072</b>	<b>1255</b>	<b>1577</b>	<b>1439</b>
Decrease in inventory .....	—	389	—	9	—
Board of hired labor .....	60	48	56	72	57
Interest on farm capital .....	722	561	445	471	455
Unpaid family labor .....	211	151	112	96	105
<b>Total expenses .....</b>	<b>2428</b>	<b>2221</b>	<b>1868</b>	<b>2225</b>	<b>2056</b>
<b>Operator's Labor Earnings .....</b>	<b>922</b>	<b>-197</b>	<b>829</b>	<b>425</b>	<b>718</b>

because there was some change in the farms included from year to year.

An average earnings statement for these farmers is shown in table 1. These data are shown on the basis of 100 acres of land rather than on a per farm basis in order to eliminate the effect of differences in the average size of farm from year to year. Averages for 1928 and 1929 and for 1933 to 1937, periods of rising price levels, are shown; and also an average for 1930 to 1932, a period of sharply declining price levels. Figures for 1938 and 1939 are shown separately. The prices of most farm products trended downward during these last two years.

The earnings of these farmers are undoubtedly materially higher than those of all farmers in the area covered because, in general, only the better farmers will keep complete accounting records. However, it is probable that these figures represent fairly accurately the trends in earnings of dairy farmers in this section of the state for the past 12 years.

## Meat Consumed By Locker Patrons

A. A. DOWELL

Data on the kind and amount of meat consumed per capita by 145 Minnesota locker patrons were obtained for the year July 1, 1937 to June 30, 1938. The figures include the amount obtained from the locker and the amount obtained from other sources, including retail pur-

chases at butcher shops and meat slaughtered and used at home or obtained from neighbors.

Figures on the amount of meat consumed per person from the locker were obtained by taking an inventory of the contents of each locker at the beginning of the year, adding the amount handled by the plant for the patron during the year and subtracting the amount remaining in the locker at the end of the year as shown by the closing locker inventory. To this was added the kind and amount of meat obtained from other sources as reported on schedules filled out by the individual patrons.

A total of 827 persons were included in the families of these 145 patrons. Farm families averaged 5.7 persons per family and town families 5.0. Patrons living less than one mile from the plants were classed as town patrons, and those living more than one mile from the plants were classed as farm patrons.

The amount of meat consumed per capita was greater among farm than among town patrons. Town patrons consumed an average of 118 pounds of meat per capita from all sources. The per capita consumption of meat from all sources by farm patrons varied from 139 to 154 pounds. These totals include the lard from hogs handled by the plants and lard from hogs slaughtered and used at home, but do not include lard purchased at retail.

Town patrons consumed more beef per capita than pork while farm patrons consumed more pork than beef. Farm patrons used slightly more beef per capita than town patrons and considerably more pork and poultry. The amount of pork consumed from the locker increased with distance, and there appears to be a tendency for the amount of pork and poultry obtained from other sources to increase with distance. Patrons who lived the greatest distance from the plants used more home killed and processed pork and poultry than those located nearer the plants.

**Table 1. Kind and Amount of Meat Consumed per Person by Patrons Classified According to Distance from Locker Plants, July 1, 1937 to June 30, 1938**

Distance from plant in miles	Source of meat	Amount Consumed per Person in Pounds							Total
		Beef	Veal	Pork	Mutton and Lamb	Poultry	Fish	Othermeat	
Less than 1	Plant	46.7	0.0	43.2	.5	2.5	0.4	0.0	93.3
	Other	8.6	2.9	4.9	.....	4.3	3.1	1.2	25.0
	Total	55.3	2.9	48.1	.5	6.8	3.5	1.2	118.3
1-3.9	Plant	44.8	3.2	50.8	.5	3.8	1.2	0.1	104.4
	Other	17.8	1.8	12.5	.3	6.1	1.7	0.9	41.1
	Total	62.6	5.0	63.3	.8	9.9	2.9	1.0	145.5
4-6.9	Plant	46.9	6.3	51.9	.5	3.4	0.9	0.2	110.1
	Other	11.7	3.3	14.3	.0	8.7	2.6	1.6	42.2
	Total	58.6	9.6	66.2	.5	12.1	3.5	1.8	152.3
7-9.9	Plant	47.5	3.3	56.3	.0	3.2	0.9	0.0	111.2
	Other	10.4	0.2	9.5	.1	4.0	2.6	1.5	28.3
	Total	57.9	3.5	65.8	.1	7.2	3.5	1.5	139.5
10 and over	Plant	51.9	5.2	55.5	.....	4.2	0.8	0.1	117.7
	Other	5.3	0.4	17.1	.....	9.2	2.4	2.2	36.6
	Total	57.2	5.6	72.6	.....	13.4	3.2	2.3	154.3

## Minnesota Farm Prices for March, 1940

Prepared by W. C. WAITE and W. B. GARVER

The index number of Minnesota farm prices for the month of March, 1940 was 67. When the average of farm prices of the three Marches, 1924-25-26, is represented by 100, the indexes for March of each year from 1924 to date are as follows:

1924—84	1928—101	1932—47	1936—81
1925—105	1929—108	1933—36	1937—101
1926—111	1930—97	1934—54	1938—77
1927—109	1931—68	1935—84	1939—66*
* Preliminary.			1940—67*

The price index of 67 for the past month is the net result of increases and decreases in the prices of farm products in March, 1940 over the average of Marches, 1924-25-26, weighted according to their relative importance.

Average Farm Prices Used in Computing the Minnesota Farm Price Index, March 15, 1940, with Comparisons\*

	March 15, 1940	Feb. 15, 1940	March 15, 1939		March 15, 1940	Feb. 15, 1940	March 15, 1939
Wheat .....	\$0.87	\$0.86	\$0.60	Cattle .....	\$6.70	\$6.60	\$6.90
Corn .....	.44	.43	.34	Calves .....	8.80	8.60	8.60
Oats .....	.33	.33	.22	Lambs-sheep .....	7.80	7.52	7.35
Barley .....	.42	.43	.35	Chickens .....	.10	.09	.12
Rye .....	.53	.53	.30	Eggs .....	.14	.17	.14
Flax .....	1.93	1.90	1.67	Butterfat .....	.30	.32	.24
Potatoes .....	.55	.50	.49	Hay .....	4.78	4.58	4.41
Hogs .....	4.75	4.80	7.20	Milk .....	1.50	1.60	1.35

\* These are the average prices for Minnesota as reported by the United States Department of Agriculture.

The index number for March at 67 is substantially the same figure as that of March, 1939 when it was 66. However, there are important differences in individual commodity prices between the two periods. The grain items are one-fifth to three-fourths higher than a year ago; rye, oats, and wheat showing relatively the strongest positions. Dairy products, because of their relative importance in total income, show the greatest strength, with butterfat bringing 30 cents in March as compared with 24 cents a year ago. Milk at wholesale was also up better than 10 per cent, being 15 cents above the \$1.35 per hundredweight of March, 1939. Greatest weakness was shown by hogs at \$4.75 as compared with \$7.20 a year previously.

Indexes and Ratios of Minnesota Agriculture\*

	March 1940	Feb. 1940	March 1939	Average March 1924-26
U. S. farm price index .....	68.8	71.1	64.5	100
Minnesota farm price index .....	66.8	68.6	66.3	100
U. S. purchasing power of farm products .....	88.0	91.0	83.9	100
Minn. purchasing power of farm products .....	85.4	87.7	86.2	100
Minn. farmer's share of consumer's food dollar .....	41.6	41.9	42.7	53.3
U. S. hog-corn ratio .....	8.7	9.1	16.0	12.2
Minnesota hog-corn ratio .....	10.8	11.2	21.2	15.6
Minnesota egg-grain ratio .....	12.2	15.4	17.8	12.9
Minnesota butterfat-grain ratio .....	32.2	34.3	35.4	39.8

\* Explanation of the computation of these data may be had upon request.

## Spring Planting Intentions

Changes in acreages from 1939 for the principal crops are indicated for the 1940 season in the recently released "Prospective Plantings for 1940" of the U.S.D.A. Agricultural Marketing Service. A 10 per cent to 11 per cent increase over 1939 in acreage planted to spring wheat is indicated for the United States and for Minnesota. Last year's wheat seedings were the lowest in 15 years, while this year's prospective seedings are about 13 per cent below the 1929-38 ten-year average. Intentions indicate a 4 per cent reduction for the current year's corn acreage. This figure applies also both to the United States and to Minnesota. If these intentions are realized for the United States, it will represent the lowest planted corn acreage in 40 years. The intended reduction for the Corn Belt averages around 7 per cent, with some states running to even higher reductions as, for example, Kansas with an intended reduction of 10 per cent. With regard to oats, the United States intentions indicate less than 1 per cent increase in acreage, but Minnesota indications are for around a 2 per cent increase. In the past five years the trend in oats seedings has been downward with last year's acreage 10 per cent below the 1929-38 ten-year average. If the indicated slight increase materializes on this year's acreage, the downward trend would appear to have been checked, at least temporarily.

A slight increase in barley acreages planted is indicated for the United States for 1940, but the Minnesota acreage intentions indicate a 6 per cent decline under last year's planted acreage. Intentions with regard to flaxseed show an expected increase of 15 per cent over last year's total acreage planted. The prospective acreage of 2,836,000 acres is 13 per cent larger than the 1929-38 ten-year average. Minnesota returns indicate an expansion of about 9 per cent over the record acreage planted in 1939. Other states are reporting expected increases at even larger relative rates. For South Dakota and Iowa the indications are for an increase of 50 per cent over 1939, while for Kansas and California the indicated increases are 29 per cent and 23 per cent, respectively.

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