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AGRICULTURAL EXTENSION DIVISION  
UNIVERSITY OF MINNESOTA

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MINNESOTA FARM BUSINESS NOTES

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Prepared by the Division of Agricultural Economics  
University Farm, St. Paul, Minnesota

DAIRY FARMERS' EARNINGS IN SOUTHEASTERN MINNESOTA, 1928-1930  
Prepared by W. P. Ranney

The University of Minnesota and the United States Department of Agriculture have been cooperating with a group of dairy farmers in southeastern Minnesota since January 1, 1928, in studying the factors and methods of management affecting farm earnings. The study included 124 farms in 1928, 172 in 1929, and 180 in 1930, all located in the following counties: Dodge, Freeborn, Goodhue, Rice, Steele and Waseca.

The farms included in this study are dairy farms which are fairly typical of the system of dairy farming in southeastern Minnesota. The principal cash income is from the sale of dairy products, mainly as cream to farmer owned cooperative creameries specializing in the manufacture of high quality butter, and from the sale of hogs. Minor sources of cash income include: dairy cattle, poultry, sheep and wool, wheat, potatoes, flax, sugar beets, canning crops, and from labor off the farm. Most of the feed for livestock is grown on these farms, and includes corn, silage, oats, barley, and hay.

The average size of the farms studied during the three-year period was 175 $\frac{1}{2}$  acres. The average farm inventory of \$24,903, not including the value of the operator's house, was distributed as follows: land, 55%; permanent improvements, 16%; feeds and supplies, 8%; machinery and equipment, 7%; cows, 6%; and other livestock, 8%.

After making all deductions for expenses, including allowances for board of hired labor, for interest at 5% on the average farm inventory, and for unpaid family labor, the yearly net return to the proprietor for his labor and management averaged \$1,128. This return included \$317 worth of farm produce used in the house and an increase in inventories of \$289.

Eighty-four farmers continued in the study throughout the three-year period. There were a number of replacements each year, and a large number of additional farms included in the study in 1929 and 1930. In spite of these changes in the farms studied, the average size and the average investment did not vary greatly from year to year, (the price of bare land was maintained at the same level during the three-year period for the purpose of this study). However, the operator's labor earnings showed a wide variation from year to year. 1928 represented approximately the average for the three years, 1929 was a year of relatively high returns, and 1930 a year of low returns, the earnings being only one-eighth of the average for 1929. Comparisons of the averages for each year are shown in Table 1.

Table 1. Average Size of Farm; Average Investment; and Financial Statement

	1928	1929	1930
Size of farm in acres	163	176	183
Farm inventory, not including house (Average of beginning and end inventory)	\$23,655	\$25,494	\$25,562
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Receipts and Net Increases:			
Productive livestock	\$4,008	\$4,431	\$3,502
Crops and feeds	192	610	-
Outside labor and misc. receipts	144	101	125
Total	<u>\$4,344</u>	<u>\$5,142</u>	<u>\$3,627</u>
Expenses and Net Decreases:			
Machinery and equipment	\$453	\$467	\$480
Buildings, fencing, tiling	165	156	148
Crops and feeds	-	-	71
Horses	25	7	21
Misc. livestock expense	55	68	78
Misc. crop expense	171	198	202
Hired labor	252	293	262
Allowance for board of hired labor	95	110	113
Taxes and insurance	285	312	324
General farm expense	30	30	26
Total	<u>\$1,531</u>	<u>\$1,641</u>	<u>\$1,725</u>
Returns to Capital and Family Labor*	\$2,813	\$3,501	\$1,902
Interest @ 5% on farm inventory	<u>1,183</u>	<u>1,275</u>	<u>1,278</u>
Family labor earnings	<u>\$1,630</u>	<u>\$2,226</u>	<u>\$ 624</u>
Unpaid family labor	353	361	381
Operator's labor earnings	<u>\$1,277</u>	<u>\$1,865</u>	<u>\$ 243</u>

\*The farmers in this study included the following groups: farm owners, part owners, cash tenants, and stock share tenants; some were entirely out of debt, while a few had practically no equity. For the purpose of comparison all of the financial statements were worked up on a full owner basis, applying a uniform charge of 5% to the investment in every case.

The variations in earnings from year to year, as shown in Table 1, are due to differences in total receipts and expenses, and to the variations in increase or decrease in total value of inventory, the latter item reflecting differences in physical quantities of property on hand at the beginning and end of the year, and differences in prices of inventory items on these two respective dates.

The variations in total cash expenses are partly due to the small differences in average size of farms, but mainly to variations in the quantities of feed purchased and to prices paid for feed and for some of the other elements of cost. The variations in total cash receipts are also partly due to small differences in the average size of the farms, but mainly to the variations in prices received for products sold.

The inventory changes were not due entirely to differences in prices at the various inventory dates, but in part to appreciable variations in the amount of feed on hand, as a result of fluctuations in crop yields from year to year.

Also when less feed is purchased, probably more of the home grown feed is fed, leaving relatively less on hand at inventory time.

Table 2. Average Cash Receipts and Expenses and Inventory Changes per Farm, and Comparisons of Miscellaneous Items for Three Year Period

	1928	1929	1930
Total cash receipts	\$4,465	\$5,044	\$4,476
Total cash expenses	2,266	2,614	2,390
Net cash receipts	\$2,199	\$2,430	\$2,086
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Net increase in inventory during the year	\$387	\$855	-
Net decrease in inventory during the year	-	-	\$375
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Average price rec. per lb. butterfat sold	\$.53	\$.50	\$.40
" " " " cwt. hogs sold	8.23	9.60	8.94
" " " " doz. eggs sold	.27	.28	.22
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Average yield per acre, corn (bu.)	40.9	48.6	47.1
" " " " , oats and barley (bu.)	39.7	45.3	42.4
" " " " , wheat (bu.)	20.8	23.7	19.9
" " " " , alfalfa (tons)	1.9	3.1	2.6

#### Differences in Earnings Between Farms

One of the outstanding facts brought out by this study is the wide range in earnings between different farms each year, \$5,500 between the highest and lowest in 1928, \$6,500 in 1929, and \$5,300 in 1930. This fact is most significant in 1930, because, while only a few farmers failed to get any return for their labor in 1928 and 1929, one-third failed to get such a return in 1930. A few of the operators in 1930 not only received nothing for their own services, but failed by approximately \$2,000 to cover expenses and interest on investment.

Another important fact shown by the farm records is that a farmer's ranking in the range of earnings is to a large extent under his control. This is not entirely true in any one year, but over a period of years a program of application of the best principles of farm organization and management largely determines earnings.

During the three-year period, the following eight factors or measures of efficiency appeared to show a marked relationship with operators' labor earnings:

#### Production:

1. Crop yields per acre.
2. Butterfat production per cow.

#### Size:

3. Number of days of productive work.
4. Amount of productive livestock per 100 acres.

#### Efficiency:

5. Tendency to grow those crops that generally show higher net returns.
6. Efficient feeding of all the productive livestock.
7. Efficient use of man labor.
8. Control of overhead expenses, (including buildings, fencing, machinery, and power).

Six of these factors showed a high relationship with earnings every year during this study. One factor, control of overhead expenses, did not show up so strongly in 1929, probably because the high returns of that year permitted a larger expenditure for some of the elements of cost. However, even in that year some farms showed low earnings due largely to the fact that overhead expenses were relatively too high.

Another factor, size of business, showed a high relationship with earnings in 1928 and 1929, but in 1930 this relationship was only apparent for those farms which had a net return above all expenses and interest on investment. Size furnishes the opportunity for increasing earnings if the farm ranks high in the other factors. This fact emphasizes the importance of QUALITY AND BALANCE, especially for the larger businesses as they usually have more at stake whenever prices take a big drop.

#### Balance

Balance of the three groups of factors (production, size of business, and efficiency) showed up as very important every year, and Table 3 summarizes the effect of balance for all three years, treating each farm for each year as a separate observation.

Table 3.      Relation of Well Balanced Business to Farm Earnings

<u>No. of factors for which each farm is above the average</u>	<u>No. of farms in each group</u>	<u>Average operators' labor earnings</u>
8	8	\$3,033
7	28	2,033
6	55	1,596
5	87	1,566
4	92	1,056
3	89	788
2	70	494
1	36	454
0	11	-150

#### Value of Study to the Farm Cooperators

Probably the greatest value of this study to the farmers who kept the records, was that it enabled them to determine their own ranking in earnings, and in each of the factors related to earnings, and thereon to build a foundation for improved farm organization and practices, which should in the future contribute to the farm income. Even in the short time of one or two years during this study, there were examples in which the effect of definite steps taken in reorganization and improved practices showed up very favorably in the results obtained.

MINNESOTA FARM PRICES FOR APRIL 1931  
Prepared by D. D. Kittredge and A. E. Erickson

The index number of Minnesota farm prices for the month of April 1931 was 70.6. When the average of farm prices of the three Aprils of 1924-25-26 is represented by 100, the indexes for April of each year from 1924 to date are as follows:

April 1924 -	82.4
" 1925 -	105.9
" 1926 -	112.4
" 1927 -	110.4
" 1928 -	106.2
" 1929 -	112.2
" 1930 -	100.9*
" 1931 -	70.6*

\*Preliminary

The price index of 70.6 for the past month is the net result of decreases in the prices of farm products in April 1931 from the average of April 1924-25-26 weighted according to their relative importance. These decreases ranged from approximately 69 per cent to 5. The products ranked according to the size of their percentage decreases in this comparison are shown in the following list:

Principal Farm Products which Showed Price Increases and Decreases  
in April 1931 when Compared with Average Prices in  
April 1924-25-26  
(arranged in descending order of percentage change)

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

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Although the Minnesota index for April 1931 does not measure price changes from March 1931, a comparison of month to month changes in price has been made. The increases range from 18 per cent to 2, and the decreases from 8 per cent to 2. The products ranked according to the size of their percentage increases or decreases in April 1931 over March 1931 are shown in the following list:

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

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Increases: Potatoes, corn, oats, chickens, wheat, barley, lambs-sheep, hay, hogs.

Decreases: Rye, eggs, milk, butterfat, flax.

No change: Cattle, calves.

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