



AgEcon SEARCH
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

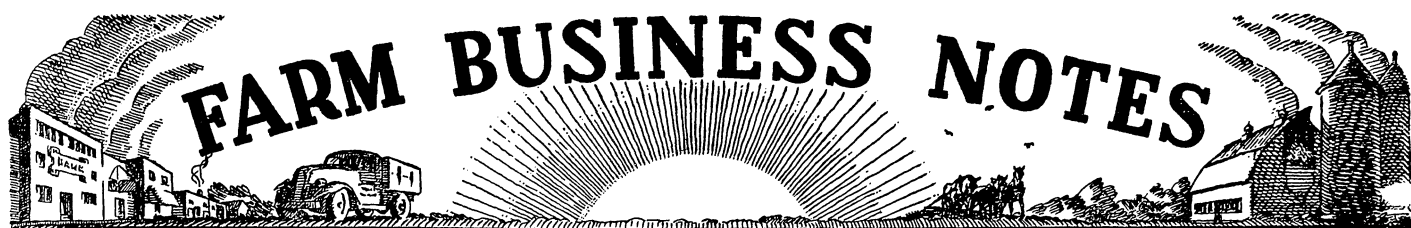
Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*



FARM BUSINESS NOTES

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

NO. 215 UNIVERSITY FARM, ST. PAUL NOVEMBER 1940

Finding Flaws in the Farm Business

SELMER A. ENGENE

Farmers as well as other business men are always looking for ways to make more money. They are constantly asking themselves such questions as these: "Am I getting all that I can out of my business? Are there not some changes or shifts I might make that would increase my earnings?" The thermometer chart is a device for diagnosing the farm business to find answers to these questions. It is a very useful tool for determining possible opportunities for increasing earnings.

The thermometer chart for a farmer in southeastern Minnesota is presented in figure 1. The first bar represents the earnings of this farmer. The other seven bars represent seven major factors of success. The heavy line across the middle of the chart represents the average for the 152 dairy farmers included in the Southeast Minnesota Farm Management Service. The top of the chart represents the highest level achieved by any of those farmers, and the bottom represents the lowest level.

This farmer's labor earnings were considerably below the average—\$1,702 compared with an average of \$2,914. The earnings among this group of farmers ranged from a high of \$7,000 to a low of \$265. Although this farmer's earnings were not the lowest in the group, the majority of the farmers earned more. An analysis of the thermometer chart indicates the principal reasons for these low earnings.

The average level of the seven factors on this farm is below the average on most of the 152 farms. There is a fairly close correlation between earnings and the average level of these seven factors. That is, if the heights of the seven bars are added and divided by seven, that average will be quite close to the earnings for most farmers. As a first generalization, then, earnings are low because the average quality of the organization and operation of the farm is low.

The strongest phase of this farm business is the high efficiency of livestock production. The weakest phases are the low crop yields, the small size of business, and the low labor accomplishments per man. The crop rotation, the number of livestock per 100 acres, and the cost of power, machinery, and buildings per unit of volume of business are neither high nor low.

University Farm Radio Programs
 Monday through Friday
UNIVERSITY FARM HOUR—6:00 a.m.
MID-MORNING MARKETS—10:30 a.m.
 Station WLB—760 on the dial

The six factors, not including size, that measure the quality of business have an average on this farm only slightly lower than the average of this group of farms. Earnings per unit of volume are therefore only slightly lower than on the other farms. But since the size of business is considerably smaller, the total earnings are lower.

Analysis of the records of the farmers in the Southeast Minnesota Farm Management Service shows that the farmers who have raised the average level of these factors have obtained higher earnings. Changes in the farm business that will raise the level of any or all of these factors will tend to increase earnings.

The decision as to the particular factors that should be increased, however, must be determined by a careful

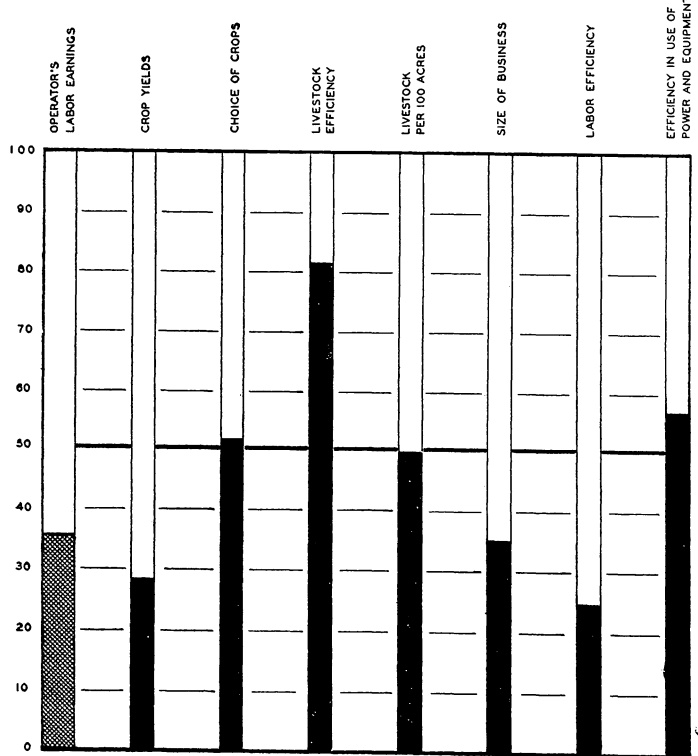


Figure 1. Thermometer Chart for Farmer in Southeastern Minnesota

analysis of the farm. It is not necessarily true that the lowest factors should be increased first. The farmers whose factors are all on approximately the same level obtain earnings very little higher than do those who have the same average level but with some factors very high and some very low. A greater advantage will not necessarily be gained by raising the level of the lowest factors than of one of the higher factors. Physical limitations on a farm may make it difficult to raise a low factor. Special opportunities may make it profitable to raise a certain factor to a very high level. An analysis more detailed than that provided by the thermometer chart, therefore, is necessary to find these opportunities. This analysis will be most accurate if good farm records are available.

Although crop yields are low on this farm, physical characteristics make it difficult to increase them profitably except by a slow process. The natural productivity of the soil on this farm is low and has been further reduced by erosion. High yielding varieties of crops, tested seed, and good tillage practices are already being used. Commercial fertilizers might increase yields, but some trials would be needed in order to test their profitability. A larger acreage of grasses and legumes and a more extensive use of manure will increase yields, but the rise will be slow.

The cropping system can be improved materially and quickly. More feed is produced per acre on this farm by alfalfa hay than by any other crop and the smallest quantity is produced by small grains. An increase in the acreage of alfalfa and a decrease in the acreage of small grains will increase the total quantity of feed produced on the farm and reduce the costs slightly.

The efficiency of livestock production is very high at the present time, but some improvement can be profitably made. With greater care in the selection and management of the cattle and particularly of the poultry, the return over feed cost can be increased. The return over feed cost for hogs, which is now below the average, can be increased by improved sanitation and better feeding. But since only two or three litters of pigs are raised each year, changes which will materially increase labor requirements or investments will not be profitable. Livestock efficiency can be raised to a high level on this farm because the operator is interested in livestock and is very skillful in handling them, and ample family labor is available for their care.

This high efficiency of livestock production presents an opportunity for increasing earnings. With the larger quantity of alfalfa that will result from the suggested change in the cropping system a larger number of cattle can be kept. Because of the high efficiency of the cattle, the additional grain needed can be purchased very profitably. Barn space and labor are available to care for several more cows. It may also be profitable to keep more hens, using purchased feed. With such high livestock efficiency it is profitable to have a far larger number of livestock per hundred acres than is typical in this area.

Size of business is a limiting factor on this farm. Only 114 acres are operated and it is difficult to add to this. Size can then be increased only by greater intensity. The principal opportunity for doing this is by increasing the number of cattle and poultry.

There is little opportunity for reducing costs of labor or of power, machinery, and buildings on this farm.

The thermometer chart is a quick and convenient way to find the outstanding elements of strength and weakness in a farm business. It is, however, only the first step and serves primarily to direct the farmer's attention to those parts of his business that seem to need attention if earnings are to be increased. It does not give the answer as to how to increase earnings but it indicates where to look for the answer. To use the thermometer chart effectively the farmer needs not only records covering his own business but also information from records kept by other farmers for purposes of comparison. Farm management services such as the Southeast Minnesota Farm Management Service or the Southwest Farm Management Service in Minnesota, the farm business associations in Iowa, and the farm bureau-farm management services in Illinois provide this type of information. Any farmer interested in analyzing his own business through the thermometer chart method should consult his local county extension agent as to opportunities for joining a farm management service.

Area Served by Minnesota Livestock Auctions

GERALD ENGELMAN

Minnesota livestock auctions appear to be predominantly local in character. The data shown in tables 1 and 2 indicate that livestock auctions received over 80 per cent of their consignments from an area within a 25-mile radius of the auction market and delivered 75 per cent of their consignments within a similar area.

This information was obtained from reports filed with the State Livestock Sanitary Board by the managers of 14 auction markets during 1938. The reports included the post office addresses of the consignors and purchasers of each lot of livestock sold. By drawing zones of varying radii on a map about each auction, it was possible to determine within limits the area served by these auctions.

Table 1. Origin of Livestock Sold at 14 Auction Markets in Minnesota by Distance Zones, Based upon Location of Consignors and Classified by Size of Auction, 1938

Size of auction	Number of auctions	Average number of animals handled	Per Cent Consigned from Different Zones				Total
			0-25 miles	26-50 miles	51-100 miles	Over 100 miles	
No. of head 0-2500	4	1,842	90.2	6.8	1.0	2.0	100.0
2501-5000	4	3,828	79.8	10.6	3.8	5.8	100.0
5000 and over	6	13,006	80.0	13.0	3.3	3.7	100.0
Average of all auctions	14	7,194	80.7	12.2	3.2	3.9	100.0

The larger auctions received a greater proportion of their consignments from farmers or livestock traders living outside the 25-mile radius than did the smaller auctions. Those auctions whose consignments exceeded 2,500 head during 1938 received about 20 per cent of their livestock from the outlying areas. The four smallest auctions received only 10 per cent of their consignments from similar areas.

A similar relationship to size of auction was also true with respect to the destination of livestock. The six largest auctions, each having an annual volume in excess of 5,000

Table 2. Destination of Livestock Purchased at 14 Auction Markets in Minnesota by Distance Zones, Based upon Location of Buyers and Classified by Size of Auction, 1938

Size of auction	Number of auctions	Average number of animals handled	Per Cent Delivered to Different Zones				Total
			0-25 miles	26-50 miles	51-100 miles	Over 100 miles	
No. of head 0-2500	4	1,842	93.1	4.3	2.3	0.3	100.0
2501-5000	4	3,828	79.2	12.6	6.5	1.7	100.0
Over 5000	6	13,006	72.9	22.1	4.2	0.8	100.0
Average of all auctions	14	7,194	75.3	19.5	4.3	0.9	100.0

head of livestock, delivered 27 per cent of their consignments to areas beyond the 25-mile radius. Auctions handling between 2,500 and 5,000 head of livestock delivered 20 per cent of their consignments to outlying areas, while the four smaller auctions delivered only 7 per cent of their livestock to similar areas.

All auctions, regardless of size, received a higher proportion of the livestock from beyond the 100-mile radius than the proportion sold to farmers or buyers living more than 100 miles from the markets. This reflects the movement of feeder stock from the western ranges through the auctions to local livestock feeders. The importance of the movement is probably greater than is revealed by the data. A number of livestock traders who participate in this movement live in the vicinity of the auctions, and their home addresses were used as origin points for the livestock consigned by them although some of their livestock consignments were shipped from far distant points.

Recent Progress in the Cooperative Distribution of Oil in Minnesota¹

E. FRED KOLLER

The statistics of the inshipments of gasoline, kerosene, distillate, and other motor fuels into Minnesota indicate that an increasing proportion of these products is being purchased through cooperative oil associations. The 1939 figures show that cooperative associations received 83,183,200 gallons, or 10.6 per cent, of the total gallonage of light oils shipped into the state. This compares with 31,124,800 gallons, or 6.1 per cent of the total, handled cooperatively in 1933.

The areas showing the highest proportion of light oils distributed by cooperatives in 1939 include the southwestern and west central counties of the state. In type-of-farming Area 3, which includes the eleven southwestern counties of the state,² nearly 22 per cent of all the light oils are handled by cooperatives. In the metropolitan counties, Ramsey and Hennepin, slightly less than two per cent of the light oils are handled on a cooperative basis.

The accompanying table includes a list of the 12 individual counties in the state showing the largest proportions of light oils handled by cooperatives. Kanabec county

¹ 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.

² The eleven counties in Area 3 include Lincoln, Lyon, Pipestone, Murray, Cottonwood, Watonwan, Rock, Nobles, Jackson, Martin, and Faribault counties.

Table 1. Proportion of Light Oil Inshipments by Cooperative Associations in 12 Leading Counties, 1939

County	Per cent of inshipments by cooperatives	County	Per cent of inshipments by cooperatives
Kanabec	69.2	Red Lake	33.7
Clearwater	49.9	Isanti	33.4
Roseau	40.9	Brown	33.2
Grant	39.6	Yellow Medicine	31.8
Nobles	38.5	Lyon	31.8
Nicollet	37.1	Carlton	31.5

leads with 69.2 per cent distributed cooperatively, and Clearwater county is second with 49.9 per cent.

Among the more important factors accounting for the expansion in the volume of business of cooperative oil associations in Minnesota are the substantial savings which these organizations have effected for their patrons. In some of the years of the 1920's and early 1930's for which studies of the net income of large numbers of oil associations are available, these net returns have averaged as high as 10 and 11 per cent of sales. However, in recent years gradual reductions in the gross margins obtainable in the handling of petroleum products have been a factor in reducing the net income of these organizations. The 1939 net income of a group of 92 associations selected from all parts of the state averaged 6.39 per cent of net sales, which is a substantial net return but is the lowest in recent years. The 1939 net income of individual associations varied from a high of 13.89 per cent of sales in one association to a net loss of 4.14 per cent in another. Seven of the 92 associations showed net income in excess of 10 per cent of sales.

A comparison of the average operating statements of 92 identical Minnesota oil associations for 1938 and 1939 reveals the difference in operations giving rise to the lower net returns in 1939 (Table 2). It will be noted that the average dollar sales in the two years were about the same, \$69,785 and \$69,627, respectively. Likewise the cost of sales and the resulting gross margins were about the same in the two years. The average operating expenses in the two statements, however, showed an important difference, having risen from \$11,575 in 1938 to \$12,311 in 1939, or from 16.59 per cent to 17.68 per cent of sales, respectively. This change accounted for most of the decline in the average net income between 1938 and 1939. It is a change to which oil association managers and directors need to devote increased attention, if the net income of these organizations is to be held near the high level of former years.

Table 2. Average Operating Statements of 92 Minnesota Oil Associations, 1938 and 1939

Item	1938		1939	
	Average of 92 assns.	Per cent of sales	Average of 92 assns.	Per cent of sales
Sales	\$69,785	100.00	\$69,627	100.00
Cost of sales	53,758	77.03	53,648	77.05
Gross margin	16,027	22.97	15,979	22.95
Operating expense	11,575	16.59	12,311	17.68
Net operating income	4,452	6.38	3,668	5.27
Other income	685	.98	794	1.14
Total	5,137	7.36	4,462	6.41
Other expense	122	.18	13	.02
Net income	\$ 5,015	7.18	\$ 4,449	6.39

Minnesota Farm Prices for October, 1940

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

The index number of Minnesota farm prices for the month of October, 1940 was 63. When the average of farm prices of the three Octobers, 1924-25-26, is represented by 100, the indexes for October of each year from 1924 to date are as follows:

1924— 93	1929—107	1934— 67	1939— 68*
1925—104	1930— 82	1935— 74	1940— 63*
1926—103	1931— 52	1936— 94	
1927— 98	1932— 38	1937— 82	
1928— 95	1933— 50	1938— 62	

* Preliminary.

The price index of 63 for the past month is the net result of increases and decreases in the prices of farm products in October, 1940 over the average of October, 1924-25-26, weighted according to their relative importance.

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

	Oct. 15, 1940	Sept. 15, 1940	Oct. 15, 1939		Oct. 15, 1940	Sept. 15, 1940	Oct. 15, 1939
Wheat	\$0.69	\$0.62	\$0.71	Cattle	\$7.60	\$7.70	\$7.10
Corn .....	.49	.50	.37	Calves	8.80	9.00	9.10
Oats .....	.22	.20	.25	Lambs-sheep	7.68	7.68	7.70
Barley .....	.34	.34	.39	Chickens .....	.11	.12	.09
Rye .....	.33	.31	.39	Eggs .....	.19	.17	.18
Flax	1.27	1.31	1.65	Butterfat .....	.30	.29	.29
Potatoes .....	.32	.43	.50	Hay	4.62	4.75	4.54
Hogs	5.70	6.10	6.50	Milk	1.60	1.60	1.60

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

The index number remained substantially unchanged from the September 15 level. Changes up or down for the various crops largely offset one another, rises for wheat, oats, and rye having been offset by declines for corn, flax, and especially potatoes. The flax price decline was about the usual seasonal price movement, while the potato price decline was considerably larger than the usual seasonal change. The price advances for wheat, oats, and rye indicated considerable strength for these grains, which usually decline seasonally from September to October. Livestock prices also showed some strength, declining by less than the usual seasonal amount. Advances for eggs and butterfat were slightly under usual seasonal price movement.

Indexes and Ratios of Minnesota Agriculture*

	Oct. 1940	Sept. 1940	Oct. 1939	Average Oct. 1924-26
U. S. farm price index	71.7	70.8	70.3	100
Minnesota farm price index	62.7	63.0	67.7	100
U. S. purchasing power of farm products	89.4	88.2	87.6	100
Minn. purchasing power of farm products	78.2	78.4	84.3	100
U. S. hog-corn ratio	9.8	9.9	13.7	12.8
Minnesota hog-corn ratio	11.6	12.2	17.6	14.6
Minnesota beef-corn ratio	15.5	15.4	19.2	8.1
Minnesota egg-grain ratio	20.3	19.1	19.8	21.7
Minnesota butterfat-farm-grain ratio	40.6	40.7	38.2	38.3

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

Review of Crop Prices

Prices received by Minnesota producers for 1940 crops thus far in the marketing season have run about 6 per cent below the prices received for the 1939 crops. This statement includes wheat, rye, flax, oats, and barley. The bulk of these crops is marketed in the four months, July through October.

About 60 per cent of Minnesota wheat is normally marketed in these four months. In spite of support from the loan program and slightly better demand, the price for the four months of 1940 was somewhat below the 1939 level due in part to a somewhat larger domestic crop for 1940. Price for the four marketing months of 1940 was 61.5 cents compared with 64 cents for 1939.

Two thirds of farm marketings of rye occur normally in the July-October period. Here also the 1940 level was about 2 cents under the 1939 figure. Rye brought around 31 cents this year compared to 33 cents for 1939.

Nearly all the flax marketed from Minnesota is sold during the July-October season. This year the price was running about 9 per cent below last year, the average this year being \$1.33 compared with \$1.46 for 1939. The new production in other regions of the country is tending to create a downward pressure on flax prices, and whether new demand from defense preparations will develop sufficient strength to offset this tendency remains to be seen.

From 60 per cent to 65 per cent of Minnesota oats sales from farms normally occur in the July-October quarter. This year the price returned less than 21 cents to the farmer compared with 22.6 cents for 1939, a decline of roughly 8 per cent. The barley crop is marketed a little more slowly than oats. Usually about 55 per cent of the Minnesota marketings occur from July through October. The 1940 price of barley for this period was around 33.6 cents, a decline of roughly 5 per cent from the level of 35.5 cents for the 1939 period.

It might be pointed out, especially with regard to the cash crops, that prices during the marketing season of 1939 were probably under abnormal stimulus due to the outbreak of European hostilities.

UNIVERSITY OF MINNESOTA
 Department of Agriculture
 Agricultural Extension
 University Farm, St. Paul, Minn.

P. E. MILLER, Director

PENALTY FOR PRIVATE USE TO AVOID PAYMENT OF POSTAGE, \$300

FREE—Co-operative Agricultural Extension Work, Acts of May 8 and June 30, 1914.

UNIVERSITY FARM, ST. PAUL, MINNESOTA

Cooperative Extension Work in Agriculture and Home Economics, University of Minnesota, Agricultural Extension Division and United States Department of Agriculture Cooperating, P. E. Miller, Director. Published in furtherance of Agricultural Extension Acts of May 8 and June 30, 1914.