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FARM BUSINESS NOTES

Prepared by the Divisions of Agricultural Economics and Agricultural Extension
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Family Farms in Minnesota Are Growing Larger

S. A. ENGENE and G. A. POND

Minnesota farmers are gradually enlarging their farms. This is not a move toward corporation farming, but a change toward a more adequate family farm unit. They are breaking up some farms, adding the land to others, making fewer but larger farms. They are making this change slowly, however.

The average acres per farm have changed very little since 1920. The average, however, has been held down by the increase in the number of very small farms. The number of farms of 175 acres or more has been steadily increasing since 1920 (see table 1). Farms of 50 to 175 acres in size also increased slightly in number from 1920 to 1940 but by 1945 were well below the 1920 level. The number of farms under 50 acres in size also increased from 1920 to 1940 but by 1945 had dropped 13 per cent from the 1940 level. Farms in this size group have little significance from the standpoint of commercial agriculture. Except for a few poultry, truck, and fruit farms they are largely part-time or residential farms for city or other nonfarm workers or persons in partial retirement. Among the commercial farms the size has been increasing, especially since 1930. If farms of only 50 acres or more are considered, the average size was 187 acres in 1920 and 1930, 190 in 1940, and 200 in 1945. Although farmers are enlarging the commercial farms, they are continuing to operate them as family farms. The number of very large farms that would be suitable for corporate ownership and operation is still very small.

University Farm Radio Programs

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UNIVERSITY FARM HOUR—12:30 p.m.

Station KUOM—770 on the dial

It seems probable that the trend toward larger farms will continue. Mechanization has been a powerful stimulus in this direction. Many new types of equipment have been developed that make it possible for one man to handle a much larger acreage of crops than formerly. Increased earnings during the war period have supplied many farmers with funds for buying more land. Rubber tires

for tractors and farm implements have made possible much faster travel to the more distant fields which larger farms involve. Shortages of labor that hastened mechanization of operations and farm consolidation are not likely to disappear soon. Excellent opportunities for employment in cities are holding workers away from farms. Falling birth rates are reducing the number of children available for farm work. Farm population studies show that by 1960 the number of young men reaching farming age in the better counties may be barely sufficient to replace farmers who retire or die.¹

The shift toward larger farms may have some effect on farm organization and on efficiency in operation. Comparisons of large and small farms offer some suggestions as to the possible nature of these changes. Care must be used in interpreting the results of these comparisons since other factors than difference in size may be involved.

Data for farms of different sizes are presented in table 2. These data were obtained from records of co-operators in the Southeastern Minnesota Farm Management Service. Data from the Southwestern Minnesota Farm Management Service give similar conclusions but lack of space prevents their presentation.

Cropping systems differ only slightly among farms of various sizes. Operators of large farms used a larger proportion of their tillable land for small grains and a smaller proportion for hay and pasture than did operators of small farms, but the differences were quite small. With the improvements which are being made in haymaking machinery, it is possible that the larger farms may increase the acreage of hay in the future.

¹ Marshall, Douglas G. "Better Farms, Fewer Boys and Girls," *Minnesota Farm and Home Science*, Vol. IV, No. 2, February 28, 1947.

Table 1. Average Size of Farms and Number of Farms of Various Sizes in Minnesota

Size group	1920	1930	1940	1945
Average acres per farm	169	167	165	175
	Number of farms			
Under 50 acres	20,271	23,129	30,021	26,174
50-99 acres	32,743	33,150	35,580	29,479
100-174 acres	65,793	66,698	67,386	64,773
175-259 acres	31,108	33,064	33,116	34,397
260-499 acres	25,245	25,881	27,078	29,350
500 acres and over	3,318	3,333	4,170	4,779
Total	178,478	185,255	197,351	188,952

Source: U. S. Census of Agriculture.

Table 2. Relation of Farm Organization and Efficiency of Operation to Size of Farm, Southeast Minnesota Farm Management Service—1931, 1936, 1941, 1945

	Small farms, 179 acres or less	Medium farms, 180 to 259 acres	Large farms, 260 acres or more
Average number of farms per year	78	54	40
Average acres per farm	139	216	354
Per cent of tillable land in:			
Cultivated crops	31	31	30
Small grain	35	36	39
Hay and pasture	32	31	30
Idle	2	2	1
Per cent of land in high return crops	42	41	38
Animal units per 100 acres	28	23	19
Total work units	552	755	973
Index of crop yields	103	100	95
Index of feeding efficiency	102	101	96
Work units per worker	320	357	369
Index of overhead cost per acre*	112	100	77
Index of overhead cost per work unit*	99	100	100
Operator's labor earnings:			
1931	-\$316	-\$682	-\$1,539
1936	2,093	3,307	4,197
1941	2,575	3,352	3,786
1945	2,774	3,903	3,085

* Cost for power, machinery, equipment, and buildings.

The large farms were less heavily stocked than were the small farms. The operators of large farms had 19 animal units per 100 acres; the operators of small farms had 24 animal units, or one quarter more. Improvements in methods of livestock management and in equipment for livestock may make it possible to increase livestock on large farms. Lack of shelter may retard for a short time increases in livestock numbers on farms that add additional land to their present holdings.

In general, farming was more intensive on the small farms than on the large farms. A larger percentage of the land was used for high profit crops. More livestock were kept and more feed was purchased per acre. The volume of business measured in work units per acre was 2.7 for the large farms, 3.5 for the medium farms, and 4.0 for the small farms. The volume of business per acre was 50 per cent greater on the small farms than on the large farms. Many of the small farms increased the number of livestock, supporting them with purchased feed in order to increase the volume of business to the point where it would provide adequate earnings.

Crop yields were lower on the large farms than on the small farms. Since soils data are not available for these farms it is impossible to determine the extent to which the differences in yields are due to differences in soil productivity. A part of this difference may be due to the lower proportion of legumes in the rotation and to smaller quantities of manure with the less intensive stocking. Some of the operators of large farms may also have been farming more land than they could adequately handle with the machinery and labor available on their farms. The differences in yields between large and small farms were smaller on the farms in the Southwestern Farm Management Service. Studies of farms in some other states have shown no differences in yields on farms of different sizes.

The feeding efficiency, or the return per \$100 feed fed to livestock, was lower on the large than on the small farms. Since the operators of large farms had twice as much livestock per farm as the operators of small farms, it is possible that they were unable to give as much detailed care. Some of them may also have neglected their livestock in order to give adequate attention to the larger acreages of crops.

Each worker on the large farms cared for 15 per cent more crops and livestock (work units per worker) than did the workers on the small farms. Labor costs per unit of output should therefore be lower on the large farms. The annual cost for power, machinery, and buildings per acre was much lower on the large than on the small farms. The quantity of machinery needed for large farms is only slightly larger than on small farms. Fuel costs, of course, increase almost in direct proportion to the acreage covered. However, owing to the more intensive business on the small farms these overhead costs per unit of volume (per work unit) were practically the same for all sizes.

Farmers are primarily interested in earnings and in the level of living which they can achieve. Records have been obtained from this area every year since 1928. In 1931 most of these farms failed to obtain sufficient income to cover costs and still provide interest on the investment. The operator received no return for his labor. The earnings were even less favorable on the large farms than on the small. The same results were obtained in 1932. In most of the other years, earnings were considerably larger on the large farms. Earnings were also larger on the large farms in the Southwest Farm Management Service for the years that records have been obtained there—1940 through 1945. It seems likely that except in the most unfavorable years the earnings per family will be larger if the average size of farm is increased. The net income to agriculture will be divided among fewer operators. With larger farms and higher earnings, farmers should be able to attain a higher standard of living.

Changes in Livestock Numbers

R. O. OLSON

Farmers cooperating in the southern Minnesota farm management services reported some significant changes in livestock numbers during 1946. Those in southeast Minnesota showed substantial increases in dairy cow numbers and decreases in beef cattle, sheep, and hogs. The southwestern Minnesota cooperators showed an increase in feeder sheep and poultry and a decrease in dairy cow numbers.

Cooperators in these services operated larger and more productive farms and were generally above average in managerial ability and among the more successful farmers. Changes in livestock numbers reported by them should be an indication of the changes made by the more progressive farmers in these areas in 1946.

Table 1 shows the average number of livestock of each class which cooperating farmers in southeastern and southwestern Minnesota reported on hand December 31, 1946, and the per cent changes from a year earlier.

Table 1. Changes in Livestock Numbers, Southern Minnesota, January 1 to December 31, 1946

Livestock	Southeastern Minnesota			Southwestern Minnesota		
	Number reporting	Avg. no. per farm reporting, Dec. 31	Per cent change from Jan. 1	Number reporting	Avg. no. per farm reporting, Dec. 31	Per cent change from Jan. 1
Dairy and dual-purpose cattle	145			65		
Cows		19.2	+ 4.9		11.9	- 2.1
Heifers, 1½ yrs. and over		4.6	- 7.8		3.0	+ 7.8
Heifers, ½-1½ yrs		5.9	+ 1.9		4.1	+24.3
Calves		6.5	+ 6.0		5.2	+ 0.8
Beef-breeding herd	16			37		
Cows		12.1	- 3.0		15.0	0
Heifers		5.2	- 1.2		3.2	-22.0
Calves		10.1	-13.4		11.9	+17.0
Feeder cattle	21	16.9	- 3.3		27.5	- 5.0
Hogs	140			141		
Market hogs		15.7	-19.5		54.5	+ 0.4
Fall pigs		22.1	-21.5		24.1	-11.1
Sows		10.3	+16.0		16.6	- 5.8
Gilts		7.6	+17.3		14.2	- 2.1
Old sows		2.7	+11.3		2.4	-23.2
Sheep, farm flock	41			35		
Ewes		25.4	- 7.8		26.1	- 4.5
Lambs		8.1	-24.8		9.0	+ 0.6
Feeder sheep	3	230.3	-24.7	13	272.8	+16.4
Laying hens	147	308.9	- 0.4	131	307.2	+ 2.4

Although the southeastern Minnesota farmers indicated a decrease in dairy heifers over one and one-half years old, they had an adequate number on hand at the end of the year to permit the normal amount of culling without reducing the number of milk cows during 1947. The southwestern Minnesota farmers, meanwhile, showed an increase in dairy heifers, but the number on hand at the end of the year was not enough to permit significant increases in dairy cow numbers during the next two years if the normal amount of culling is to be done.

Farmers in southeastern Minnesota indicated a decline in all classes of beef cattle. Southwestern Minnesota farmers showed no change in the number of cows in their beef-breeding herds but showed a substantial decrease in the number of beef heifers. The small number of heifers on hand at the end of the year will not allow for increases in beef cow numbers during 1947.

Market hog and fall pig numbers were reduced by approximately 20 per cent during 1946 in southeastern Minnesota. The southwestern Minnesota cooperators showed no change in the number of market hogs but showed a decline of 11.1 per cent in the number of fall pigs. Farmers in the southeastern area reported an increase of 16 per cent in gilts and old sows, indicating an intention to increase the spring pig crop for 1947. Cooperators from the southwestern region, on the other hand, reported 5.8 per cent less gilts and sows on hand at the end of the year. It should be pointed out, however, that many farmers do not select their sows by December 31. Additional gilts may be selected for breeding from the market hogs on hand. There is also the possibility that unusually high prices this winter may have induced some farmers to market a larger than usual number of bred sows and gilts prior to farrowing.

Pre-Packaging

RALPH V. BACKSTROM

"Pre-packaging" is the term used by fruit and vegetable marketers to denote "consumer packaging." As a producer or distributor, you are interested in knowing if pre-packaging is economically sound, and whether it will make money for you. We might ask the question, "What brought about this interest in consumer packaging?"

The trend toward self-service food stores has encouraged this practice. If self-service works on most food items, why wouldn't it work with fresh fruits and vegetables? However, there are arguments both for and against pre-packaging.

FOR:

1. Consumer appeal from the standpoint of attractiveness and cleanliness.
2. If pre-packaged at point of production, a great saving in transportation charges and handling.
3. With proper pre-packaging and refrigeration, longer "shelf-life" for fruits and vegetables.
4. Less damage and waste.
5. Fewer clerks needed in produce department.
6. Fits well into the operation of a self-service store.
7. Does away with consumer handling of produce.
8. In most cases, the product is ready for the kettle or table with little or no waste for the consumer.
9. Speedier shopping for the customer.
10. Ready for the ice-box.
11. Shipping of carrots with the tops on is costly. Pre-packaged carrots should be an identification mark of freshness for the housewife.

AGAINST:

1. Extra cost of packaging and refrigeration. The reduced spoilage may pay a good share of this cost.
2. Need for more specialized equipment and storage.
3. The increase of packaging and transportation costs if shipping-point packaging does not prove practical.
4. The feeling that the transit risk will be greater.
5. The many costly mistakes that will be made till the technical problems involved can be solved.
6. Poor packaging may destroy consumer confidence.
7. The thinking that it is a cure-all for the ills of the fruit and vegetable business.
8. Package size may not fit consumer needs.
9. Experiments to date have been based on wartime conditions and buying power. Consumers may not be willing to pay the price.

In conclusion, pre-packaging is not a panacea. It is a method of merchandising fruits and vegetables that should be watched very closely. A producer or distributor would do well to study the matter thoroughly in the light of his own commodities. True, some commodities lend themselves more readily to packaging. Periods of surplus will still be a headache. During periods of short supply and on expensive commodities it may have a better chance to succeed.

Minnesota Farm Prices For March, 1947

Prepared by W. C. WAITE and O. K. HALLBERG

The index number of Minnesota farm prices for March, 1947, is 257.7. This index expresses the average of the increases and decreases in farm product prices in March, 1947, over the average of March, 1935-39, weighted according to their relative importance.

Average Farm Prices Used in Computing the Minnesota Farm Price Index, March 15, 1947, with Comparisons*

	Mar. 15, 1947	Feb. 15, 1947	Mar. 15, 1946		Mar. 15, 1947	Feb. 15, 1947	Mar. 15, 1946
Wheat	\$2.53	\$2.05	\$1.59	Hogs	\$26.80	\$23.90	\$14.10
Corn	1.28	1.05	.95	Cattle	18.10	17.00	11.90
Oats .....	.83	.73	.71	Calves	21.40	19.80	13.60
Barley	1.65	1.53	1.13	Lambs-sheep	19.56	18.68	12.46
Rye	3.35	2.80	2.08	Chickens .....	.200	.200	.195
Flax	8.20	6.96	2.92	Eggs .....	.378	.337	.307
Potatoes	1.15	1.10	1.35	Butterfat .....	.790	.740	.540
Hay	12.80	11.80	9.50	Milk	3.350	3.250	2.850
				Wool† .....	.430	.420	.460

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

† Not included in the price index number.

Prices of Minnesota farm products rose about 9 per cent from February to March, with increases of about 13 per cent in crop prices, 9 per cent in livestock prices, and 7 per cent in livestock product prices. The purchasing power of Minnesota farmers rose to 40.7 per cent over the 1935-1939 average, as the rise in prices paid by farmers was somewhat more than offset by the higher prices received.

The largest increases in prices from February to March were wheat, 23 per cent; corn, 22 per cent; rye, 20 per cent; flax, 18 per cent; oats, 14 per cent; eggs, 12 per cent; and hogs, 12 per cent. All feed ratios fell from February to March, as prices of grain rose more proportionately than prices of livestock and livestock products.

Indexes and Ratios for Minnesota Agriculture*

	Mar. 15, 1947	Mar. 15, 1946	Mar. 15, 1945	Average March, 1935-39
U. S. farm price index	256.4	191.4	181.3	100
Minnesota farm price index	257.7	175.4	173.4	100
Minn. crop price index	232.7	193.9	192.7	100
Minn. livestock price index	288.3	170.1	168.5	100
Minn. livestock product price index	233.3	171.9	168.8	100
U. S. purchasing power of farm products	140.0	128.6	125.9	100
Minn. purchasing power of farm products	140.7	117.9	120.4	100
Minn. farmers' share of consumers' food dollar	65.2†	64.1	64.6	48.2
U. S. hog-corn ratio	17.6	12.5	13.1	13.4
Minnesota hog-corn ratio	20.9	14.8	16.8	16.5
Minnesota beef-corn ratio	14.1	12.5	14.2	12.9
Minnesota egg-grain ratio	12.1	14.8	15.5	13.6
Minnesota butterfat-farm-grain ratio	28.9	25.4	26.9	32.4

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

† Figure for December, 1946.

Agricultural Production Credit

H. G. HIRSCH

The Agricultural Commission of the American Bankers' Association has recently published the results of its 1946 survey on bank credit used by American farmers. This survey makes it possible to draw interesting comparisons between Minnesota and the United States as a whole and between commercial bank loans and Production Credit Association loans. All data pertain to the year 1945.

Commercial banks in the United States made about 4¾ million non-real estate loans to 2.1 million farmer-borrowers, or 36 per cent of all farmers in the United States. (This excludes about 400,000 loans guaranteed by the Commodity Credit Corporation to about 200,000 farmers.) These non-real estate loans amounted to a total of 2¾ billion dollars or \$1,284 per borrower and to \$578 per loan. (Each borrower averaged 2.2 loans during the year.) Commercial banks in Minnesota made about 1½ million non-real estate loans to about 136,000 farmers, or 71 per cent of all farmers in the state. These loans totalled 130 million dollars or \$950 per borrower and \$383 per loan. Thus, relative to all farmers, about twice as many Minnesota farmers used this type of commercial bank credit as farmers throughout the nation; but they borrowed only ¾ as much per person and only ⅔ as much per loan. Each Minnesota borrower averaged 2.5 loans.

Production Credit Associations in the United States loaned half a billion dollars to 214,000 farmers, or 3.5 per cent of the nation's farmers. The average size of PCA loans was \$2,386. Minnesota PCA's loaned almost 15 million dollars to 6,400 farmers, or 3.4 per cent of all Minnesota farmers. The average size of PCA loans in the state was \$2,305. While Production Credit Associations did only a small part of all lending for purposes of agricultural production, they have, with governmental aid, done pioneer work as farmers' cooperatives in the field of production credit financing, and they have popularized what is known as "tailored credit."

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