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FARM BUSINESS NOTES

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

NO. 285 UNIVERSITY FARM, ST. PAUL SEPTEMBER 25, 1946

Trends in Farmers' Earnings During the War

S. A. Engene and T. R. Nodland

Farmers' earnings increased sharply during the war. A study of farm earnings during the war period helps throw some light on possible trends for the years ahead. Records kept by cooperators in the Southeastern and Southwestern Minnesota Farm Management Services provide the basis for such an analysis. They provide accurate, detailed information about sales, purchases, volume of production, prices, and other data. The farms included, however, are not entirely representative of all farms in that area because they are above average in size, and the farmers are above average in managerial ability. The principal conclusions drawn from the study, however, will be useful to other farmers.

University Farm Radio Programs

HOMEMAKERS' HOUR—10:45 a.m.

UNIVERSITY FARM HOUR—12:30 p.m.

Station KUOM—770 on the dial

The sales per farm are shown in table 1. Total sales almost doubled from 1940 to 1943, then fell slightly the following two years. These changes were due in part to changes in the physical volume of production and in the types of products sold but primarily to changes in prices.

Table 1. Cash Farm Sales per Farm, Southeast and Southwest Minnesota Farm Management Services, 1940-1945

	1940	1941	1942	1943	1944	1945
Dairy products	$ 988	$1,280	$ 1,504	$ 1,725	$ 1,907	$ 2,221
Cattle	1,947	2,393	2,773	2,592	2,186	2,770
Hogs	1,078	2,019	3,659	4,551	3,924	3,478
Sheep and wool	325	566	729	571	492	560
Poultry and eggs	675	935	1,351	1,631	1,787	1,855
Crops	1,136	1,211	1,435	1,766	1,509	1,672
Miscellaneous	1,114	1,007	877	670	615	602
Total sales	$7,263	$9,411	$12,328	$13,506	$12,420	$13,158

The production per farm of some of the principal products is shown in table 2. The volume of crop production varied from year to year according to weather conditions, but with a slight downward trend. There was a stronger downward trend in the quantity of crops sold, because of increased feeding to livestock. Hog production increased 65 per cent from 1940 to 1943. Large reserves of corn at the beginning of the war helped make this rapid increase possible. By the end of 1943 the surplus reserves of corn had been exhausted. Hog production during the next two years was reduced to a level that could be supported by current feed production. Beef production declined slightly during this period. Milk production also declined slightly on these farms. Dairy cow numbers were reduced and production per cow fell, especially in 1944. Egg production increased by 74 per cent from 1940 to 1945. This was the result of a 30 per cent increase in the number of hens and a 36 per cent increase in production per hen. The total volume of products sold increased until 1943, and then fell almost to the 1940 level.

Table 2. Livestock and Crop Production per Farm, Southeast and Southwest Minnesota Farm Management Services, 1940-1945

	1940	1941	1942	1943	1944	1945
Roughages, tons	91	99	101	85	88	85
Feed grains, tons	119	104	119	98	111	93
Cash grains, bushels	462	320	412	290	160	400
Hogs, pounds	19,602	23,632	28,954	32,097	24,765	25,928
Beef, pounds*	7,084	8,917	7,165	6,093	5,470	5,855
Butterfat, pounds	3,178	3,352	3,300	2,972	2,718	2,848
Eggs, dozen	1,808	2,025	2,440	2,858	3,149	3,184

* Does not include production of dairy cattle.

Production increased less on these farms than for all farms in the state. Total value of sales on these farms increased by 81 per cent from 1940 to 1943, while sales for all farms in the state increased by 130 per cent. The increases from 1940 to 1945 were 91 and 116 per cent.[1] Since the cooperators in the Farm Management Service were above average in management ability their farms were operated more nearly at capacity at the start of the war than were most farms in the state. More of these farmers had already adopted the newer varieties of crops and were using the better production practices. They had better livestock. With bigger farms they were utilizing their machinery and labor more efficiently.

These farmers changed slightly the kinds of products sold. In 1940 most of them sold cream. By 1945 a considerable number had changed to selling whole milk. This change gave them a direct cash income for their skim milk, and increased the total income from the dairy

[1] Waite, Warren C., "Minnesota Farm Income," Farm Business Notes, No. 276, December 27, 1945.

Table 3. Average Prices Received by Farmer Members of the Southwestern and Southeastern Minnesota Farm Management Services, 1940 and 1945

Product	1940	1945
Butterfat in cream, per pound	$0.32	$ 0.64*
Hogs, per cwt.	5.20	14.26
Eggs, per dozen	.16	.36
Turkeys, per pound	.15	.33
Wool, per pound	.30	.43
Corn, per bushel	.47	1.05
Oats, per bushel	.26	.64

* Includes government subsidy.

products. They also reduced the quantity of crops sold, converting these crops into livestock and livestock products, particularly hogs and eggs. This change also tended to increase the value of sales from their farms.

Only a small part of the change in the value of sales on these farms can be ascribed to changes in the volume of production, or in the types of products sold. Most of it was due to increases in prices. The prices in 1940 and 1945 of some of the principal products are shown in table 3. Most of these prices doubled or more than doubled during this period. Total sales increased by about the same proportion.

The future income of these farmers will depend largely upon prices, as it did during the war. Unless high levels of nonagricultural production, employment, and foreign trade can be maintained, prices are likely to fall. Prices of raw materials, including farm products, usually are among the first to change. Those prices also change more violently than do prices of manufactured commodities. These farmers can then expect that their gross income will change accordingly.

The average values of purchases per farm are presented in table 4. Expenses increased steadily during the war period. By 1945 they were 60 per cent above 1940. As with sales, this increase was due primarily to rising prices.

These farmers reduced slightly their purchases of livestock, particularly cattle. They increased materially their purchase of feeds during the early years, but by 1945 the quantity was about the same as in 1940. The increased expenditure for power, machinery, and equipment was due primarily to increased purchases of fuel and lubricants and to the purchase of additional tractors. They reduced the quantity of construction and repair of buildings. They hired about the same quantity of labor during the first five years, but reduced the quantity in 1945. For the farm as a whole the quantity of purchases remained fairly constant.

Prices for most of these items increased, some of them very sharply. Prices for livestock, feeds, and seeds increased very markedly, along with the rise in prices received by farmers. These prices will probably fall if prices of other farm products fall, and at about the same rate. Wages increased rapidly. They will probably fall with a decline in farm prices; but may fall more slowly. Prices for twine, fertilizer, some machinery, and building construction rose during the war, but much less rapidly than prices for farm products. Some of these have risen further since 1945, and may continue to rise. Most of these are manufactured products, for which prices tend to change more slowly than for farm products. They may continue at a higher level than at the beginning of the war.

The average net cash income of these farmers is shown on the last line of table 4. This is the amount available for living expenses, interest on debts, and to pay off debts or make other savings. The net cash income rose rapidly from 1940 through 1942. During this period these farmers sold livestock raised from current production and from reserve feeds. Prices rose rapidly on the products they sold. Prices of products purchased rose relatively slowly. During the following years, production was reduced to some extent. Prices of products sold from the farm also rose more slowly. Prices for products purchased continued to rise. Costs rose at the same rate as sales, holding net cash income approximately constant.

Table 4. Cash Farm Expenses and Net Cash Income per Farm, Southeast and Southwest Minnesota Farm Management Services, 1940-1945

	1940	1941	1942	1943	1944	1945
Cash farm expenses:						
Livestock purchases	$1,421	$1,705	$1,900	$1,664	$1,439	$1,722
Feed	815	1,231	1,786	2,416	1,949	2,073
Other livestock expense	75	105	134	179	164	179
Crop expense	214	248	326	433	528	516
Custom work hired	137	126	180	200	250	282
Power, mach., and equip.	1,159	1,513	1,446	1,320	1,598	1,710
Buildings and fences	470	522	476	500	553	515
Hired labor	398	503	594	715	728	650
Taxes, ins., and misc.	354	370	400	410	415	422
Total farm expenses	$5,043	$6,323	$7,242	$7,837	$7,624	$8,069
Total farm sales	7,263	9,411	12,328	13,506	12,420	13,158
Net cash income	2,220	3,088	5,086	5,669	4,796	5,089

If the general price level falls it is probable that prices will fall more rapidly for most agricultural products. Some expense items will fall rapidly; others will fall slowly or not at all. Net cash income will then fall rapidly. If agricultural prices fall to the 1940 level, net cash income will probably fall below the level of that year. Similar readjustments have occurred after previous wars. Farmers will do well to plan their programs with that fact in mind, and be prepared for less favorable incomes in the years ahead.

The Feed Situation

S. A. Engene

The supply of feeds in the United States will be adequate during the coming year. On the basis of August 1 crop prospects the supply of feed grains per animal unit will be the largest on record. The supply per animal unit will be about 5 per cent above the 1939-43 level. A record crop of corn and a near record crop of oats have contributed to this generous supply. The quantity of by-product feeds will be about equal to last year, with high protein feeds slightly lower. Hay also will be ample. This generous supply of feed will provide more grains for industrial uses and direct consumption as well as for livestock, and may permit some restoration of feed reserves on farms.

The feed situation in Minnesota is equally favorable. The production and utilization of feeds in the state are

Table 1. Feed Grain Production and Requirements in Minnesota

Crop	Average 1936-41	1943-44	1944-45	1945-46	1946-47
Production minus seed	Thousands of tons				
Corn (for grain)	3,529	5,122	6,003	5,107	6,439*
Oats	2,180	2,065	2,276	3,663	2,970†
Barley	1,081	480	303	274	455†
Total available	6,790	7,667	8,582	9,044	9,864
Needed for livestock	5,024	7,196	6,183	8,282‡	5,931
Available for other uses	1,766	471	2,399	762	3,933
Sales off farms	1,546	1,071	1,817	1,022	?
Changes in feed reserves	+220	−600	+582	−260	?

* August 15 estimate.
† August 1 estimate.
‡ High feed requirement due largely to low feeding value of 1945 corn crop.

shown in table 1. According to August 15 prospects, corn production will set a new record. Drouth continuing after August 15 in some areas and early September frosts in some local areas may reduce the final harvest below this estimate, but it probably will rank as one of the largest crops in the state. The total production of feed grains is likely to reach a record high. With a sharply reduced pig crop, the feed grains needed for livestock will be less than during the war years, although above the prewar level. The quantity of feed grains available for sale to industrial users or to farmers in other states will be the largest in the history of the state. It also will be possible for farmers to build substantial reserves on their farms.

The supply of hay and roughages in the state will be ample, although not as generous as that of feed grains. On the basis of August 1 crop prospects the production of wild and tame hay in 1946 will be 5,969,000 tons compared with 6,290,000 in 1945 and 5,917,000 during the five-year period 1936-41. With a materially smaller number of sheep and a somewhat smaller number of cattle than last year the over-all supply of roughages will be adequate. The hay crop was very uneven, however. Some areas will have surpluses while others will be short.

With ample feed supplies farmers will be able to feed generously to obtain high levels of production. Some may find it profitable to sell grain. As feed reserves accumulate, prices are likely to fall relative to livestock prices. Many farmers may find it profitable to increase the number of sows farrowed in 1947.

Profit Sharing With Farm Workers

J. B. McNulty

Some farmers are seeking better ways of keeping their hired help satisfied and on the job. One farmer who operates a 160-acre farm is using the following plan:

Each worker is guaranteed a cash wage per month for the calendar year or 25 per cent of the net farm income, whichever is the greater. The wages agreed upon are intended to equal or exceed the going wages of married farm workers in the community. In 1945, 25 per cent of the net income exceeded the guaranteed wage income of each worker by $464.00. To keep the workers informed, the employer used his farm accounts to estimate the size of the worker's bonuses for the first six months of the year. The 1946 midyear-estimate indicated that the bonuses would be higher in 1946 than in 1945. The employer advances money for living expenses as requested, but not to exceed the amount due for wages.

The wives of the workers are required to wash the dairy utensils, prepare the eggs for market, and help care for the baby chicks. Extra help needed for such work as threshing and silo filling is boarded by the workers.

Principal sources of income are whole milk, certified seed grains, poultry, eggs, and young stock for breeding purposes. A written contract setting forth the terms of the agreement is signed by the two workers and the employer. A complete settlement is made at the end of the year.

The owner lives on the farm. He manages the business, makes all purchases and sales, pays all bills, and keeps the farm accounts. In emergencies he may help with some of the farm work. Both workers live in separate houses on the farm.

Each worker is allowed one fourth of an acre for a garden, 2 quarts of milk daily, 3 dozen eggs per week, and one third of the dead wood cut for fuel. Workers pay farm market prices for other farm produce used. They also pay for additional fuel, if needed, and for the electricity used in their homes.

In calculating the net income to be shared with the workers, all operating expenses, including grass seed, ordinary repairs for the machinery and other operating equipment, and a 10 per cent depreciation allowed the owner on his machinery are deducted from total receipts. "Workmen's insurance" for the workers is also included with operating expenses. Operating expenses do not include the taxes, repairs, and upkeep on the real estate nor the taxes on the personal property.

The plan contemplates that dairy cow numbers will be maintained. Two-year old heifers to freshen within 30 days are accepted as mature cows in making settlements. The value of the increase or decrease in young stock is based on the estimated weights and the average prices received for young stock and cows sold for meat purposes during the year. The owner thinks that a market value of a certain grade of feeder cattle might be used instead of sale values of cattle sold from the herd. The weight of each animal is estimated separately. This method of calculating values of young breeding stock is used to avoid disagreements on valuing this kind of livestock. To be prepared to apply this method for adjusting values for increases or decreases in cow numbers, the weight of each heifer is estimated and recorded when she first freshens.

Quantities of seed, feed, and supplies as well as numbers and kinds of livestock are inventoried at the beginning and end of the year. Farm market prices for all items except the breeding livestock are also recorded. *Equal quantities* of feed, seed, numbers of poultry, weights of young stock, and supplies have equal values at the beginning and end of the year. The value of *increases* in poultry, feed, seed, and supplies at the end of the year is based on current prices at that time. But the value of *decreases* in these items at the end of the year is based on current prices at the beginning of the year. The owner uses this method of measuring inventory changes to reduce the risk of losses due to lower prices.

Minnesota Farm Prices For August, 1946

Prepared by W. C. WAITE and H. W. HALVORSON

The index number of Minnesota farm prices for August, 1946, is 241. This index expresses the average of the increases and decreases in farm product prices in August, 1946, over the average of August, 1935-39, weighted according to their relative importance.

Average Farm Prices Used in Computing the Minnesota Farm Price Index, August, 1946, with Comparisons*

	Aug. 15, 1946	July 15, 1946	Aug. 15, 1945		Aug. 15, 1946	July 15, 1946	Aug. 15, 1945
Wheat	$1.84	$1.96	$1.52	Hogs	$20.50	$16.40	$14.00
Corn	1.71	1.85	1.01	Cattle	18.70	16.70	12.00
Oats	.67	.81	.52	Calves	16.80	16.00	13.70
Barley	1.38	1.39	1.03	Lambs-Sheep	15.84	15.39	12.77
Rye	1.63	1.85	1.32	Chickens	.244	.249	.245
Flax	3.65	3.45	2.91	Eggs	.324	.324	.381
Potatoes	1.55	1.40	1.80	Butterfat	.77	.72	.53
Hay	9.30	8.00	8.20	Milk	3.55	3.30	2.65
				Wool†	.45	.45	.47

* These are the average prices for Minnesota as reported by the United States Department of Agriculture.
† Not included in the price index number.

The period of price adjustment following removal of price controls continued into August with Minnesota farm prices rising approximately 5 per cent during the month. Price decreases averaging 5 per cent were noted in the crops, while livestock prices rose by 17 per cent and livestock products by 5 per cent.

Price ratios, although somewhat more favorable than during July, are still below levels that are normally regarded as favorable for expansion in animal numbers or animal products.

Even with current crop price decreases the crop prices average nearly 25 per cent higher than the corresponding month last year. Livestock prices are nearly 50 per cent higher than August, 1945, and livestock products 27 per cent higher, while the combined index is 32 per cent higher than the 183 of August, 1945.

Indexes and Ratios for Minnesota Agriculture*

	Aug. 15, 1946	Aug. 15, 1945	Aug. 15, 1944	Average August 1935-39
U. S. farm price index	235.8	193.2	182.8	100
Minnesota farm price index	241.4	183.2	177.4	100
Minn. crop price index	241.7	190.9	187.7	100
Minn. livestock price index	244.2	164.9	157.2	100
Minn. livestock product price index	238.2	187.1	178.3	100
U. S. purchasing power of farm products	144.5	134.2	129.8	100
Minn. purchasing power of farm products	147.9	127.2	126.0	100
Minn. farmers' share of consumers' food dollar	63.9†	.....	61.5	48.4
U. S. hog-corn ratio	11.6	12.4	11.5	12.3
Minnesota hog-corn ratio	12.0	13.9	13.0	14.6
Minnesota beef-corn ratio	10.9	11.9	11.3	12.0
Minnesota egg-grain ratio	11.4	18.5	14.8	15.9
Minnesota butterfat-farm-grain ratio	30.4	36.6	26.5	33.5

* Explanation of the computation of these data may be had upon request.
† Figure for May, 1946.

Feed Purchases Increase

Minnesota farmers spent $99,020,000 for the purchase of livestock and poultry feeds in 1944 according to compilations from the recently released County Series of the 1945 Census of Agriculture. This sum represents a more than fivefold increase over the $19,304,000 reported spent in 1939. The increases in dollar value of feeds purchased were relatively smaller in the northern part of Minnesota and in the Twin Cities area where feed expenditures were only three to four times as large as in 1939.

Only 68 per cent of Minnesota farms reported feed purchases for 1939, while 89 per cent reported feed purchases for 1944. The feed bill per farm increased from $145 to $589 over the same period. The feed expenditure per farm in 1944 was largest in southwestern Minnesota, averaging $878, but amounted to only $344 per farm in the northern areas of the state. The remainder of the state was slightly above average.

The U. S. Department of Agriculture estimates cash receipts of Minnesota farmers from sales of livestock and livestock products in 1944 at $646,016,000; the $99,020,000 feed bill would constitute 15 per cent of this amount. A similar comparison for 1939 indicates feed costs constituted only 8 per cent of the estimated $244,105,000 cash returns from sales of livestock and livestock products in that year. The department has further estimated production expenses at $411,217,000 in 1944 of which the feed bill would constitute 24 per cent. For 1939 the feed bill was only 8 per cent of the $240,773,000 estimated production expenses.

The feed prices paid by farmers in the United States in 1944 were almost 90 per cent above 1939 prices. Thus, the same quantity of feed in 1944 would cost almost twice as much as it did in 1939. After allowing for this increase in prices for the 1939 quantities, an additional $63,000,000 increase in the feed bill remains to be explained in terms of (1) more farmers using feed, (2) a greater amount of feed used per farm, and (3) better quality of feed used.

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