

FARM BUSINESS NOTES

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

NO. 240

UNIVERSITY FARM, ST. PAUL

DECEMBER 20, 1942

Farm Income in Minnesota

WARREN C. WAITE

Minnesota is just completing its greatest agricultural year. The gross cash income from the sale of agricultural products and the physical volume of sales by the farmers appear to have been the largest on record. The total of the sales of the 19 principal agricultural products of the state is estimated at close to 650 million dollars. This compares with estimated sales of about 480 million dollars in 1941 and an average of 311 million dollars for the five-year period 1935 to 1939. Expenses of farm operators have increased during the year but not as much as the receipts from marketings. Some expenses, such as wages, feed, and rent, have increased considerably, but others, such as mortgage interest, taxes, and depreciation, have increased only moderately. The result has been a considerable increase in the net farm income for the state as compared with a year ago and the five-year period from 1935 to 1939.

Estimates of the total gross cash sales of the 19 principal agricultural products of the state are given in table 1 for purposes of comparison. These estimates have also been expressed as relatives with the average of the five-year period 1935 to 1939 taken as 100. The included commodities are wheat, corn, oats, barley, rye, flax, potatoes, hay, hogs, cattle, calves, lambs-sheep, butterfat, milk, farm butter, chickens, eggs, wool, and turkeys. A large number of the less important commodities in the state are not included, but the sales of included commodities constitute over 90 per cent of the sales by Minnesota farmers and in consequence are adequate for showing changes between years.

Table 1. Gross Cash Income from the Sale of the 19 Principal Minnesota Agricultural Products, 1929-1942

Year	In millions of dollars	Relative to 1935-39 average	Year	In millions of dollars	Relative to 1935-39 average
1929	413	133	1936	332	107
1930	345	111	1937	341	110
1931	247	79	1938	310	100
1932	167	54	1939	312	100
1933	190	61	1940	361	116
1934	213	68	1941	480*	155*
1935	259	83	1942	650*	208*

* Preliminary.

University Farm Radio Programs

HOMEMAKERS' HOUR—10:45 a.m.

UNIVERSITY FARM HOUR—12:30 p.m.

THE FRIENDLY ROAD—1:00 p.m.

Station WLB—770 on the dial

Volume of Production Large

Crop production the past year was large. The season was especially favorable for wheat. The indicated production of corn on November 1 was 209 million bushels which is an all-time record. The quality of the crop, however, was lowered by the September freeze. The index of yields for corn, wheat, oats, barley, rye, flax, and potatoes was 126 with the average yields for 1935 to 1939 equal to 100. This was the highest index for any year since 1918. Creamery butter production in the state appears to have been somewhat below the large output of 1941, averaging about 4 per cent lower for the first nine months. Other manufactured dairy products increased. Livestock production continued to increase. The most important expansion was in hog production with the June pig report indicating 16 per cent more spring pigs saved this year than a year ago. Sheep also increased and cattle slightly but the number of milk cows is probably about the same as a year ago. Egg production increased greatly and up to October had been about 20 per cent larger than in 1941.

The Rise in Agricultural Prices

The prices of farm products rose during the year. The Minnesota farm price index will average nearly 25 per cent higher for 1942 than for 1941. Compared with 1941, livestock prices seem to have risen somewhat more than crops and crops more than livestock products. Indexes of these three groups, for the commodities in the Minnesota farm price index, are shown in table 2. As is evident from the level of the indexes for these commodity groups, feeds are relatively low in price compared with livestock

Table 2. Indexes of Minnesota Farm Prices by Groups (1935-1939 = 100)

Year	All products	Crops	Livestock	Livestock products
Av. 1935-1939	100	100	100	100
1939	83	73	88	83
1940	86	80	84	92
1941	111	92	117	116
1942	140*	120*	155*	137*

* Preliminary.

Table 3. Minnesota Feeding Ratios

	October 1942	Average of October 1930 to 1939
Butterfat-farm grain	42.7	40.6
Hog-corn	20.7	16.0
Beef-corn	17.4	15.9
Egg-grain	23.7	23.9

and livestock products. Since feed constitutes such an important element in the cost of raising livestock and producing livestock products, this has an important bearing upon the profitability of these enterprises and the probability of their expansion. These relationships are examined further in table 3 which gives feeding ratios for the fall of 1942 and compares them with the ten-year averages for 1930-1939 for the corresponding month. All of these ratios, except the egg-grain ratio, are above their ten-year average, and the egg-grain ratio is approximately at the ten-year average. The ratios for beef cattle and hogs are relatively more favorable when compared with their ten-year average than those for butterfat and eggs. This together with the labor shortage on many farms tends to increase the output of these products somewhat more. The hog-corn ratio is the number of bushels of corn which 100 pounds of hogs will buy at Minnesota farm prices. The beef-corn ratio is the number of bushels of corn which 100 pounds of beef cattle will buy. The butterfat-farm-grain ratio is the number of pounds of feed mixed in the proportion of $\frac{1}{2}$ oats, $\frac{1}{4}$ corn, and $\frac{1}{4}$ barley that one pound of butterfat will purchase. The egg-grain ratio is the number of pounds of a mixture of grain consisting of one bushel each of wheat, corn, and oats which a dozen eggs will buy.

Governmental Control of Farm Prices

Agricultural prices were brought increasingly under governmental control during the year and this probably had a considerable influence in curtailing the rise in the latter portion of the year. The Emergency Price Control Act of January 30 placed few restraints upon a continued rise, and in February the Price Administrator reported that only 3 per cent of the agricultural commodities and 13 per cent of the food products included in the Bureau of Labor Statistics Wholesale Price Index had been brought under controls. The General Maximum Price Regulation, however, which became effective on retail prices on May 11, is estimated to have extended controls on the retail price level to 60 per cent of the farm

and 76 per cent of the food products included in the Bureau of Labor Statistics Wholesale Price Index. The Amended Price Control Act of October further extended the controls over agricultural prices, and lessened the probability of more than a gradual rise in the near future.

Corresponding Periods of the Two World Wars

The Minnesota agricultural situation appears to have improved more rapidly in this war, relative to the average of the five-year period preceding the war, than in the corresponding period of World War I. Indexes for the two periods, with the five years preceding the war as a base, are shown in table 4.

Prices of Minnesota agricultural products had risen relatively more by 1917 than by 1942, although if the year of the beginning of the war, 1939, had been taken as a base rather than the five-year period, 1935-1939, the difference would have been less. The much greater increase in the gross cash income in World War II has been due to the greater increase in the volume of agricultural production in the World War II period. There was not a very large increase in the Minnesota agricultural output during World War I relative to the years immediately preceding the war. It was not until the early 1920's, several years after the war, that the state experienced a great and sustained increase in output. In this war, however, there has been a decided expansion in output due in large part to a series of very favorable crop years. The index of the cost of things bought by farmers has risen less in the present war than the earlier one, with the result that the net incomes of farmers must have increased more in World War II than in World War I.

The relations among the agricultural prices also differed in the two war periods. In World War I there was a large demand for cereals, especially wheat, and crop prices were high relative to livestock prices. In this war the greatest increase in demand has been for meat and livestock products and these prices have been high relative to crop prices. It is worth noting that Minnesota agriculture has been peculiarly adapted to benefit from the demand changes in each of these wars. In the period of 1910-1914 nearly half of the agricultural income was derived from the sale of crops, while in the period 1935-1939 about four fifths of the income arose from the sale of livestock and livestock products.

Changes in Farmers' Net Worth As Related to Earnings

TRUMAN R. NODLAND

Table 4. Indexes of Minnesota Gross Cash Income, Prices Received, and Prices Paid for Goods Bought, by Farmers

Year	World War I Index of			Year	World War II Index of		
	Gross cash income	Prices received	Cost of things bought		Gross cash income	Prices received	Cost of things bought
1910-14 av.	100	100	100	1935-39 av.	100	100	100
1915	114	101	105	1940	116	86	98
1916	129	122	124	1941	155	111	105
1917	169	182	149	1942	208	140	122

Data obtained from farm records kept by the cooperators in the various Farm Management Services in Minnesota during 1941 provide the basis for a study of the relationship of financial progress to earnings. The measure of earnings used is the returns to operator's capital and family labor or the amount available to the family for living expenses and for savings (additions to the farm capital, payments on indebtedness, purchase of securities, etc.).

Table 1. Relation of Financial Progress to the Returns to Capital and Family Labor, 1941

Return to capital and family labor		No. of farms	Gain in net worth	Dec. 31, 1941		Acres per farm
Range	Average			Total assets	Total liabilities	
Owner-operated farms						
Below \$3,000.....	\$2,379	41	\$ 819	\$19,480	\$ 6,972	175
3,000-5,499	4,122	71	1,928	27,122	8,705	200
5,500 and over	6,965	45	3,762	41,562	11,405	289
Part-owned farms						
Below \$3,000.....	1,990	5	659	16,196	4,930	197
3,000-5,499	4,098	33	2,135	26,048	8,713	268
5,500 and over	8,799	29	5,623	46,053	12,839	412
Rented farms						
Below \$3,000.....	2,178	44	985	6,587	1,517	220
3,000-5,499	4,017	29	2,289	13,669	2,495	240
5,500 and over	7,085	10	3,550	19,163	4,733	300
All farms						
Below \$3,000.....	2,259	90	892	12,994	4,192	198
3,000-5,499	4,093	133	2,058	23,922	7,353	226
5,500 and over	7,613	84	4,379	40,446	11,106	333

The change in net worth during the year represents the financial progress made by the family.

The families with high earnings had the largest increase in net worth and spent a larger sum for living expenses (table 1). However, as earnings reached higher levels a greater proportion went toward an increase in net worth. The difference between the returns to capital and family labor and the gain in net worth shows the amount used by the family for living expenses including the family living secured from the farm.

For owner-operated farms 34 per cent of the earnings of the low income group and 54 per cent of earnings of the high income group went into savings. In the low earnings group the living expenses of the family receive the first consideration. For rented farms there was not a great deal of difference between the low and high income groups in the proportion of the earnings going into savings. It is possible that among the renters the low income families are using less funds for living expenses in order to increase the farm capital and thereby increase their future incomes.

Forty-three per cent of the part-owned farms are in the high earnings group. This is in contrast to the rented farms where 53 per cent are in the low earnings group. Since only the assets owned by the family are included, the owners and part-owners have the larger investment, larger debts, and also a larger net worth. There is a strong relationship between earnings and size of farm operated for all the groups. In general, the part-owners operate the greater acreage.

One should bear in mind that these figures represent the earnings and gain in net worth for a select group of farmers and for only one year.

How Much Time Can A Tractor Save?

S. A. ENGINE

Tractors are valuable labor-savers during the war. As much as one fourth of the labor needed for crop production can be saved by using tractors instead of horses as a

source of power. This is shown in table 1. A typical farm in southern Minnesota has about 120 acres of crop land with 60 acres of small grains, 36 acres of corn, and 24 acres of hay.

According to some records kept by Minnesota farmers, 1,398 hours of labor will be needed to prepare the seedbed, plant, cultivate, and harvest the crops on this land if horses are used. Only 1,034 hours will be needed if a two-plow general-purpose tractor and a team of horses are used. This is a reduction of 364 hours, or 26 per cent, a saving of about two hours per day for the crop-growing season when time is most valuable.

Table 1. Hours Required for Crop Work

Crop operation	Acres	Times covered	Hours per acre							
			Horses			Tractor				
			Man	Horse	Tractor	Man	Horse	Tractor		
Plowing	96	1	96	2.8	11.2		1.2		1.2	
Disking	72	1	120	.6	2.4		.4		.4	
	24	2								
Harrowing.....	60	1	132	.3	1.2		.2		.2	
	(spike tooth)	36	2							
Seeding grain	60	1	60	.6	2.4		.4		.4	
Planting corn	36	1	36	.8	1.6		.6		.6	
Cultivating										
corn	36	4	144	.8	3.2		.5		.5	
Cutting grain	60	1	60	.8	3.2		1.2		.6	
Shocking grain	60	1	60	1.1			1.1			
Threshing	60	1	60	3.4	4.7	.4*	3.4	4.7	.4	
Picking corn..	28	1	28	7.0	14.0		4.5	4.7	1.5	
Cutting corn..	8	1	8	1.7	5.1		1.4		1.4	
Filling silo ..	8	1	8	10.0	12.0	1.5*	10.0	12.0	1.5	
Cutting hay...	24	2	48	1.1	2.2		.4		.4	
Raking hay...	24	2	48	.7	1.4		.7	1.4		
Hauling hay...	24	2	48	3.0	4.5		2.4	2.4	.6	
Total hours per year										
All operations	1,398			3,545	36*	1,034	659		480	

* Hired tractor.

More than half of the saving in labor is in seedbed preparation and planting. This is usually a very busy season when a saving in time is important. Another large saving is made in corn cultivation and haying, two operations which frequently conflict and require extra workers. Little time is saved during small-grain harvest and silo filling.

In addition to reducing the number of hours required for doing the crop work, the tractor makes it possible to work longer days during the rush seasons.

The use of a tractor can also save time on other jobs. Grinding feed on the farm will frequently require less time than taking the feed to town. Brooder houses, heavy feeders, and other equipment can be moved quickly with a tractor.

The use of tractors will help to maintain a high level of agricultural production with a reduced labor supply. Some replacement of worn-out tractors and additions of new ones will be necessary for this purpose. Under war conditions it will be impossible to supply all of the demands for new tractors; consequently those now in use must be kept in operation as long as possible by adequate lubrication and timely repairs. Fullest possible use of existing tractors must be achieved by cooperation among neighbors. Although this may be inconvenient, it is necessary during a war period.

Minnesota Farm Prices For November, 1942

Prepared by W. C. WAITE and H. G. HIRSCH

The index number of Minnesota farm prices for November, 1942, was 154. The index numbers for the three classes of farm products were: crop prices 128, live-stock prices 172, and livestock product prices 142.

The price index of 154 for the past month is the net result of increases and decreases in the prices of farm products in November, 1942, over the average of November, 1935-39, weighted according to their relative importance.

Average Farm Prices Used in Computing the Minnesota Farm Price Index, November 15, 1942, with Comparisons*

	Nov. 15, 1942	Oct. 15, 1942	Nov. 15, 1941		Nov. 15, 1942	Oct. 15, 1942	Nov. 15, 1941
Wheat	\$ 1.00	\$.99	\$.92	Cattle	\$11.40	\$11.80	\$8.80
Corn .....	.66	.68	.54	Calves	12.60	12.70	10.50
Oats .....	.38	.36	.36	Lambs-Sheep	11.81	11.46	9.20
Barley .....	.54	.54	.56	Chickens .....	.16	.16	.12
Rye .....	.45	.48	.52	Eggs .....	.33	.32	.30
Flax	2.22	2.24	1.60	Butterfat .....	.50	.49	.40
Potatoes .....	.85	.85	.55	Hay	5.20	5.00	4.40
Hogs	13.50	14.10	9.60	Milk	2.35	2.30	2.25
				Wool† .....	.39	.39	.38

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

† Not included in the price index number.

All prices showed a remarkable stability during the last month. The slight changes that occurred are largely due to seasonal price movements.

Livestock prices except lambs-sheep declined. However, the livestock price index rose from 165 in October to 172, because the seasonal decline in livestock prices for the years 1935 to 1939 was more pronounced than this year. The index of livestock product prices fell from 149 in October to 142, although actual livestock product prices increased slightly or remained unchanged. This change in the index is mainly due to the increased importance of chickens in November.

The larger livestock price index and a slight rise in the crop price index caused an increase of the Minnesota farm price index from 151 to 154 in spite of the decline of the livestock product price index.

Indexes and Ratios for Minnesota Agriculture*

	Nov. 15, 1942	Oct. 15, 1942	Nov. 15, 1941	Average Nov. 1935-39
U. S. farm price index	160.6	158.2	128.3	100
Minnesota farm price index	154.1	150.7	120.6	100
U. S. purchasing power of farm products	127.7	126.8	112.7	100
Minn. purchasing power of farm products	122.5	120.7	106.1	100
Minn. farmers' share of consumers' food dollar		58.6	53.5	47.1
U. S. hog-corn ratio	17.7	18.2	15.2	14.4
Minnesota hog-corn ratio	20.5	20.7	17.8	17.3
Minnesota beef-corn ratio	17.3	17.4	16.3	15.1
Minnesota egg-grain ratio	24.2	23.7	24.4	24.6
Minnesota butterfat-farm-grain ratio	42.7	42.7	36.5	39.7

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

Government Action in Dairy Markets

Important actions have been taken recently by the government to alleviate the growing shortages in some of our dairy products and to control prices. Immediately following the passage of the Amended Price Control Act, and effective October 5, a 60-day emergency ceiling was established on wholesale and retail prices of all dairy products, except fluid milk and cream and ice cream. The latter had previously been subject to price control. The level established was the highest reached during the period from September 28 to October 2. This temporary ceiling was indefinitely extended on December 3. Spray-process dry milk supplies which have been far short of combined military, lend-lease, and domestic requirements were also made subject to a WPB conservation order on November 5. This order requires the setting aside of 90 per cent of new production for disposal by the government. On November 20 about half of the butter in cold storage warehouses in the principal cities was frozen for sale to government agencies only. The intent of the order was to guarantee supplies for military and lend-lease purposes during the period of short production. Further action was taken by the WPB on November 25 by prohibiting the sale to consumers by distributors of any cream having a butterfat content in excess of 19 per cent. This was followed on December 4 by an order reducing the commercial manufacture of ice cream, ice cream mix, and frozen desserts during December and January by 20 per cent. Agreement has been reached between the Office of Price Administration and the Agricultural Marketing Administration for the support of the wholesale price of butter at a level of not less than 46 cents per pound for 92 score butter at Chicago. The price of cheese is also to be supported on a basis of 27 cents per pound for number one American cheese at Plymouth, Wisconsin. The Office of Price Administration ceiling price on cheese for civilians remains at 23¼ cents, and the difference between this price and the 27 cent price to be supported is to be made up by the Commodity Credit Corporation.

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

PAUL 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, Paul E. Miller, Director. Published in furtherance of Agricultural Extension Acts of May 8 and June 30, 1914.