

FARM BUSINESS NOTES

Prepared by the Divisions of Agricultural Economics and Agricultural Extension
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Trends in Value of Farm Property

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That significant differences are found in the long-time trends of values per acre of different kinds of farm property is indicated by data for Minnesota from the ten-year census reports of 1900-1940, inclusive. In the 1900, 1910, and 1920 censuses, figures for each state are shown separately for land, buildings, implements and machinery, and livestock. In the 1930 and 1940 censuses, figures are shown separately for livestock, implements and machinery, buildings, and land and buildings combined, but not for land alone. For these years it is assumed that the difference between the value of the land and buildings combined and of buildings alone represents the value of the land.

Trends were upward in the values per acre of each kind of farm property in Minnesota from 1900 to 1920. The trends were downward from 1920 to 1940, with the exception of buildings from 1920 to 1930 and implements and machinery from 1930 to 1940 (table 1). However, the rate of change from period to period varied greatly among the different kinds of property.

Implement and Machinery Values Show Greatest Rise

For the period 1900 to 1920, the greatest relative increase in value per acre occurred in the case of implements and machinery, with an increase of 421 per cent. Buildings ranked second, with an increase of 334 per cent, land a close third with 327 per cent, and livestock fourth with

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198 per cent. The rate of increase for buildings was about the same during each decade of this 20-year period, increasing 109 per cent from 1900 to 1910 and 107 per cent from 1910 to 1920. The rate of increase for livestock also was about the same during each of these decades, but at a lower level than for buildings, increasing 72 per cent from 1900 to 1910 and 73 per cent

from 1910 to 1920. Increases in values of land and of implements and machinery, on the other hand, were much greater from 1910 to 1920 than during the previous decade. The value of land per acre increased 72 per cent from 1900 to 1910 and 147 per cent from 1910 to 1920, while the value of implements and machinery increased 64 and 217 per cent respectively during the two periods.

During the following 20-year period from 1920 to 1940, the greatest relative decline in value per acre occurred in the case of land, with a decrease of 70 per cent. Livestock ranked second with a decline of 30 per cent, buildings third with 8 per cent, and implements and machinery remained almost constant with a decline of only 1 per cent. The rate of decline for land was about the same during each decade of this period, being 48 per cent from 1920 to 1930 and 41 per cent during the next decade. Livestock values declined only 8 per cent from 1920 to 1930 but 25 per cent from 1930 to 1940. On the other hand, the value of buildings per acre increased 19 per cent from 1920 to 1930, followed by a decline of 23 per cent the next decade, while implement and machinery values decreased only 2 per cent from 1920 to 1930 and increased 1 per cent from 1930 to 1940.

By 1940, the value of land per acre was only 29 per cent above 1900, while the increase in value per acre for livestock was 107 per cent, buildings 296 per cent, and implements and machinery 416 per cent.

In 1900, land accounted for 71 per cent of the combined value per acre of all property (table 2). Buildings accounted for 14 per cent of the total, implements and machinery 4 per cent, and livestock 11 per cent. At the peak of the boom in 1920, nearly 73 per cent of the total value was due to the value of land, with over 14 per cent due

Table 1. Value per Acre of Land, Buildings, Implements and Machinery, and Livestock in Minnesota by Decades, 1900-1940*

Kind of property	Value per acre				
	1900	1910	1920	1930	1940
Land	\$21.31	\$36.82	\$ 91.00	\$47.03	\$27.52
Buildings	4.20	8.79	18.23	21.71	16.73
Land and buildings	\$25.51	\$45.61	\$109.23	\$67.74	\$44.25
Implements and machinery	1.15	1.89	5.99	5.88	5.93
Livestock	3.39	5.84	10.10	9.33	7.02
All property	\$30.05	\$53.34	\$125.32	\$83.95	\$57.20

* Adapted from census data.

Table 2. Per Cent Distribution of Value per Acre of Land, Buildings, Implements and Machinery, and Livestock in Minnesota by Decades, 1900-1940*

Kind of property	Per cent distribution				
	1900	1910	1920	1930	1940
Land	70.9	69.0	72.6	56.0	48.2
Buildings	14.0	16.5	14.5	25.9	29.2
Land and buildings	84.9	85.5	87.1	81.9	77.4
Implements and machinery	3.8	3.6	4.8	7.0	10.3
Livestock	11.3	10.9	8.1	11.1	12.3
All property	100.0	100.0	100.0	100.0	100.0

* Adapted from census data.

to buildings, 5 per cent to implements and machinery, and only 8 per cent to livestock.

During the next 20 years the proportion of total property value per acre due to the land declined from nearly 73 per cent in 1920 to 48 per cent in 1940. The proportion due to buildings increased from over 14 to 29 per cent, implements and machinery from 5 to over 10 per cent, and livestock from 8 to over 12 per cent.

Land accounted for a smaller proportion of the combined value of land and buildings in Minnesota in 1940 than at any previous census period. In 1900, nearly 84 per cent of the total real estate value per acre was due to the land and only a little over 16 per cent to the buildings. The proportions were about the same in 1920, land over 83 per cent and buildings less than 17 per cent. But by 1930, land accounted for only 68 per cent of the total and buildings 32 per cent, and by 1940 the proportion due to land had declined to 62 per cent and that to buildings had increased to 38 per cent.

Factors Affecting Trends

The trends in the values per acre of the different kinds of farm property were the result of many different forces. In general, agriculture was relatively prosperous from 1900 to 1916 and experienced a decided boom from 1917 to 1920. The long-continued price rise which culminated in the boom tended to lift prices of most kinds of farm property. On the other hand, prices of most farm products and the relationships between prices of agricultural and nonagricultural products were relatively unfavorable to agriculture much of the time from 1920 to 1940. This tended to reduce the value per acre of most kinds of farm property. However, these relationships do not explain the variations in the trends for the different kinds of property. Clearly, other fundamental economic forces also were at work.

The value per acre of livestock was influenced greatly by the shift from grain farming to mixed farming and from horsepower to mechanical power. At the turn of the century, Minnesota ranked first among the wheat-producing states of the union. By 1940, this state had become one of the leading dairy, hog, and poultry producing states, and also produced and fattened for market large numbers of beef cattle and sheep and lambs. These developments tended to increase the value per acre of livestock. On the other hand, a fairly pronounced shift from horsepower to mechanical power took place from 1910 to 1920, particularly during the boom, and continued thereafter. The de-

cline in number of horses and mules, however, did not set in until about 1920. The subsequent decline both in numbers and in value per head tended to offset somewhat the increase in other livestock accompanying the shift from cash crop to livestock farming. The value of livestock as reported for different census years also was influenced by cyclical variations in numbers and prices of the different species and probably to some extent by variations in the dates on which the different censuses were taken.

The shift to mechanical power from 1910 to 1920 consisted largely of the use of automobiles and trucks in place of horses, buggies, and wagons, and of tractors instead of horses to pull the available horse-drawn machinery. The shift to mechanical power continued during the 1920's and 1930's but with much greater emphasis than formerly on the use of machinery adapted to mechanical power rather than to horses. These developments led to a sharp increase in the investment in implements and machinery over horse and buggy days.

Building values as reported in the census are based largely upon the estimated replacement value, new minus depreciation. The increase in value per acre from 1900 to 1910 was due partly to an increase in building costs but more particularly to the erection of new buildings. The increase from 1910 to 1920 was due partly to the erection of new buildings but more particularly to sharply rising building material and labor costs. Farm building construction was at a relatively low level during most of the 1920's and 1930's, so that the higher value per acre of buildings in 1930 than at the peak of the boom and the fairly modest decline from 1930 to 1940 were a reflection of higher replacement costs rather than an improvement in the physical plant.

Land Declined in Value, 1920-1940

The sharp rise in the value per acre of farm land from 1900 to 1920 was due largely to rising farm incomes, while the rise in building values per acre was due both to improvement in the physical plant and to rising building material and labor costs. The severe decline in the value of land from 1920 to 1940, which was accompanied by a relatively slight decline in the value of buildings, was a result of low farm income during a period of relatively high building material and labor costs. This reflects the general tendency for the value of land to fluctuate more violently with changing farm income than the value of farm buildings. Building replacement costs tend to be relatively stable while land values are affected more directly by changes in net farm income.

The Feed Situation

S. A. ENGEL

The supply of feed grains and concentrates in the United States will be sufficient during the coming year. The expected production of corn, oats, barley, and sorghum grains in 1945 is about 10 per cent less than in 1944. By using the feed reserves accumulated during the past year, the quantity of feed grains available per animal

Table 1. Feed Grain Production and Requirements in Minnesota

Crop	Average 1936-41	1942-43	1943-44	1944-45*	1945-46*
PRODUCTION MINUS SEED			1,000 tons		
Corn (for grain).....	3,529	4,890	5,122	6,003	5,114
Oats	2,180	2,649	2,065	2,276	3,723
Barley	1,081	1,112	480	303	289
QUANTITY FED					
Wheat	156	138	140	125†	120†
Rye	54	34	35	11†	10†
Total available	7,000	8,823	7,842	8,718	9,256
Needed for livestock	5,234	7,696	7,371	6,319	7,117
Available for other uses.....	1,766	1,127	471	2,399	2,139
Sales off farms	1,546	1,482	1,071	1,817	?
Changes in feed reserves.....	+220	-355	-600	+582	?

* September 1 crop estimates.

† Estimates of probable feed.

unit will be equal to the average of the past few years. The present livestock can be adequately fed, but there is not enough feed to permit material increases in the number of livestock or in marketing weights.

The feed grain situation in Minnesota is better than for the rest of the nation. The total production of all feed grains may be the largest on record. It may be slightly larger than the production in 1942 and 1944 and about one-quarter larger than in the prewar years. The production and utilization of feed grains for a period of years are summarized in the accompanying table. The probable production of corn is less than that of 1944, approximately equal to the production of 1942 and 1943, and considerably higher than during prewar years. The production of oats in 1945 is the largest on record. With a very small acreage, the production of barley is small.

Forecasts Indicate Soft Corn Crop

The value of the feed grains in the state will depend partly upon the maturity of the corn crop. At the time of writing, September 11, only a limited amount of corn has passed the roasting-ear stage, and a considerable proportion has not reached it. Unless the first killing frost is late, much of the corn will be soft. According to weather bureau records, the average date of the first killing frost in the southern third of the state occurs during the last days of September. The first killing frost has occurred after October 1 in four years out of ten, and after October 15 in one year out of ten.

The supply of mill feeds and high protein feeds will be approximately the same as last year, and the supply of roughages for the nation will be somewhat better. In Minnesota the supply will be adequate for the coming feeding season if care is used in feeding. The production of tame and wild hay in 1945 was estimated on September 1 as being 6,168 thousand tons compared with 6,172 thousand tons in 1944. The carry over this last spring was slightly larger than a year ago. With a probability that late-planted corn fields may not mature, the production of silage and fodder will likely be higher than normal this fall. With a small reduction in roughage-consuming livestock, the supply of roughage per head should be slightly larger than last year. If the winter is long and cold, however, some farmers may encounter difficulties.

Feeder Lamb Costs and Returns

TRUMAN R. NODLAND

The feeding of western lambs is a relatively important enterprise on many farms in Minnesota. The records of the cooperators in the farm management services in the state are an excellent source of information concerning feeder lamb cost and returns and the management practices followed.

The data presented are on a lot basis beginning with the time of purchase and continuing until the lambs are sold. The records cover four feeding periods during the years 1940 to 1944. The number of head bought, length of feeding period, death loss, gain in weight, and the feed necessary to produce 100 pounds gain in weight are shown in table 1. Corn and legume hay were the principal feeds utilized. Eighty-one per cent of the concentrates consumed was corn, 17 per cent small grain, and 2 per cent purchased commercial feeds. Some lots, purchased in the summer, received a considerable amount of feed from pasture; the average number of days on pasture for all lots was 39. Silage was used by approximately one third of these lamb feeders.

Table 1. Size of Flock, Production, and Feeds Consumed

	1940- 1941	1941- 1942	1942- 1943	1943- 1944	Average
Number of lots	17	16	9	12	14
Number of head bought.....	349	554	554	507	491
Number of days on farm.....	122	122	121	128	123
Percentage death loss.....	4.9	4.3	5.1	3.8	4.5
Weight per head bought, lbs.	68	70	68	72	69
Weight per head sold, lbs.	92	93	93	99	94
Gain per head, lbs.....	24	23	25	27	25
Gain per head per day, lbs.20	.19	.21	.21	.20
Total lbs. produced per lot....	6,378	10,372	11,005	11,801	9,889
Feed per cwt. produced:					
Concentrates	758	732	726	563	695
Hay and fodder	322	337	386	357	351
Silage	82	503	125	129	210
Pasture days	227	141	237	307	228
Total digestible nutrients*	769	828	812	661	768
Percentage protein in T.D.N.	12.0	11.3	12.6	11.8	11.9

* Not including nutrients received from pasture.

The return above feed cost, the return for \$100 of feed, and the prices received and paid for lambs are shown in table 2. The net increase in value is determined by deducting the cost of the lambs from the receipts. Feed has been charged at the average farm price in southern Minnesota for the feeding period covered. The return above feed cost represents the amount available to pay for labor, shelter, risk, interest, and similar costs, and to pay the farmer for his labor and management.

Table 2. Feeder Lamb Costs and Returns per 100 Pounds

	1940- 1941	1941- 1942	1942- 1943	1943- 1944	Average
Net increase in value.....	\$ 12.53	\$ 15.12	\$ 24.52	\$ 19.30	\$ 17.87
Feed cost	8.30	10.31	12.08	13.65	11.09
Return above feed cost.....	\$ 4.23	\$ 4.81	\$ 12.44	\$ 5.65	\$ 6.78
Return per \$100 of feed....	151	147	203	141	161
Purchase price	8.59	10.71	12.83	13.50	11.41
Sale price	9.51	11.65	15.43	14.75	12.84
Price spread92	.94	2.60	1.25	1.43

Minnesota Farm Prices For August, 1945

Prepared by W. C. WAITE and R. W. COX

The index number of Minnesota farm prices for August, 1945, is 183. This index expresses the average of the increases and decreases in farm product prices in August, 1945, 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, 1945, with Comparisons*

	Aug. 15, 1945	July 15, 1945	Aug. 15, 1944		Aug. 15, 1945	July 15, 1945	Aug. 15, 1944
Wheat	\$1.52	\$1.54	\$1.38	Hogs	\$14.00	\$14.00	\$13.30
Corn	1.01	1.00	1.02	Cattle	12.00	12.90	11.50
Oats	.52	.62	.64	Calves	13.70	13.80	13.10
Barley	1.03	1.02	1.05	Lambs-Sheep	12.77	13.03	11.95
Rye	1.32	1.32	.98	Chickens	.25	.25	.21
Flax	2.91	2.91	2.89	Eggs	.38	.35	.31
Potatoes	1.80	2.00	1.25	Butterfat	.53	.53	.53
Hay	8.20	8.90	8.60	Milk	2.65	2.65	2.75
				Wool†	.47	.45	.43

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

† Not included in the price index number.

Minnesota farm prices of oats, potatoes, and hay declined from July 15 to August 15. With the exception of hogs, the prices of livestock were also lower. Among the livestock products, egg prices alone changed, advancing a few cents. The Minnesota farm price index is 5.8 points higher than one year ago. Each of the respective indexes representing the various classifications of farm products show a significant increase over the corresponding period of last year.

The feed ratios are all higher than in August, 1944. The largest increases occurred in the egg-grain and butterfat-farm-grain ratios. If the subsidy payment of 13 cents per pound of butterfat is added to the price received for this product, the butterfat-farm-grain ratio would be raised to 36.6 or about 3 points higher than the 1935-39 average for August.

Indexes and Ratios for Minnesota Agriculture*

	Aug. 15, 1945	Aug. 15, 1944	Aug. 15, 1943	Average 1935-39
U. S. farm price index	193.2	182.8	181.8	100
Minnesota farm price index	183.2	177.4	172.7	100
Minn. crop price index	190.9	187.7	172.0	100
Minn. livestock price index	164.9	157.2	163.7	100
Minn. livestock product price index	187.1	178.3	182.2	100
U. S. purchasing power of farm products	134.2	129.8	134.5	100
Minn. purchasing power of farm products	127.2	126.0	127.7	100
Minn. farmers' share of consumers' food dollar	66.6†	61.5	64.5	48.4
U. S. hog-corn ratio	12.4	11.5	12.6	12.3
Minnesota hog-corn ratio	13.9	13.0	14.1	14.6
Minnesota beef-corn ratio	11.9	11.3	13.1	12.0
Minnesota egg-grain ratio	18.5	14.8	19.3	15.9
Minnesota butterfat-farm-grain ratio	29.4	26.5	28.5	33.5

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

† Figure for May, 1945.

Minnesota Farm Prices Following World War I

Following World War I, the index of Minnesota farm prices was higher than at the close of the war for over a year and a half. This was followed by a drastic decline in 1920-21. In April of 1920 the index was 18 per cent above November, 1918, while in December, 1921, it was less than half as high. Data at important dates for several commodities are given in the table below:

Minnesota Farm Prices Following World War I

	Nov. 1918 price	Postwar peak	Nov. 1919 price	Nov. 1920 price	1920-1921 low
Wheat	\$ 2.05	\$ 2.70 May 1920	\$ 2.38	\$ 1.54	\$0.96 Dec. 1921
Corn	1.12	1.40 July 1920	1.16	.60	.29 Nov. 1921
Oats	.60	.95 July 1920	.62	.39	.21 Nov. 1921
Flax	3.40	5.18 Aug. 1919	4.18	2.14	1.40 Apr. 1921
Hogs	16.30	20.10 July 1919	13.10	11.60	5.90 Nov. 1921
Beef cattle	7.90	10.30 May 1919	7.50	5.70	3.90 Nov. 1921
Eggs	.46	.68 Dec. 1919	.57	.58	.17 May 1921
Butterfat	.63	.72 Dec. 1919	.71	.57	.28 June 1921

Livestock prices declined in the fall of 1919 while crop prices remained high until the marketings of the 1920 crop began, and dairy and poultry prices were sustained until the fall of 1920.

The index of the cost of items bought by farmers was not computed on a monthly basis during this period. In consequence, comparison with agricultural prices can be made only on the basis of annual averages. Following the war, the cost of items bought by farmers rose more than Minnesota agricultural prices, and they fell less during the price decline of 1920-21. The data are given in table below.

Indexes of Minnesota Farm Prices and Items Bought by Farmers (1918 = 100)

Year	Index of Minnesota farm prices	Index of items bought by farmers
1918	100	100
1919	106	114
1920	93	111
1921	56	86

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