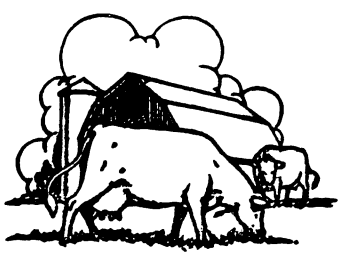
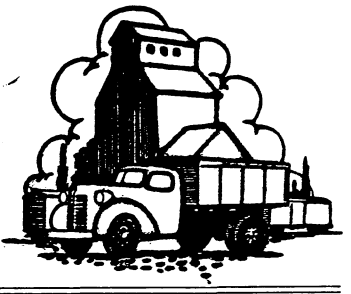


MINNESOTA farm business NOTES



NO. 385 ST. PAUL CAMPUS, UNIVERSITY OF MINNESOTA JULY 29, 1957

Farmers Have Changed Their Cropping Systems

S. A. Engene and F. T. Hady*

Minnesota farmers have made big changes in their cropping systems since 1920 (see table 1). They have increased corn acreage by almost one-third. Most of this increase has been in the corn belt counties. To some extent it is due to a northward movement.

One of the most spectacular changes has been the introduction and rapid increase in soybeans. Most of the soybeans are raised in the southern part of the state, with the heaviest concentration along a line from Blue Earth to Mankato to Montevideo. With development of new varieties this crop also is spreading northward.

Potato acreage has fallen very sharply. In the 1920's, potatoes were of commercial importance in most parts of the state. Now almost two-thirds of the potato crop is in the Red River Valley.

Farmers in all parts of the state except the southwest corner have increased the acreage of oats. However, the change has not been large.

Barley acreage has been up and down. It now is near the level of the 1920's. Many farmers have substituted barley for wheat in the northern part of the Red River Valley. Farmers in the west central counties have held their acreage about steady. In other areas, farmers have almost eliminated the crop.

Wheat acreage also has gone down sharply. Farmers in most sections of the state used to raise some wheat; now it is important only in the Red River Valley.

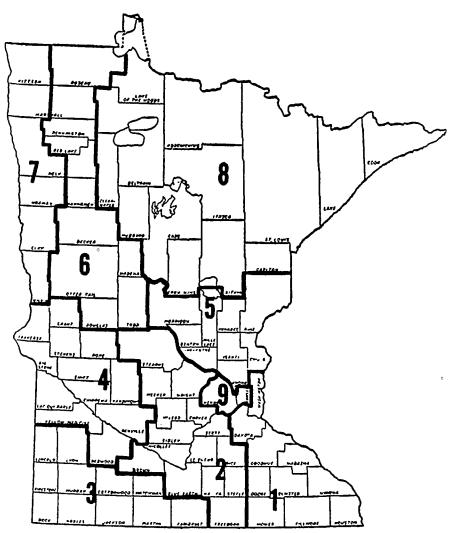
The trend in flax production has been upward. Most flax is grown in the western half of the state.

Rye has almost disappeared. It now is grown mostly on sandy land—especially in the east-central part of the state.

Hay acreage rose slowly until about 1940, and has fallen somewhat since that time. It has held steady or increased slightly north of a line drawn from the southeast to the northwest corner of the state. It has fallen by about one-fourth south of that line.

This shift in crops has meant a change in cropping patterns within the different sections of the state. This is shown in tables 2 through 9. The location of the various areas is shown on the map.

The acreage of corn in Area 1 (southeast Minnesota) has increased; it is now one-third of all crops harvested. Adding soybeans brings intertilled crops to more than 40 percent of the harvested crops. Small grains other than oats have almost disappeared. The changes in Area 2 (south central) have been nearly



* Agricultural Research Service, U. S. Department of Agriculture.

Table 1. Acres of Crops Harvested—Minnesota*

Period	Corn	Soybeans	Potatoes	Oats	Barley	Spring wheat	Winter wheat	Flax	Rye	All hay	Total
					(1,000 acres)						
1921-24	4,173	†	414	4,249	932	1,871	108	466	837	4,112	17,162
1925-29	4,199	†	314	4,413	1,613	1,615	157	712	418	4,216	17,657
1930-34	4,796	†	350	4,280	1,826	1,253	148	719	364	4,298	18,034
1935-39	4,591	47	264	4,198	2,100	1,798	199	705	495	4,344	18,694
1940-44	4,925	182	215	4,283	1,443	1,158	148	1,411	216	4,362	18,343
1945-49	5,488	707	131	5,015	887	1,107	92	1,323	160	3,903	18,813
1950-54	5,399	1,349	78	5,125	1,187	914	59	1,111	140	3,805	19,158
1955	5,815	2,286	81	4,828	1,175	601	33	843	115	3,900	19,677
1956	5,734	2,697	85	4,297	975	690	37	995	99	3,848	19,457

* Source: Minnesota Agricultural Statistics, State-Federal Crop and Livestock Reporting Service.
† Not available.

Table 2. Crops Harvested—Area 1

Crop	1921-24	1950-54
	(1,000 acres)	
Corn	524	669
Soybeans	0	164
Oats	541	619
Other small grains	405	80
Hay	497	533
Total	1,967	2,065

Table 3. Crops Harvested—Area 2

Crop	1921-24	1950-54
	(1,000 acres)	
Corn	916	1,231
Soybeans	0	354
Oats	628	1,014
Other small grains	762	188
Hay	853	665
Total	3,159	3,452

Table 4. Crops Harvested—Area 3

Crop	1921-24	1950-54
	(1,000 acres)	
Corn	1,178	1,405
Soybeans	0	326
Oats	1,057	970
Other small grains	246	304
Hay	476	332
Total	2,957	3,337

(Continued on pages 2 and 3)

Grass-Legume Seed Marketing Channels

Harold C. Pederson

Farmers, Agricultural program leaders, and the seed trade all share interest in the marketing of grass and small-seeded legumes. This interest has increased with the recent developments in the Soil Bank program in agriculture.

Furthermore, there has been a rather steady increase in the production and use of grass and small-seeded legume seed during the past 50 years. This is due partially to improved farm practices and more emphasis on both grassland farming and soil conservation. Such trends suggest the wide-spread importance of these seeds, even though they do not loom large in cash farm receipts or farm production expenses.

The North Central states figure heavily in the production and use of grass and small-seeded legume seed. The Marketing Research Report No. 158 by the USDA, AMS, Marketing Research Division titled "Seed Marketing Channels" summarizes a study conducted on such seeds.

This 11-state area produces more than one-third of the principal seeds in question and consumes a major share also. It has about 36 percent of the known wholesale producers handling these seeds.

Grass seed, as defined in this report, includes: (1) the principal grass seeds (timothy, Kentucky bluegrass, rye grass, orchard grass, bromegrass, Sudangrass, and tall fescue) as well as redtop and other fescues which accounted for more than four-fifths of the total grass seed covered in this study, and (2) the main small-seeded legume seeds handled including alfalfa, red clover, alsike clover, sweetclover, Ladino clover, white clover, and lespedeza.

This report describes: (1) the marketing channels and methods used by wholesalers in handling certified and noncertified seeds of different grasses and small-seeded legumes, and (2) the functions of and services rendered by wholesale dealers of these seeds.

Unlike most farm crops, the seeds under consideration are both produced and consumed by farmers. Furthermore, these seed crops encountered a large degree of instability in the production phase. A large share of the crop is not even planned. The weather, availability of harvesting equipment, and other factors influence the producers in deciding whether or not the crop will be used for hay, pasture, or seed. In other instances, the soil-building characteristics are given first consideration.

In recent years, the annual farm value of this group of grass and small-seeded legume seed in Minnesota amounted to around a tenth of the total farm value of these seeds reported for the United States with red clover seed leading the list in importance.

The local country seedsmen sell back to the farmers in the same or other rural areas. No data are available on the volume of seed moving between farmers or on the quantity bought, sold, or traded by country elevators, farm implement dealers, and others.

However, local trading in these seeds seems to have been minimized in recent years. The reasons given are: (1) increased use of specialized production areas, and (2) rising importance of certified seed. This means farmers have become more dependent on commercial seed dealers.

Wholesale seed dealers depend upon the farmers for their seed supply and their markets. These dealers first assemble seeds from producing areas, then select, test, blend, process, and distribute the seeds into consumer channels in compliance with both state and federal laws. Directing this flow is an important function.

More specific observations noted from this study included:

- Almost half of the grass and small-seeded legume seed purchased by wholesale dealers in the North Central states was obtained from country buyers, shippers, and assemblers. Other wholesale dealers supplied nearly a third, while one-fifth came directly from producers.
- Nearly all wholesalers clean these seeds. Many firms reclean seeds already cleaned. About four-fifths of the alfalfa and clover seed was packaged in bushel containers.
- Of the total of these small seeds handled by wholesalers in 1954-55, about 60 percent were legumes sold mostly to retailers. By contrast, other wholesalers were the largest receivers of the grass seeds.
- Most of the small-seeded legume seeds handled by wholesale dealers in the North Central states went to purchasers in these same states. Substantial amounts of grass seeds went to the Northeast, Southeast, and Great Plains regions.
- The volume of certified seed has increased in recent years causing more merchandising problems.

MINNESOTA
farm business
NOTES

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Farmers—

(Continued from page 1)

Table 5. Crops Harvested—Area 4

Crop	1921-24	1950-54
	(1,000 acres)	
Corn	964	1,284
Soybeans	0	431
Oats	922	979
Barley	211	255
Flax	147	363
Wheat	541	129
Rye	106	16
Hay	603	392
Total	3,494	3,849

Table 6. Crops Harvested—Area 5

Crop	1921-24	1950-54
	(1,000 acres)	
Corn	157	244
Soybeans	0	36
Potatoes	83	4
Oats	174	253
Rye	84	66
Other small grains	52	14
Hay	357	373
Total	907	990

Table 7. Crops Harvested—Area 6

Crop	1921-24	1950-54
	(1,000 acres)	
Corn	214	324
Potatoes	71	6
Oats	345	650
Barley	132	167
Flax	51	177
Wheat	212	137
Rye	139	13
Hay	522	611
Total	1,686	2,085

Table 8. Crops Harvested—Area 7

Crop	1921-24	1950-54
	(1,000 acres)	
Corn	143	151
Soybeans	0	28
Potatoes	138	44
Oats	468	480
Barley	189	534
Flax	98	284
Wheat	599	594
Rye	170	11
Hay	420	391
Total	2,225	2,517

Table 9. Crops Harvested—Area 8

Crop	1921-24	1950-54
	(1,000 acres)	
Corn	41	51
Potatoes	35	8
Oats	91	133
Other small grains	49	66
Hay	324	468
Total	540	726

similar. Here, however, the acreage of hay has been decreased.

With the introduction of soybeans, farmers in Area 3 (southwest) have increased the proportion of intertilled crops from 40 percent of cropland harvested to 52 percent. They, too, have cut the acreage of hay; they now have only one-tenth of the cropland in hay. They never have raised much small grains other than oats; but they have increased the acreage of flax slightly.

Farmers in Area 4 (west central) also have increased the acreage of corn and soybeans and have reduced hay. They have cut the acreage of wheat very sharply and have practically eliminated rye.

In Area 5 (east central) intertilled crops are less important. However, the corn acreage is increasing rapidly. Soybeans are coming into the area. Potatoes were important, but farmers have almost eliminated this crop.

The changes in Area 6 (north central) have been quite similar to Area 5. Small grains are important here, and farmers have increased the acreage of oats, barley, and flax.

Corn and soybeans are not very important in Area 7 (Red River Valley); however, the acreage has increased slightly. These farmers have cut the acreage of potatoes, although they now raise more than one-half of the potatoes in the state. They have increased barley and flax very sharply.

Farmers in Area 8 (northeast) have not changed their cropping systems greatly. Hay has continued to be the most important crop, with oats second. Potatoes were an important cash crop; but the acreage has been cut sharply.

S. Minn. Saw Higher Farm Income in 1956

T. R. Nodland and G. A. Pond

The average net cash income of farmers in the Southeastern Minnesota Farm Management Association was 6 percent higher in 1956 than 1955 and 26 percent higher than the five-year average, 1950-54 (see table 1). The corresponding increase for the Southwestern Minnesota Farm Management Association was 11 percent over 1955 and 11 percent over the 1950-54 average.

The farms in these associations were somewhat larger than the average of the area. However, they represent the same general type of farming and reflect the effect of changes in crop yields, prices, and other factors affecting the financial returns in farming during the period.

In the Southeastern Association, the net cash income in 1956 exceeded that for any year from 1950 through 1955. In the Southwestern Association, 1953 was the only year in which the net cash income exceeded that of 1956.

Table 1. Cash Receipts, Expenses, and Net Cash Income on Farms in Southern Minnesota, 1955 and 1956

	Southeastern Minnesota			Southwestern Minnesota		
	Average 1950-54	1955	1956	Average 1950-54	1955	1956
Number of farms	162	165	165	138	146	135
Acres per farm	225	226	231	265	272	284
Farm receipts						
Dairy products	$4,702	$5,145	$5,934	$1,085	$1,091	$1,324
Cattle	2,981	2,688	2,781	8,613	8,002	11,033
Hogs	4,253	3,525	3,717	7,455	6,147	5,797
Sheep and wool	171	327	237	978	798	1,344
Poultry and eggs	1,652	1,699	1,473	1,491	1,504	1,798
Crop sales	2,115	3,274	3,772	4,114	6,467	6,061
Miscellaneous	878	810	984	925	881	933
Total farm receipts	$16,752	$17,468	$18,898	$24,661	$24,890	$28,290
Farm expenses						
Cattle bought	902	750	947	4,312	3,963	5,702
Other livestock purchases	393	439	386	1,237	1,048	1,423
Miscellaneous livestock expense	360	433	476	378	424	468
Feed bought	2,242	2,348	2,491	4,323	4,498	5,291
Crop expenses	1,009	1,344	1,280	1,234	1,690	1,539
Custom work hired	552	649	688	439	587	646
New power and machinery	2,005	1,482	1,974	2,034	1,762	1,634
Power and mach. upkeep, gas and oil	1,609	1,821	1,908	1,869	2,054	2,183
Buildings new and upkeep	1,351	1,010	1,112	1,193	1,058	872
Hired labor	856	828	878	883	895	863
Personal property and real estate taxes	632	716	787	622	724	804
Miscellaneous	239	274	296	260	327	358
Total farm expenses	$12,150	$12,094	$13,223	$18,784	$19,030	$21,783
Net cash income	4,602	5,374	5,675	5,877	5,860	6,507

Table 2. Percentage Changes in 1956 from the Averages for 1950-55

	S. E. Ass'n.	S. W. Ass'n.
	percent	
Size of business		
Acres per farm	3.0	7.0
Milk cows per farm	9.5	7.0
Lbs. hogs per farm	10.5	2.0
Lbs. feeder cattle per farm	35.5	17.5
Hens per farm	5.6	19.4
Crop yields per acre		
Corn, bushels	28.6	24.4
Soybeans, bushels	29.7	11.6
Alfalfa, tons	5.5	8.0
Production per animal		
Butterfat per cow	10.0	4.9
Eggs per hen	3.6	10.5
Feeding efficiency		
Lbs. feed per 100 lbs. hogs	—7.0*	—17.0*
Lbs. feed per doz. eggs	—9.0*	—11.5*

* Minus sign indicates decrease.

The higher net income in 1956 was achieved in spite of lower prices for most products sold by these farmers. Corn prices were 4 percent lower than for the average of the previous 6 years and soybean prices were 10 percent lower. Milk prices were about the same as the average of the previous six years. Both fat cattle and hogs were 24 percent lower in price, and these are important sources of income on these farms. Egg prices averaged 11 percent lower in 1956.

Among the factors accounting for the increased net income in 1956 in the face of falling prices for most of the sale products were: (1) an increase in size of business as indicated by a small increase in acres per farm and in numbers or production of livestock, (2) an increase in crop yields due in part to more favorable weather and to increased fertilizer applications, (3) an increase in production per head of livestock, and (4) an increase in feeding efficiency (see table 2).

Minnesota Farm Prices, May and June, 1957

Prepared by R. A. Andrews

Average Farm Prices for Minnesota, May 1957, June 1955, 1956, 1957*

	May 1957	June 1957	June 1956	June 1955
Wheat	$ 2.01	$ 2.01	$ 2.11	$ 2.26
Corn	1.10	1.10	1.33	1.33
Oats	.64	.62	.57	.66
Barley	.91	.86	.94	1.03
Rye	.97	1.00	.96	1.02
Flax	2.84	2.77	3.16	3.05
Potatoes	.39	.39	.....	1.30
Hay	15.60	15.40	16.10	16.40
Soybeans†	2.12	2.09	2.82	2.22
Hogs	17.00	17.60	15.00	17.50
Cattle	17.80	18.20	16.00	17.60
Calves	20.00	20.60	18.30	18.00
Sheep-lambs	19.26	19.14	19.32	18.18
Chickens	.103	.101	.151	.168
Eggs	.220	.230	.310	.280
Butterfat	.630	.630	.630	.620
Milk	3.10	3.10	3.15	2.90
Wool†	.51	.53	.41	.41

* Average prices as reported by the USDA.
† Not included in Minnesota farm price indexes.

Wheat, corn, and soybean prices reached their lowest June levels since 1949. The June crop price index fell 20.5 points, or 9 percent, from a year ago to reach the lowest June level since 1944.

The livestock price index increased 15 percent from a year ago. The beef-corn ratio reached its highest point for any month since December 1952.

Comparison of May and June Prices

Commodity class	Average June prices as a percentage of average May prices
Crops	99
Livestock	103
Livestock products	101
All commodities	101

Indexes for Minnesota Agriculture*

	Average June 1935-39	June 1957	June 1956	June 1955
U. S. farm price index	100	228.5	234.3	230.6
Minnesota farm price index	100	215.3	211.0	218.6
Minnesota crop price index	100	199.8	220.3	231.2
Minnesota livestock price index	100	235.0	204.1	228.6
Minnesota livestock products price index	100	202.8	214.4	206.9
Purchasing power of farm products				
United States	100	96.9	102.8	102.5
Minnesota	100	91.4	92.5	97.1
U. S. hog-corn ratio	12.0	15.1	11.0	13.1
Minnesota hog-corn ratio	15.2	16.0	11.3	13.2
Minnesota beef-corn ratio	12.8	16.5	12.0	13.2
Minnesota egg-grain ratio	14.6	9.1	11.4	9.8
Minnesota butterfat-farm-grain ratio	30.9	33.0	31.9	28.7

* Minnesota index weights are the average of sales of the five corresponding months of 1935-39. U. S. index weights are the average sales for 60 months of 1935-39.

The Outlook Corner — Farm Wage Rates

Farmers' production cost rates, in general, have more than doubled since 1940 (table 1). However, some have increased more than others. Farm wage rates, for example, have risen by more than 300 percent, whereas prices of fertilizer and gasoline have advanced 53 and 64 percent, respectively. The cost of electricity per kilowatt-hour has declined about 25 percent since 1940.

Farm wage rates vary by regions too. As of April 1, they were highest in the Pacific region, lowest in East South Central region. The North Central region compared favorably with the average farm wage rates for the entire country.

Compared with a year ago, farm wages increased three times as much in the New England area as in the Pacific area. The North Central region increase was about the same as the average increase for the entire United States, or in some instances slightly below depending upon the location within the region.

Competition from nonfarm employers is a big factor in differences in farm wage rates between regions. Early this year, earnings of factory workers in the United States averaged $2.05 an hour or 6.2 percent higher than a year ago.

Wage rates in industry have increased more than farm wage rates during the last year and also over a longer period. In 1956, wage rates of production workers in manufacturing establishments were about 50 percent higher than in 1947-49, whereas farm wage rates rose about 25 percent.

Current short supply of experienced regular farm workers continues and is characteristic of the past several years. However, the need for farm labor will be less this year due mostly to a reduction in crop acreages by cotton and tobacco producers. Labor needs for other crops in other areas, however, will not decrease much.

If one assumes employment levels as a whole to remain high the farm wage rate index won't reverse its trend in the near future. In the meantime, laborsaving practices and opportunities to make labor more productive by adopting improved crop and livestock production practices will probably continue at an accelerated rate.

Table 1. Index Numbers on the Prices of Goods and Services Used in Farm Production, United States. (1947-49 = 100)*

Year(s) or period	Commodities interest, taxes, and wage rates	Commodities only	Wage rates
1940	49	52	30
1940-44	61	62	49
1945-49	92	91	95
1950	104	104	99
1951	115	115	109
1952	117	116	117
1953	112	106	119
1954	112	106	119
1955	112	105	120
1956	114	105	125
1957 (Apr.)	119	110	131

* Farm Cost Situation, AMS, May 1957

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