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AGRICULTURAL EXTENSION DIVISION
UNIVERSITY OF MINNESOTA

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MINNESOTA FARM BUSINESS NOTES

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Prepared by the Division of Agricultural Economics
University Farm, St. Paul, Minnesota

THE EFFECT OF THE DROUTH ON FARM INCOME, CROP YIELDS, AND
FARM ORGANIZATION AND PRACTICE

Prepared by G. A. Sallee and G. A. Pond

Some effects of the drouth in west central Minnesota during the past four years are indicated in the records of a group of farms in Stevens County. Annual rain fall in this county for the past four years has ranged from 17 to 35 per cent below normal. During the growing season the deficit has ranged from 21 to 43 per cent. The accumulated deficiency during the four years exceeds one year's normal precipitation. High temperatures accentuated the effect of the drouth. The mean temperature during the growing season averaged three degrees above normal for the four-year period. The mean monthly temperatures were above normal all but two months during this period.

The most obvious effect of the drouth was the reduction in crop yields. The amount of this reduction is shown in Table 1. Grain production was reduced

Table 1

Year	Production of Crops in Pounds per Acre					
	Grain	% decrease from 1932	Rough- age	% decrease from 1932	Total	% decrease from 1932
1932	885	-	558	-	1443	-
1933	157	82	448	20	605	58
1934	43	95	335	40	378	74

very sharply in 1933 and practically wiped out in 1934. Roughage production declined less, relatively. This was largely due to the fact that crops seeded for grain were harvested for roughage. In 1932 crops were usually harvested for the purpose for which they were planted. In 1933 and especially in 1934 drouth damage resulted in an abnormal utilization of crops. This is shown in Table 2. Nearly

Table 2

Crop	Percentage Utilization of Crops Seeded for Grain							
	Cut for Grain		Cut for Hay		Pastured		Abandoned	
	1933	1934	1933	1934	1933	1934	1933	1934
Wheat	64	24	3	13	-	6	33	58
Oats	62	23	17	31	3	13	18	33
Barley	73	25	2	13	4	12	21	50
Flax	87	42	-	8	1	2	12	48

half of the small grain acreage was entirely abandoned in 1934. Hay crops were similarly affected but in a less degree. Only 55 per cent of the alfalfa acreage was cut for hay in 1934, 11 per cent was pastured and the balance was a complete

failure. Because of the acute feed shortage, crops were harvested that ordinarily would have been completely abandoned. Hence the damage is more severe than these figures indicate.

Because of the feed shortages, curtailment of livestock production was necessary. In spite of increased feed purchases both numbers of livestock and livestock rations were cut sharply. The decrease in the number of each class of livestock is shown in Table 3. This decrease would have been even greater had not relief agencies supplied feed in return for work. The cattle-buying program served to lessen the losses that would have occurred had the surplus cattle been thrown on the public market. The reduction in hogs largely reflected the shortage of concentrate feeds. All of these farmers signed corn-hog contracts but the drouth compelled a cut in production in excess of contract requirements.

Table 3

Average Numbers of Livestock on Hand March 1, 1932-1935							
Year	Cows	Other cattle	Total cattle	Hogs	Sheep	Chickens	Turkeys
1932	16.2	23.1	39.3	32.8	21.4	134	20
1933	16.9	24.4	41.3	29.4	17.7	154	23
1934	15.8	21.2	37.0	13.6	20.1	143	16
1935	12.6	13.6	26.2	10.4	16.9	125	12
% reduction 1932 to 1935	22	41	33	68	21	7	40

In addition to reducing numbers of livestock, the rations were also reduced, especially the concentrate ration. This is shown in Table 4. The reduction was actually greater than these figures indicate since much less feed was obtained from pasture than is normally the case and the roughage used in 1933 and 1934 was of much poorer quality than that used in 1932.

Table 4

Class of livestock	Pounds of Feed Used per Animal Unit, 1932-1934					
	1932		1933		1934	
	Grain	Roughage	Grain	Roughage	Grain	Roughage
Work horses	3314	4310	2188	4215	1333	4778
Cattle - Dairy	2271	5107	1622	5402	1000	4922
Milk and beef	1976	2097	1104	5018	188	4502
Beef	1640	2848	989	3220	316	4139
Sheep	441	2513	329	2485	224	1612
Hogs	9165	-	8316	-	6098	-

The average cash income and expense of these farms for the three years, 1932-1934, are shown in Table 5. Livestock production and sales were maintained in 1933 but fell in 1934 as the result of a sharp decrease in numbers and production. Crop sales decreased some in 1933 but much more in 1934 in spite of the much higher prices the latter year.

Most items of expense were reduced during the three years. On the other hand, feed purchases were increased sharply to make up for the decreased feed production shown in Table 1. Crop expense decreased in 1933 because of lower twine and threshing bills. It increased sharply in 1934 because of the necessity of buying practically all seed used, including that for emergency crops.

Table 5

Average Cash Income, Cash Expense, and Net Cash Income

<u>Year:</u>	<u>1932</u>	<u>1933</u>	<u>1934</u>
Number of farms	24	22	22
Size of farm, acres	352	374	372
Cash Farm Income:			
Sales of livestock and livestock products	\$1848	\$1889	\$1565
Sales of crops	472	349	171
Miscellaneous income	65	64	80
Total cash farm income	\$2385	\$2302	\$1816
Cash Expense:			
Feed purchases	\$168	\$258	\$592
Livestock expense	327	146	99
Labor	206	148	115
Crop expense	143	98	189
Other expense	766	758	749
Total cash farm expense	\$1610	\$1408	\$1744
Net cash income from farm	775	894	72
Outside work	133	204	322
A.A.A. payments	-	-	479
Total net cash income*	\$908	\$1098	\$873

*Amount available for personal and household expenses and for interest and principal payments.

The net cash income from the farm represents the difference between the cash farm income and the cash farm expense. In addition these farmers received some income from outside work. In 1934 this was largely relief work remunerated by feed payments and services rendered in connection with the wheat and corn-hog adjustment administrations in the county. In 1934 A.A.A. adjustment payments were the largest source of net cash income. They amounted to 55 per cent of the total.

The net cash income is the amount available for household and personal expenses and for interest and principal payments. The average personal and household expenses were \$693 a year. Since the annual interest due amounted to over \$400 per farm, it is obvious that a substantial delinquency occurred each year and default on principal payments was inevitable.

The facts presented thus far indicate the immediate effects of the drouth. Long time effects can not be portrayed so accurately. It will take some time to replace hay and pasture seedings and reestablish the normal cropping systems. Foundation livestock has been sacrificed in many cases. It will take time to replace this. Breeding stock has been weakened by remaining too long on reduced rations. The seriousness of the wind erosion that has occurred is difficult to estimate as yet. Perhaps one of the serious permanent losses is the very severe damage to groves and windbreaks. It will take at least a generation to replace these. Because the drouth damage coincided with the price depression, the farmer's financial resources have suffered severely. He has been unable to meet interest and principal payments. His debts have increased except in so far as he has secured favorable refinancing terms. This represents a problem to each individual farmer that is likely to continue pressing for several years to come.

MINNESOTA FARM PRICES FOR MAY 1935
Prepared by W. C. Waite and W. B. Garver

The index number of Minnesota farm prices for the month of May 1935 was 86.1. When the average of farm prices of the three Mays 1924-25-26 is represented by 100, the indexes for May of each year from 1924 to date are as follows:

May 1924 - 84.3	May 1930 - 98.2
" 1925 - 106.1	" 1931 - 63.5
" 1926 - 110.1	" 1932 - 43.1
" 1927 - 109.0	" 1933 - 49.0
" 1928 - 113.4	" 1934 - 53.1*
" 1929 - 112.6	" 1935 - 86.1*

*Preliminary.

The price index of 86.1 for the past month is the net result of increases and decreases in the prices of farm products in May 1935 over the average of May 1924-25-26 weighted according to their relative importance.

Average Farm Prices Used in Computing the Minnesota Farm Price Index,
May 15, 1935, with Comparisons*

	May 15, 1935	Apr. 15, 1935	May 15, 1934	Av. May 1924-25- 26	% May 15, 1935 is of Apr. 15, 1935	% May 15, 1935 is of May 15, 1934	% May 15, 1935 is of May 15, 1924-25-26
Wheat	\$1.01	\$1.02	\$.74	\$1.31	99	136	77
Corn	.77	.80	.36	.65	96	214	118
Oats	.45	.50	.27	.35	90	167	129
Barley	.70	.84	.48	.59	83	146	119
Rye	.49	.55	.47	.75	89	104	65
Flax	1.57	1.63	1.67	2.32	96	94	68
Potatoes	.36	.37	.50	.83	97	72	43
Hogs	8.10	8.30	3.00	9.60	97	270	84
Cattle	7.20	6.80	3.95	6.38	106	182	113
Calves	7.10	7.20	4.80	8.07	99	148	88
Lambs-sheep	6.99	7.03	7.05	11.39	99	99	61
Chickens	.136	.131	.092	.189	104	148	72
Eggs	.21	.20	.12	.22	106	175	95
Butterfat	.29	.37	.24	.40	78	121	73
Hay	16.84	17.52	9.18	11.49	96	183	147
Milk	1.58	1.73	1.27	1.95	91	124	81

*Except for milk, these are the average prices for Minnesota as reported by the United States Department of Agriculture.

Indexes and Ratios of Minnesota Agriculture*

	May 1935	April 1935	May 1934	Av. May 1924-26
U.S. farm price index	78.3	79.8	54.0	100.0
Minnesota farm price index	86.1	91.2	53.1	100.0
U.S. purchasing power of farm products	96.1	97.9	70.1	100.0
Minnesota purchasing power of farm products	105.6	111.9	69.0	100.0
U.S. hog-corn ratio	9.3	9.2	6.5	12.1
Minnesota hog-corn ratio	10.5	10.4	8.3	15.1
Minnesota egg-grain ratio	14.0	12.7	12.9	14.4
Minnesota butterfat-farm-grain ratio	20.5	23.5	28.8	34.5

*Explanations of the computation of these data are given in Farm Business Notes No. 144.