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MINNESOTA FARM MANAGEMENT SERVICE NOTES

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Prepared by the Farm Management Group at University Farm, St. Paul, Minn.

COMPARATIVE COSTS AND RETURNS FROM RED RIVER VALLEY CROPS
Crookston, Polk County, Minnesota - 1926-1927

The practical difficulties involved in obtaining the absolute cost of producing various crops and livestock products is quite generally recognized among farm management workers. The principal economic conditions which are responsible for these difficulties are the questions of joint costs, joint products, family labor, feedstuffs with no market value, and the innumerable complementary and supplementary relationships that exist between various crops and between various livestock enterprises. Nevertheless cost figures valuable for comparative purposes can be obtained. Such cost figures used in connection with the determination of the relative returns from various enterprises are highly significant and the factors of cost measured in terms of physical units form the basic material out of which all systematic farm reorganization programs must grow.

The results included in this number of the FARM MANAGEMENT SERVICE NOTES represent some of the first two years findings on the relative costs and returns for the principal crops grown on the detailed farm accounting route in the Red River Valley. This route is located in Polk County near Crookston, Minnesota. Eighteen farmers cooperated with the Farm Management Department in 1926 and 1927 to make this study possible.

The figures in Table I on page 2 present relative costs and relative returns for the four cash crops in 1926 and 1927. The crop values were based on the actual average selling prices of the crops in question on the route. In so far as possible the physical units of cost were charged at market prices. A gain of $1.06 per acre on wheat means that every acre of wheat returned $1.06 over and above the prices charged for the principal factors of production. A return per hour of 39 cents on wheat indicates that the wheat enterprises could have paid 39 cents for every hour of labor put on the wheat crop and still have allowed market price for the other factors of production. Wheat, flax and potatoes returned less per hour of man labor in 1927 than in 1926, whereas sugar beets returned more in 1927 than the year before. These differences can not be explained by yield alone, or prices alone, or cost alone. They are the result of a combination of factors, yield and prices being among the more important.

The data presented in Table II on page 3 show relative costs and relative returns for the principal field crops grown in this section which are usually fed and not sold. Because these crops were not generally sold on the route it seemed advisable to use the December 1 farm price in obtaining the crop values. Silage, which is rarely sold, was valued at $4.00 per ton. Again, as in the case of the cash crops, it would appear that the return from the feed crops was much less satisfactory in 1927 than in 1926 with the rather important exception of barley. An increase of 20 cents per bushel in the price of barley in 1927 over the price in 1926 is chiefly responsible for the improved position of barley in 1927.

It is practically a universal rule that in every year some men can be found who make good returns on certain crops while others lose money on the same crops. It is of interest to note that the "return per man hour" on wheat in 1927 for the entire route varied from nothing to $1.28; flax from nothing to $1.28; potatoes from nothing to $1.29; and sugar beets from $.33 to $.82. On the whole, the four cash crops rendered a good account of themselves in both 1926 and 1927 in spite of rather poor crop seasons both years. The ranges in the "return per man

TABLE I

Crop Report Summary 1926-1927 - Acre Basis - Crookston, Polk County, Minnesota

Crop	Wheat		Flax		Sugar Beets		Potatoes	
Year	1926	1927	1926	1927	1926	1927	1926	1927
Acres	1224.58	861.44	646.70	694.99	219.65	43.07	15.98	116.16
Man hours	6 3/4	7 1/4	5 1/2	6	16	18 1/2	39 1/4	40 1/2
Horse hours	17 3/4	17 3/4	12 1/2	16	45	49 3/4	60 3/4	54 1/4
Tractor hours	1/4	1/2	1	1	-	1/2	1/4	3/4
Man labor cost	1.71	1.84	1.39	1.50	4.01	4.61	9.82	10.14
Contract labor cost	-	-	-	-	24.29	24.74	.90	.14
Total labor cost	3.57	4.39	3.56	4.26	32.13	35.89	16.13	17.27
Seed cost	2.35	2.30	1.40	1.34	2.62	2.39	22.34	12.58
Twine cost	.36	.31	.11	.23	-	-	-	-
Summer fallow	-	.25	-	.18	-	2.78	-	.32
Spray cost	-	-	-	-	-	.44	1.05	1.03
Thresh or silo cost	.84	.81	.77	.71	-	-	-	-
Manure and fertilizer	.33	.76	.07	.37	1.79	2.40	1.80	2.02
Machine charge	1.00	1.00	1.00	1.00	1.50	1.50	3.00	3.00
Marketing cost	.04	.05	.07	.03	5.27	5.38	1.13	1.03
Operating cost	8.49	9.87	6.98	8.12	43.31	50.78	45.45	37.25
Land charge	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
TOTAL COST	12.49	13.87	10.98	12.12	47.31	54.78	49.45	41.25
Credit	.04	.04	-	.01	-	.03	-	-
NET COST	12.45	13.83	10.98	12.11	47.31	54.75	49.45	41.25
Yield - grain bu.	14 3/4	13 1/2	7 3/4	5 1/2	-	-	79 1/4	88
Yield - roughage ton	-	-	-	.2	8.72	10.8	-	-
COST PER UNIT	.84	1.02	1.42	2.23	5.42	5.07	.62	.47
Average price received	1.17	1.10	2.09	2.02	6.00	6.00	1.09	54.3¢
CROP VALUE	17.26	14.89	16.18	11.23	52.35	64.92	86.26	47.78
GAIN OR LOSS	+4.81	+1.06	+5.20	-.50	+5.04	+10.17	+36.81	+6.53
Net return for land	+8.81	+5.06	+9.20	+3.50	+9.04	+14.17	+40.81	+10.63
Per cent earned on land+	+11.01	+6.33	+11.50	+4.38	+11.30	+17.71	+51.01	+13.29
RETURN PER MAN HOUR	.95	.39	1.19	.16	.56	.60	1.19	.41

+Land charge per acre; Wild hay $2.00, all other crops $4.00
Value of land per acre; Wild hay land $40.00, all other cropsland $80.00

A minus sign (-) indicates a loss

TABLE II - Crop Report Summary 1926 - 1927 - Acre Basis - Crookston, Polk County, Minnesota

Crop	Oats		Barley		Alfalfa		Wild Hay		Silage	
Year	1926	1927	1926	1927	1926	1927	1926	1927	1926	1927
Acres	1049	863	517	809	498	378	401	507	194	173
Man hours	6½	7¼	7½	7¼	7¼	9¼	3¾	4	17	18
Horse hours	17½	18¾	19	16	11¼	11¾	6	7¼	42¼	39½
Tractor hours	½	¾	½	1	-	-	-	-	½	½
Man labor cost	1.65	1.81	1.88	1.83	1.83	2.34	.93	.99	4.22	4.54
Contract labor cost	-	-	-	-	-	-	-	-	-	-
Total labor cost	3.63	3.73	4.10	4.83	2.80	3.75	1.45	1.84	8.17	9.79
Seed cost	1.05	1.20	1.16	1.40	1.00	1.00	-	-	.64	.87
Twine cost	.32	.30	.32	.29	-	-	-	-	.25	.39
Summer fallow	-	.22	-	.21	-	-	-	-	-	.07
Spray cost	-	-	-	-	-	-	-	-	-	-
Thresh or silo cost	.93	1.04	.90	1.02	-	-	-	-	.99	1.59
Manure and fertilizer	.19	.56	.34	.65	.30	.99	-	-	1.56	2.88
Machine charge	1.00	1.00	1.00	1.00	1.22	1.19	.90	.90	2.64	2.58
Marketing cost	.01	-	.01	.01	-	-	-	-	-	-
Operating cost	7.13	9.05	7.83	9.41	5.32	6.93	2.35	2.74	14.25	18.17
Land charge	4.00	4.00	4.00	4.00	4.00	4.00	2.00+	2.00+	4.00	4.00
TOTAL COST	11.13	13.05	11.83	13.41	9.32	10.93	4.35	4.74	18.25	22.17
Credit	-	.02	-	.01	.23	.46	.08	.09	.04	.07
NET COST	11.13	13.03	11.83	13.40	9.09	10.47	4.27	4.65	18.21	22.10
Yield - grain bu.	30¼	25¼	23¾	26	-	-	-	-	-	-
Yield - roughage ton	-	-	-	-	1.2	1.4	.6	.50	3.2	3.6
COST PER UNIT	.37	.51	.50	.51	7.66	7.74	7.72	9.49	5.69	6.20
December 1 price	.33	.39	.46	.66	13.00	10.00	8.00	5.00	4.00	4.00
CROP VALUE	9.99	9.88	10.98	17.21	15.42	13.74	4.43	2.50	12.80	14.26
GAIN OR LOSS	-1.14	-3.15	-.85	+3.81	+6.33	+3.27	+.16	-2.15	-5.41	-7.84
Net return for land	+2.86	+ .85	+3.15	+7.81	+10.33	+7.27	+2.16	- .15	-1.41	-3.84
Per cent earned on land+	+3.58	+1.06	+3.94	+9.76	+12.91	+9.09	+5.40	- .38	-1.76	-4.80
RETURN PER MAN HOUR	.08	None	.14	.97	1.11	.60	.29	None	None	None

+Land charge per acre: Wild hay $2.00; all other crops $4.00 — minus sign (-) indicates a loss.
Value of land per acre: Wild hay land $40.00; all other crop land $80.00

hour" for the individual feed crops in 1927 were as follows: On oats from nothing to $.55; barley from nothing to $2.20; alfalfa from nothing to $1.00; wild hay from nothing to $.63; and silage from nothing to $.32. The factor chiefly responsible for these wide ranges in "returns per man hour" on individual farms is the factor of cost. Ordinarily it is not possible for the individual farmer to obtain prices for his crops a great deal higher than the prices received for those same crops by his neighbors. It is possible, however, for him to lower his cost of production in many instances, thereby obtaining the benefits he would receive from an increased selling price for his commodity. He as an individual may prosper while others with higher costs may fail. One of the most effective ways by which the individual farmer can lower his costs and obtain higher returns per unit of land or labor is to secure higher yields. This fact is illustrated by the data in the following table taken from the Polk County Route.

TABLE III

The Effect of Yield Upon Cost Per Bushel and Return per Man Hour
Wheat - Polk County, Minn. - 1927

Group	Acres in group	Average yield	Cost per bushel	Return per man hour
10 bu. and under	171	9½	1.34	- .11
10½ to 12	183	11	1.23	+ .01
12½ to 14	154	12½	1.11	+ .21
14½ to 16	205	15¾	.91	+ .59
16½ and over	148	19	.67	+1.07

Note: A minus sign (-) indicates a loss.

Regardless of how the ultimate result of increased production will affect the national returns to agriculture it is still true that from the individual farmer's point of view increased production per acre or per man is one of the basic principles upon which he must build his organization.

Cost figures such as are presented here are of most value to those who are keeping similar accounts. When a farmer is furnished with summary tables showing the relative costs and returns on each crop he may compare his own results with the accomplishments of more successful men and be able to discover weaknesses in his crop production program and find the clue to a remedy for them.

The results incorporated in this report may be applied to farms that are similarly located with respect to soil type and markets, and that are organized and operated in a similar fashion. Since the farms included in this report are fairly typical of many farms in the Red River Valley, the results here presented may be applied directly to a considerable number of the farms in the Valley.

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