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Report 31

UNIVERSITY OF MINNESOTA
Department of Agriculture
and
UNITED STATES DEPARTMENT OF AGRICULTURE
Bureau of Agricultural Economics
Cooperating

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A Preliminary Report
of

COST OF CROP PRODUCTION

From
Data Secured in 1928
on the

FARM ACCOUNTING ROUTE

At

CROOKSTON - POLK COUNTY - MINNESOTA

By

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C.O. Ruud, Routeman

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Division of Farm Management and Agricultural Economics
University Farm
St. Paul, Minn.
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INDEX

	Page
Introduction	1
Summary of Crops for 1926, 1927 and 1928	4
Cost of Producing Spring Wheat	7
Cost of Producing Flax	8
Cost of Producing Oats	9
Cost of Producing Barley	10
Cost of Producing Alfalfa	11
Cost of Producing Wild Hay	12
Cost of Producing Silage Corn	12
Cost of Producing Sugar Beets	13
Cost of Producing Potatoes	14

INTRODUCTION

The Division of Farm Management and Agricultural Economics of the University of Minnesota, the Bureau of Agricultural Economics of the United States Department of Agriculture and from 18 to 25 farmers have been cooperating over a three year period in studying the comparative costs and returns from the principal crops grown in the vicinity of Crookston, Polk County, Minnesota. Polk County is located in the Red River Valley in the northwestern part of the state. The farms in this section are typically small-grain farms averaging over a half section in size. The soil is black clay loam and the land is all level and tillable except along the streams. Wheat, flax, potatoes and sugar beets are the principal cash crops. Oats and barley are produced chiefly for feeding on the farm, altho any surplus may be marketed. Alfalfa and wild hay provide most of the roughage fed to the livestock.

This preliminary report presents data on comparative costs and returns for the nine principal crops grown on twenty-three cooperating farms for the crop season of 1928. A summary of the average cost and returns for each of these crops for 1926, 1927, 1928 and the three year average is also presented. In preparing these tables in so far as possible the factors of production have been charged at local market prices. Man labor has been charged at 25 cents per hour and tractor work at $.90, $1.20 and $1.50 per hour respectively for a two, three and four plow tractor. Horse labor was charged at 8½ cents per hour in 1926, 12 cents in 1927 and 10 cents in 1928. Manure was charged to the crops on a three year basis at 50 cents per ton plus the cost of hauling and spreading it on the field. Summer fallowing charges, consisting of a charge for the land and the labor of fallowing, was distributed over a three year period. The summer fallowing charge was not calculated for 1926 as the necessary data from previous years were not available. Machinery and land were charged at flat rates. The December 1 farm price in the vicinity of Crookston was used in determining the returns from each crop.

The statements on wheat, oats, barley and flax include the labor through the first disposition of the crop. If the crop was hauled directly from the threshing machine to market that marketing labor has been included.

Labor for marketing after the grain had been stored on the farm was not included. The cost of alfalfa and wild hay was computed only through putting it in the stack or mow. The hours of labor on sugar beets do not contain any hours for the contract labor, but the cost of contract labor was included in the labor charge. The marketing charge on sugar beets consists of the man and horse labor utilized in marketing the beets. This labor is not included in either the hours of labor or the total labor cost. Potato picking has been charged at 5 cents per bushel and all hours of picking excluded. The potato statement covers only the cost on the farm and does not include any marketing labor. No credit has been allowed for either wheat, oats, barley or flax straw nor for sugar beet tops.

The returns from crops are expressed in four different ways, namely, gain or loss, net return for land, per cent earned on land and return per hour of man labor. The gain or loss shows what is left after subtracting all the specified charges. A minus figure indicates a loss, or the failure of the value of the crop to equal the costs. The net returns for land indicates what remains to pay for the use of the land after all the other factors have been paid. The per cent earned on land is the net return for land divided by the value of the land. Wild hay land was valued at $40.00 per acre and all other crop land at $80.00. If wheat showed 15 per cent earned on land it meant that the wheat crop paid the prices charged for all the other factors and still earned 15 per cent on an $80.00 investment in the land. The return per man hour expresses the returns in a fourth way. A return of $.65 per hour on wheat means that the wheat crop could have paid 65 cents for every hour of man labor it used and still allowed the prices charged for the other factors of production.

In studying the data presented it should be kept in mind that sugar beets and potatoes are generally given the cleanest and best ground. Flax is often planted on new breaking or on inferior land not regularly cropped, which is not always well prepared. On the other hand sugar beets have been charged the full value of the commercial fertilizer applied. The following crops received some benefit from the unused fertilizer left in the soil as well as from the thorough tillage and weed eradication methods practiced with the beet crop.

The summary for the three year period indicates that there is relatively little variation between years in either the average amount of labor used or in the cost per acre. However, the cost per bushel or ton and particularly the December 1 price display wider variations. When the return per man hour is considered, it is seen that wheat, barley, sugar beets, alfalfa and wild hay have all returned something for the labor every year. As an average for the three year period all of the nine crops except corn silage and oats have yielded a return of over 25 cents per hour.

The tables presenting each individual's costs and returns show a wide range between farms in the returns from any one crop. Both high and low returns were realized on all the crops except potatoes and corn silage. The potato data in 1928 have been computed only to the cost per bushel since the abnormally low price would have resulted in a loss in every case.

Because of the wide fluctuation in prices from year to year returns from potatoes vary widely. It is typical "feast and famine" crop. A statement of returns for an individual year is likely to be misleading unless presented in connection with data for a period of years. It will be noticed that the tables also show a wide variation in yields and that the variations in returns tend to correspond with these variations in yield. This association of high yields and high returns is illustrated by the following table which shows the relation of yield to cost and returns for barley.

Relation of Yield per Acre to Cost and Returns for Barley
Crookston, Minnesota - 1928

Yield per Acre	No. of farms	Average yield	Net cost per acre	Cost per bu.	Gain per A.	Return per man hour
16 to 24 bu.	6	20	$12.33	$.62	-$3.13	-$.30
25 to 32 "	6	28	12.89	.46	.13	.27
33 to 40 "	6	36	14.95	.42	1.69	.44
Over 40 "	3	49	14.26	.29	8.58	1.34

As the yield increased the cost per bushel decreased in spite of a greater cost per acre. As a result of the double effect of having more bushels and a lower cost per bushel, the gain per acre and the return per man hour increased quite rapidly. A similar relation between yields, costs and returns existed in case of all the crops studied.

Yield per acre is only one of the causes of variations in returns. Costs and prices also exert an influence but space will not permit an analysis of these other factors. Each individual comparing his results with those of the other cooperators and with the average should find ways of increasing the returns from his crop enterprises.

Comparative Costs and Returns per Acre on Specified Crops
Polk County, Minnesota - 1926, 1927 & 1928

	Wheat				Flax				Barley			
	1926	1927	1928	Average	1926	1927	1928	Average	1926	1927	1928	Average
No. of farms	15	17	21	-	7	12	9	-	13	18	21	-
Ave. No. A. per farm	82	54	64	-	92	58	63	-	40	45	41	-
Man hours	7¼	7¾	7½	7½	7½	7¼	6½	7	8	8	7¾	8
Horse hours	18¾	18	17	18	21¼	18¾	15¾	18½	21	20	17¼	19½
Tractor hours	¼	½	½	½	½	¾	1	¾	½	½	¾	½
Man labor cost	$1.79	$1.94	$1.90	$1.88	$1.90	$1.81	$1.63	$1.78	$1.97	$1.95	$1.93	$1.95
Contract labor cost	-	-	-	-	-	-	-	-	-	-	-	-
Total labor cost	3.64	4.66	4.26	4.19	4.38	4.82	4.32	4.51	4.23	5.06	4.30	4.53
Seed cost	2.36	2.32	1.98	2.22	1.27	1.36	1.32	1.32	1.15	1.48	1.59	1.41
Twine cost	.34	.33	.32	.33	.19	.24	.25	.23	.32	.32	.35	.33
Summer fallow	-	.16	.26	.14	-	.14	.66	.27	-	.16	.43	.19
Spray	-	-	-	-	-	-	-	-	-	-	-	-
Thresh or silo cost	.87	.84	1.11	.94	.96	.78	.82	.85	.94	1.04	1.22	1.07
Manure & fertilizer	.34	.96	.56	.62	.32	1.03	.41	.58	.50	.93	.61	.68
Machine charge	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
OPERATING COST	8.55	10.27	9.49	9.44	8.12	9.37	8.78	8.76	8.14	9.99	9.50	9.21
Land charge	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Total costs	12.55	14.27	13.49	13.44	12.12	13.37	12.78	12.76	12.14	13.99	13.50	13.21
Credit	.02	.02	.04	.03	-	-	-	-	-	.02	-	.01
NET COST	12.53	14.25	13.45	13.41	12.12	13.37	12.78	12.76	12.14	13.97	13.50	13.20
YIELD-Grain, bu.	14.5	13.9	19.2	15.9	8.1	5.7	6.3	6.7	24.8	26.5	31.2	27.5
Roughage, ton	-	-	-	-	-	-	-	-	-	-	-	-
COST PER UNIT	$.87	$1.03	$.70	$.85	$1.50	$2.35	$2.02	$1.90	$.49	$.53	$.43	$.48
December 1 price	1.25	1.09	.88	1.05	1.95	1.85	2.12	1.97	.46	.66	.46	.53
Crop value	18.08	15.17	16.87	16.71	15.77	10.55	13.43	13.20	11.39	17.51	14.34	14.[illegible]
GAIN OR LOSS	5.55	.92	3.42	3.30	3.65	-2.80	.65	.44	-.75	3.54	.84	1.38
Net return for land	9.55	4.92	7.42	7.30	7.65	1.20	4.65	4.44	3.25	7.54	4.84	5.38
% earned on land*	11.94	6.16	9.28	9.13	9.56	1.50	5.08	5.55	4.06	9.43	6.05	6.73
RETURN PER MAN HOUR	$1.01	$.37	$.72	$.6[illegible]	$.73	-$.14	$.35	$.32	$.15	$.69	$.36	$.42

*Value of land per acre: wild hay land $40.00; all other crop land $80.00.
A minus(-) indicates a failure to meet the specified charges or to return anything for the factor in question.

Comparative Costs and Returns per Acre on Specified Crops
Polk County, Minnesota - 1926, 1927 & 1928

	Oats				Sugar Beets				Potatoes			
	1926	1927	1928	Average	1926	1927	1928	Average	1926	1927	1928	Average
No. of farms	15	19	21		6	2	5		18	17	18	
Ave. No. A. per farm	70	45	48		37	22	23		65	7	30	
Man hours	7¾	7½	7½	7½	18½	18½	14¾	17¾	30¾	30	31¾	30¾
Horse hours	21	18½	17½	19	50½	49¾	36	45½	58¼	52¾	52	54¼
Tractor hours	¼	¾	½	½	-	¾	¾	½	¼	¾	1¼	¾
Man labor cost	$1.92	$1.66	$1.85	$1.88	$4.60	$4.68	$5.71	$4.33	$7.68	$7.50	$7.76	$7.65
Contract labor cost	-	-	-	-	24.28	24.71	24.17	24.39	3.67	4.16	5.40	4.41
Total labor cost	4.05	4.82	4.19	4.35	33.15	36.00	32.15	33.76	16.66	18.54	19.93	18.31
Seed cost	1.08	1.23	1.57	1.29	3.56	2.38	2.49	2.48	22.82	12.67	13.39	16.29
Twine cost	.36	.31	.29	.32	5.46*	5.27*	5.22*	5.32*	-	-	-	-
Summer fallow	-	.14	.36	.17	-	3.03	1.08	1.37	-	.47	.23	.23
Spray	-	-	-	-	-	.48	.08	.19	.97	.94	.91	.94
Thresh or silo cost	1.12	1.04	1.59	1.25	-	-	-	-	-	-	-	-
Manure & fertilizer	.23	.67	.58	.49	1.75	2.38	2.78	2.30	1.30	2.09	3.44	2.28
Machine charge	1.00	1.00	1.00	1.00	1.50	1.50	1.50	1.50	3.00	3.00	3.00	3.00
OPERATING COST	7.84	9.21	9.58	8.87	44.42	51.04	45.30	46.92	44.75	37.71	40.70	41.05
Land charge	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Total costs	11.84	13.21	13.58	12.87	48.42	55.04	49.30	50.92	48.75	41.71	44.70	45.05
Credit	-	.02	.06	.02	-	.03	-	.01	-	-	-	-
NET COST	11.84	13.19	13.52	12.85	48.42	55.01	49.30	50.91	48.75	41.71	44.70	45.05
YIELD-Grain, bu.	34.5	25.6	43.2	34.3	-	-	-	-	73.4	83.3	105	87.2
Roughage, tons	-	-	-	-	8.6	10.7	10.1	9.8	-	-	-	-
COST PER UNIT	$.34	$.52	$.31	$.37	$5.65	$5.14	$4.89	$5.19	$.66	$.50	$.43	$.52
December 1 price	.33	.39	.34	.35	6.00	6.00	6.00	6.00	1.05	.40	.25	.57
Crop value	11.40	9.91	14.71	12.01	51.40	64.37	60.48	58.80	77.05	33.32	26.15	49.70
GAIN OR LOSS	-.44	-3.28	1.19	-.84	2.98	9.36	11.18	7.89	28.30	-8.39	18.55	4.65
Net return for land	3.56	.72	5.19	3.16	6.98	13.36	15.18	11.89	32.30	-4.39	14.55	8.65
% earned on land**	4.45	.9	6.49	3.95	8.73	16.70	18.97	14.86	40.38	-5.49	18.16	10.81
RETURN PER MAN HOUR	$.19	None	$.41	$.14	$.41	$.75	$1.00	$.71	$1.17	$.22	None	$.40

*Marketing
**Value of land per acre: wild hay land $40.00; all other crop land $80.00.
A minus(-) indicates a failure to meet the specified charges or to return anything for the factor in question.

Comparative Costs and Returns per Acre on Specified Crops
Polk County, Minnesota - 1926, 1927 & 1928

	Silage Corn				Alfalfa				Wild Hay			
	1926	1927	1928	Average	1926	1927	1928	Average	1926	1927	1928	Average
No. of farms	8	10	6		17	15	16		8	10	8	
Ave. No. A. per farm	24	17	18		29	25	23		50	51	27	
Man hours	17¾	18¾	15¾	17½	7¾	10¾	8¾	9	5	6	5½	5½
Horse hours	45	40¾	36½	40¾	12	13½	12¾	12¾	8	9½	8¼	8½
Tractor hours	¼	½	1	½	-	-	-	-	-	-	-	-
Man labor cost	$4.45	$4.71	$3.97	$4.38	$1.95	$2.66	$2.16	$2.26	$1.26	$1.44	$1.41	$1.37
Contract labor cost	-	-	-	-	-	-	-	-	-	-	-	-
Total labor cost	8.60	10.13	8.87	9.20	2.98	4.28	3.44	3.56	1.93	2.54	2.22	2.23
Seed cost	.68	.90	.88	.82	1.00	1.00	1.00	1.00	-	-	-	-
Twine cost	.27	.39	.42	.36	-	-	-	-	-	-	-	-
Summer fallow	-	.10	-	-	-	-	-	-	-	-	-	-
Spray	-	-	-	-	-	-	-	-	-	-	-	-
Thresh or silo cost	1.10	1.74	1.24	1.36	-	-	-	-	-	-	-	-
Manure & fertilizer	2.07	2.51	2.02	2.20	.53	1.40	.61	.85	-	-	-	-
Machine charge	2.65	2.72	3.00	2.79	1.20	1.19	1.17	1.19	.90	.90	.93	.91
OPERATING COST	15.37	18.49	16.43	16.76	5.71	7.87	6.22	6.60	2.83	3.44	3.15	3.14
Land charge	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	2.00	2.00	2.00	2.00
Total costs	19.37	22.49	20.43	20.76	9.71	11.87	10.22	10.60	4.83	5.44	5.15	5.14
Credit	.04	.04	.04	.04	.80	.30	.02	.37	.13	.05	-	.06
NET COST	19.33	22.45	20.39	20.72	8.91	11.57	10.20	10.23	4.70	5.39	5.15	5.08
YIELD-Grain, bu.	-	-	-	-	-	-	-	-	-	-	-	-
Roughage, tons	3.6	3.5	4.0	3.7	1.3	1.4	1.4	1.37	.7	.7	.9	.77
COST PER UNIT	$5.44	$6.37	$5.15	$5.60	$6.85	$8.07	$7.38	$7.46	$6.71	$7.29	$5.65	$6.60
December 1 price	4.00	4.00	4.00	4.00	13.00	10.00	12.00	11.67	8.00	5.00	7.00	6.67
Crop value	14.17	14.07	15.91	14.80	16.98	14.24	16.23	15.99	6.01	3.72	6.37	5.14
GAIN OR LOSS	-5.16	-8.38	-4.48	-5.92	8.07	2.67	6.03	5.76	1.31	-1.67	1.22	.06
Net return for land	-1.16	-4.38	- .48	-1.92	12.07	6.67	10.03	9.76	3.31	.33	3.22	2.06
% earned on land*	-1.45	-5.48	- .60	-2.40	15.10	8.34	12.54	12.20	8.28	.83	8.05	5.15
RETURN PER MAN HOUR	-$.04	-$.20	-$.03	-$.09	$1.28	$.50	$.94	$.89	$.51	$.04	$.47	$.26

*Value of land per acre; wild hay land $40.00; all other crop land $80.00.
A minus (-) indicates a failure to meet the specified charges or to return anything for the factor in question.

Cost per Acre of Producing Wheat - Crookston, Minnesota - 1928

Farm No.	Hours of Labor: Man	Hours of Labor: Horse	Hours of Labor: Tractor	Cost: Labor	Cost: Seed	Cost: Twine	Cost: Summer fallow	Cost: Thresh	Cost: Manure	Cost: Machine	Cost: Land	Net cost	Yield bu.	Cost per bu.	Net return for land	Return per hour
121	6¼	14¾	-	$3.05	$1.50	$.37	-	$1.74	$.50	$1.00	$4.00	$12.16	30½	$.40	$20.44	$2.86
(1) 232	5¾	6⅞	2¼	4.68	2.25	-	-	.81	2.12	.60	4.00	14.46	34	.42	15.42	2.25
061	7¾	14¼	¼	3.72	2.81	.46	-	2.23	1.58	1.00	4.00	15.80	37¼	.43	23.16	2.71
236	7¾	14¼	¼	4.06	2.11	.42	-	1.68	.27	1.00	4.00	13.54	31¼	.43	17.72	2.02
(1) 233	7½	8¾	2	5.32	2.19	.17	-	1.17	.33	.77	4.00	13.95	25	.56	8.97	.91
231	7¼	10⅞	1¼	4.47	1.63	.30	.64	1.49	.55	1.00	4.00	14.02	24¾	.56	8.88	.93
023	7¾	22⅞	-	4.19	1.65	.38	.34	1.20	.86	1.00	4.00	*13.61	23	.59	12.05	1.29
191	8½	23¾	-	4.49	2.87	.30	-	1.19	.35	1.00	4.00	14.20	22	.64	10.49	1.02
032	14½	33¼	-	6.98	1.74	.32	-	1.31	.25	1.00	4.00**	14.85	22	.68	9.81	.65
026	5¾	9¾	¼	2.84	2.06	.19	-	1.01	.52	1.00	4.00	11.62	17	.69	5.22	.46
082	11¼	25¾	-	5.40	2.35	.46	-	1.34	.93	1.00	4.00	15.48	22¼	.69	8.17	.62
111	8¼	23¼	-	4.39	2.15	.29	.40	1.17	.71	1.00	4.00	14.11	19½	.72	4.72	.34
031	9	26½	-	4.91	1.95	.38	-	1.18	1.81	1.00	4.00***	15.23	20¼	.75	8.91	.79
029	7¾	14⅞	1	4.54	2.02	.31	-	1.03	.87	1.00	4.00	13.59	17¼	.79	3.43	.18
234	6¼	10⅞	1	3.87	1.69	.33	.21	.90	.41	1.00	4.00	12.41	15	.83	5.73	.53
171	5¾	12¾	½	3.27	1.97	.30	1.62	.95	.07	1.00	4.00	13.18	15¾	.83	5.06	.44
071	8½	26½	-	4.77	2.22	.25	-	1.01	.91	1.00	4.00	14.16	16¾	.84	2.66	.09
027	4	2	2	3.71	1.99	.23	-	.77	-	1.00	4.00	11.70	12¾	.91	2.04	None
022	8¼	15⅞	1	4.60	1.65	.30	.66	.79	.24	1.00	4.00	13.24	14.3	.93	4.16	.27
201	7¾	25¼	-	4.46	1.89	.26	.31	.76	.60	1.00	4.00	13.28	12½	1.06	.28	None
141	4	4¾	1¾	2.96	2.11	.30	.78	.55	.08	1.00	4.00	11.78	11	1.08	2.05	None
235	6¼	11¼	1¾	4.24	1.86	.20	.55	.63	.12	1.00	4.00	12.60	10½	1.19	1.33	None
025	7	16¾	1	4.43	1.43	.29	-	.57	.24	1.00	4.00	11.86	8	1.50	-.43	None
Avg.	7½	17	½	4.26	1.98	.32	.26	1.11	.56	1.00	4.00	****13.45	19¼	.70	7.42	.72

(1) Omitted from the average.
December 1 price: durum wheat 76¢, other spring wheat 94¢.
*Credit of 6¢ per acre for pasture
** " " 75¢ " " " "
*** " " 18¢ " " " "
**** " " 4¢ " " for hay and pasture.

Cost per Acre of Producing Flax - Crookston, Minnesota - 1928

Farm No.	Hours of Labor			COST								Net cost	Yield bu.	Cost per bu.	Net return for land	Return per hour
	Man	Horse	Tractor	Labor	Seed	Twine	Summer fallow	Thresh	Manure	Machine	Land					
*025	4	8	[illegible]	$1.81	$.80	$.27	-	[illegible]	$.25	$1.00	$4.00	$8.13	6	$1.35	$8.60	$1.39
234	6½	10¾	1¾	4.86	1.05	.36	-	$.96	.70	1.00	4.00	12.93	8	1.62	7.99	.86
087	3¾	2½	1¾	3.20	1.16	.23	-	.75	-	1.00	4.00	10.34	6¼	1.65	6.98	1.07
236	10¾	21¼	¾	5.67	1.42	.39	$1.41	1.55	.21	1.00	4.00	15.65	9	1.73	7.58	.58
201	8¾	25¼	-	4.75	1.69	.41	3.44	1.12	.60	1.00	4.00	17.01	9½	1.81	6.87	.57
*233	4½	6¾	2	4.14	1.03	-	-	.81	-	.60	4.00	10.58	5¼	1.98	4.77	.42
071	6	18¾	-	3.40	1.39	.23	-	.66	.91	1.00	4.00	11.59	5½	2.09	4.16	.28
*231	5	10½	1¼	3.88	.81	-	-	.56	.09	1.00	4.00	10.34	4¾	2.23	3.50	.15
026	5½	17¾	½	3.75	.97	.15	-	.54	.47	1.00	4.00	10.88	4½	2.44	2.58	None
171	7¾	26½	-	4.55	1.14	.26	-	.57	.23	1.00	4.00	11.75	4¾	2.46	2.38	.04
141	3	3½	2	2.87	1.37	.03	1.10	.65	.32	1.00	4.00	11.34	4½	2.48	2.14	None
*232	3	1½	1¾	3.12	.55	-	-	.41	-	.81	4.00	8.89	3½	2.58	2.41	None
022	6¾	15¾	3	5.84	1.68	.14	-	.59	.24	1.00	4.00	13.49	5	2.75	.92	None
Average	6½	15¾	1	4.32	1.32	.25	.66	.82	.41	1.00	4.00	12.78	6¼	2.02	4.65	.35

*Not included in the average.
December 1 price $2.12 per bushel.

Cost per Acre of Producing Oats - Crookston, Minnesota - 1928

Farm No.	Hours of Labor: Man	Horse	Tractor	COST: Labor	Seed	Twine	Summer fallow	Thresh	Manure	Machine	Land	Net cost	Yield bu.	Cost per bu.	Net return for land	Return per hour
191	6¾	14½	-	$3.11	$1.80	$.30	-	$2.21	$.36	$1.00	$4.00	$12.51*	75½	$.17	$17.17	$2.24
236	8¼	16¾	¾	4.68	1.34	.41	-	2.45	.27	1.00	4.00	14.15	75	.19	15.25	1.63
061	6	9¼	¼	2.82	1.77	.37	-	2.79	.62	1.00	4.00	13.37	69¾	.19	14.34	1.96
121	7½	20¾	-	3.95	1.59	.26	-	1.79	.48	1.00	4.00	13.07	57¾	.23	10.58	1.13
232	7	12½	¾	3.99	1.20	.40	-	2.50	2.09	1.00	4.00	15.18	62½	.24	10.05	1.12
082	10	24¼	-	4.93	1.68	.36	$.25	2.00	.70	1.00	4.00	14.92	50	.30	6.12	.46
029	7	14	¼	3.51	1.41	.26	.65	1.74	.85	1.00	4.00	13.45	43½	.31	5.38	.45
071	6½	21¼	-	3.76	1.52	.26	-	1.67	.91	1.00	4.00	13.12	41¾	.31	5.08	.41
111	7¾	19½	-	3.92	1.65	.32	2.00	1.85	.36	1.00	4.00	15.10	46¾	.32	4.78	.35
025	7	17¼	½	3.54	2.24	.39	1.58	1.67	.24	1.00	4.00	14.66	41¾	.35	3.54	.19
171	6¼	16¼	¼	3.77	1.54	.24	-	1.30	.12	1.00	4.00	11.97	32½	.37	3.08	.10
141	4	5¾	1¼	2.71	1.35	.24	1.48	1.12	.08	1.00	4.00	11.98	32¼	.37	2.96	None
234	6¾	11½	1½	4.53	1.41	.31	-	1.38	.26	1.00	4.00	12.89	34½	.37	2.87	.08
031	11½	34¼	-	6.31	1.52	.44	-	1.32	2.01	1.00	4.00	16.60	44	.38	2.43	.11
026	5¾	16¾	½	3.74	1.75	.26	1.34	1.39	-	1.00	4.00	13.48**	34¾	.39	2.30	None
023	7	22	-	3.98	1.49	.22	-	.84	.50	1.00	4.00	11.46	29½	.39	2.57	.05
(1) 233	7¾	8¾	2¼	5.46	1.80	.14	-	1.30	.50	.91	4.00	14.11	35½	.40	1.92	None
032	11¾	30¼	-	6.00	1.14	.33	-	1.38	.22	1.00	4.00	13.82***	34¾	.40	1.99	.08
031	8	9½	1½	4.69	2.15	.14	.54	1.38	.29	1.00	4.00	14.19	34[illegible]	.4[illegible]	1.56	None
235	6	15	¾	3.80	1.18	.24	-	1.04	.93	1.00	4.00	12.19	26	.47	.67	None
201	7¼	23½	-	4.17	1.50	.22	-	1.02	.60	1.00	4.00	12.51	25½	.49	.16	None
022	7	12½	2¾	5.58	1.75	.20	-	.48	.24	1.00	4.00	13.34****	15½	.85	-3.95	None
Avg.	7½	17½	½	4.19	1.57	.29	.36	1.59	.58	1.00	4.00	13.52	43	.31	5.19	.41

(1) Not included in the average.
* Credit of 35¢ for hay
** " " 57¢ " "
*** " " 25¢ for pasture
**** " " 6¢ for hay and pasture
December 1, 1928 price - 34¢ per bushel.

Cost per Acre of Producing Barley - Crookston, Minnesota - 1928

Farm No.	Hours of Labor: Man	Hours of Labor: Horse	Hours of Labor: Tractor	COST: Labor	COST: Seed	COST: Twine	COST: Summer fallow	COST: Thresh	COST: Manure	COST: Machine	COST: Land	Net cost	Yield bu.	Cost per bu.	Net return for land	Return per hour
061	5½	15½	-	$2.96	$1.68	$.45	-	$2.05	$.76	$1.00	$4.00	$12.90	51¼	$.25	$14.72	$2.15
191	11	27¼	-	5.48	1.37	.46	-	2.04	.35	1.00	4.00	14.70	53	.28	13.68	1.13
031	11	27	-	5.44	1.16	.48	-	1.78	1.49	1.00	4.00	*15.18	44½	.34	9.33	.73
236	7¾	14½	¾	4.44	1.85	.45	-	1.36	.25	1.00	4.00	13.35	37½	.36	7.85	.74
201	10½	26	-	5.26	2.33	.46	.32	1.55	.60	1.00	4.00	15.52	38¾	.40	6.29	.47
235	7¼	15	½	3.78	1.65	.36	-	1.20	.12	1.00	4.00	12.11	30	.40	5.66	.48
082	13¼	26¼	-	5.90	2.01	.48	-	1.47	.59	1.00	4.00	15.45	36¾	.42	5.47	.36
026	7¾	21¾	-	4.20	1.44	.53	1.14	1.33	.53	1.00	4.00	14.17	33¼	.43	5.16	.40
029	7¼	15½	-	3.38	1.19	-	3.78	.20	.85	1.00	4.00	15.85	36¼	.44	4.82	.36
234	7	11¾	1¼	4.35	1.65	.33	-	1.17	.45	1.00	4.00	**12.83	29¼	.44	4.61	.34
233	7¾	11½	1¾	5.30	1.93	.38	-	1.34	1.08	1.00	4.00	15.03	33½	.45	4.42	.30
032	10	24¼	-	4.90	1.40	.35	-	1.14	.18	1.00	4.00	12.97	28½	.45	4.18	.27
121	8¼	25	-	4.53	.75	.25	.54	1.07	.48	1.00	4.00	12.62	26¾	.47	3.66	.21
231	5¾	7¾	1¼	3.61	1.86	.25	.83	1.08	.16	1.00	4.00	12.79	27	.48	3.58	.18
023	7¾	25	-	4.41	1.52	.21	1.37	1.00	.50	1.00	4.00	14.01	28½	.49	3.08	.13
(1) 232	3¾	5¼	1½	3.37	1.72	-	.65	.81	1.31	.60	4.00	12.46	23½	.53	2.34	None
171	4¾	10½	¾	3.05	1.41	.27	-	.83	.73	1.00	4.00	11.29	20¾	.54	2.28	None
027	4	2½	1¾	3.43	1.68	.23	-	.78	-	1.00	4.00	11.12	19½	.57	1.84	None
025	6½	14¼	¾	3.83	1.67	.39	-	.81	.24	1.00	4.00	11.94	20¼	.59	1.42	None
141	4½	6½	1½	3.08	1.74	.28	1.05	.77	.08	1.00	4.00	12.00	19¾	.61	1.05	None
022	8¾	16	2¼	5.80	1.75	.25	-	.69	.24	1.00	4.00	13.73	20	.69	-.58	None
071	6	17	-	3.21	1.41	.29	-	.79	3.22	1.00	4.00	13.92	19¾	.70	-.80	None
Average	7¾	17¼	½	4.30	1.59	.35	.43	1.22	.61	1.00	4.00	13.50	31¼	.43	4.84	.36

(1) Not included in the average
* Pasture credit of 17¢ per acre
** " " " 12¢ " "
December 1, 1928 price 46¢ per bushel

Cost per Acre of Producing Alfalfa - Crookston, Minnesota - 1928

Farm No.	Man hours	Horse hours	COST Labor	Seed	Manure & fertilizer	Machine	Land	Net cost	Yield tons	Cost per ton	Net return for land	Return per man hour
061	16	22	$6.19	$1.00	$.16	$1.25	$4.00	$12.60	3.1	$4.08	$28.43	$1.78
121	15	14½	5.20	1.00	.48	1.25	4.00	11.93	2.7	4.47	24.09	1.59
236	10	13¾	3.85	1.00	-	1.25	4.00	10.10	1.6	6.31	12.51	1.11
232	5	9½	2.22	1.00	1.00	.90	4.00	9.12	1.4	6.66	11.57	1.76
031	7½	12¼	3.11	1.00	1.45	1.18	4.00	10.74	1.5	7.26	11.03	1.17
191	12	20	5.00	1.00	.35	1.25	4.00	11.60	1.6	7.27	11.55	.88
023	9½	14	3.76	1.00	.65	1.25	4.00	10.66	1.4	7.77	9.80	.87
082	12½	15¾	4.93	1.00	1.49	1.03	4.00	12.46	1.5	8.07	10.06	.70
171	8	16	3.61	1.00	.23	1.25	4.00	10.09	1.2	8.32	8.47	.80
025	6¼	9	2.45	1.00	.24	1.25	4.00	8.94	1.	8.86	7.16	.76
026	5¾	7¼	2.15	1.00	.52	1.25	4.00	8.92	1.	9.39	6.49	.69
234	4¾	8¾	2.09	1.00	.90	1.25	4.00	9.24	.9	9.85	6.01	.67
031	6¾	8	2.55	1.00	.40	.90	4.00	8.85	.9	9.88	5.90	.53
(1)032	9¼	17¾	4.07	1.00	.18	1.33	4.00	*9.71	1.	10.08	5.84	.45
201	9½	17½	4.11	1.00	.89	1.20	4.00	11.20	1.1	10.57	5.51	.41
233	5	8½	2.10	1.00	.06	1.14	4.00	8.30	.7	12.40	3.38	.13
071	4¼	6½	1.70	1.00	.91	1.13	4.00	**8.40	.6	19.77	-1.43	None
Average	8¾	12¾	3.44	1.00	.61	1.17	4.00	***10.20	1.4	7.38	10.03	.94

(1) Not included in the average
*Credit of $1.44 per acre for seedless expense of 57¢ for twine and threshing.
** " " .34 " " " pasture.
*** " " .02 " " " pasture.
December 1, 1928 price $12.00.

Cost per Acre of Producing Wild Hay - Crookston, Minnesota - 1928

Farm No.	Man hours	Horse hours	Cost: Labor	Cost: Machine charge	Cost: Land	Net cost	Yield tons	Cost per ton	Net return for land	Return per man hour
082	14¾	19	$5.59	$1.12	$2.00	$8.71	2.6	$3.40	$11.24	$.62
111	4	6	1.58	.90	2.00	4.48	.8	5.48	3.46	.57
121	7¾	6¾	2.59	.90	2.00	5.49	1.	5.49	3.51	.45
232	4¾	9¾	2.17	.90	2.00	5.07	.9	5.72	3.13	.48
*023	6¼	10¼	2.58	.90	2.00	5.48	.8	6.57	2.30	.30
141	4¾	8¾	2.06	.90	2.00	4.96	.7	7.27	1.81	.21
026	4	6¾	1.67	.90	2.00	4.57	.5	8.45	1.22	.05
071	2¾	4¼	1.11	.90	2.00	4.01	.4	8.95	1.13	None
171	2¼	4	.97	.90	2.00	3.87	.3	11.45	.50	None
Average	5½	8¼	2.22	.93	2.00	5.15	.9	5.65	3.22	.47

*Not included in the average.
December 1, 1928 price - $7.00 per ton.

Cost of Producing Silage Corn per Acre - Crookston, Minnesota - 1928

Farm No.	Hours of Labor: Man	Hours of Labor: Horse	Hours of Labor: Tractor	COSTS: Labor	COSTS: Seed	COSTS: Twine	COSTS: Filling	COSTS: Manure	COSTS: Machine	COSTS: Land	Net cost	Yield tons	Cost per ton	Net return for land	Return per man hour
121	24½	64¼	-	$12.54	$1.24	$.73	$2.00	$3.87	$3.00	$4.00	$27.38	6.3	$4.32	$1.99	$.17
236	15½	21½	1¾	8.20	.79	.59	1.57	.27	3.00	4.00	*18.16	4.2	4.32	2.64	.16
232	9¾	21¾	1½	6.30	.95	.50	1.78	2.56	3.00	4.00	19.09	3.9	4.88	.56	None
231	20	46¾	2¾	13.10	1.08	.30	1.25	1.13	3.00	4.00	23.86	4.8	4.98	-.67	.02
026	13	32¼	¼	6.64	.68	.27	.57	3.41	3.00	4.00	18.57	3.4	5.50	-1.06	None
071	12½	33	-	6.46	.56	.11	.26	.91	3.00	4.00	15.30	1.2	12.43	-6.38	None
Average	15¾	36½	1	8.87	.88	.42	1.24	2.02	3.00	4.00	**20.39	4.0	5.15	-.48	-.03

*Credit of 26¢ for fodder.
** " " 4¢ " "
December 1, 1928 price - $4.00 per ton.

Cost per Acre of Producing Sugar Beets - Crookston, Minnesota - 1928

Farm No.	Hours of Labor			COSTS								Net cost	Yield tons	Cost per ton	Net return for land	Return per hour
	Man	Horse	Tractor	Labor	Seed	Summer fallow	Spray	Manure	Machine	Market.	Land					
111	16	40½	-	$32.23	$2.82	-	$.42	$2.91	$1.50	$4.15	$4.00	$48.03	10.7	$4.49	$25.18	$1.27
029	10½	24	¼	28.53	2.12	1.53	-	2.71	1.50	3.30	4.00	43.69	9.5	4.60	17.30	1.51
023	17½	49¾	[illegible]	34.22	2.13	-	-	2.73	1.50	9.36	4.00	53.94	11.6	4.66	19.49	1.13
022	17¼	38¾	2¼	34.77	2.34	2.57	-	2.20	1.50	3.70	4.00	51.08	10.4	4.91	15.34	.90
234	12¾	26¾	1	30.99	3.05	1.30	-	3.34	1.50	5.61	4.00	49.79	8.2	6.09	3.28	.17
Avg.	14¾	36	¾	32.15	2.49	1.08	.08	2.78	1.50	5.22	4.00	49.30	10.1	4.88	15.18	1.00

Price of sugar beets - $6.00 per ton.

Cost per Acre of Producing Potatoes - Crookston, Minnesota - 1928

Farm No.	Hours of Labor: Man	Hours of Labor: Horse	Hours of Labor: Tractor	COST: Labor	COST: Seed	COST: Summer fallow	COST: Spray	COST: Manure	COST: Machine	COST: Market.	COST: Land	Net cost	Yield	Cost per bushel
236	27½	38¼	2	$23.42	$24.94	-	$1.52	$5.06	$3.00	-	$4.00	$62.04	199¾	$.31
121	32¼	48¾	1	21.43	15.31	-	1.87	.99	3.00	-	4.00	46.60	150	.31
061	28¾	40¼	3	25.69	32.59	-	.67	3.33	3.00	-	4.00	69.28	219½	.31½
171	24¼	35¼	1¼	16.50	7.87	-	.65	3.27	3.00	-	4.00	35.29	109¼	.32
111	35¼	60¼	-	25.11	12.25	-	1.04	4.20	3.00	-	4.00	49.60	143¾	.32
191	33¾	62¾	-	22.58	19.93	-	.88	1.61	3.00	-	4.00	52.00	158	.33
023	36¾	70¼	-	22.15	12.70	-	1.35	1.78	3.00	-	4.00	44.98	118¼	.38
233	26	38½	2	17.87	12.81	-	1.86	.64	3.00	-	4.00	40.18	102¼	.37
029	40¼	45½	¾	21.19	12.16	1.54	.66	3.36	2.93	-	4.00	45.84	113	.41
026	35¾	44	[illegible]	17.33	8.90	-	1.02	.52	3.00	-	4.00	34.77	78½	.40
*082	43	59¼	-	23.20	15.62	-	1.88	10.83	3.00	5.17	4.00	63.70	131½	.48
071	35¾	86½	-	21.47	8.04	-	1.78	.91	3.00	-	4.00	39.20	77¾	.43
022	29	38	6	20.18	9.53	2.65	.85	.24	3.00	-	4.00	40.45	75¾	.53
[illegible]	41	73¾	-	21.58	12.31	-	-	1.57	3.00	-	4.00	42.46	79¼	.54
[illegible]	22¼	44¼	½	12.93	8.72	-	-	.12	3.00	-	4.00	28.77	51	.56
025	25¼	55¼	2	16.83	11.77	-	.53	.24	3.00	-	4.00	36.37	6[illegible]¼	.57
*032	35	58½	-	17.05	10.30	-	.33	.26	2.86	.50	4.00	35.30	59¼	.60
231	23	39¾	1¾	14.90	9.07	-	.96	13.86	3.00	-	4.00	45.79	61¼	.75
201	36	79¾	-	19.61	12.27	-	.64	15.35	3.00	-	4.00	54.87	53¼	1.03
234	29¼	35½	1¾	14.39	9.30	-	.52	4.96	3.00	-	4.00	36.17	29¼	1.24
*232	16	28¾	-	6.90	9.90	-	1.13	2.72	1.15	-	4.00	24.65	-	-
Average	31¼	52	1¼	19.73	13.39	.23	.91	3.44	3.00	-	4.00	44.70	105	.43

*Omitted from the average.