UNIVERSITY OF MINNESOTA
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Bureau of Agricultural Economics
Cooperating

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A Preliminary Report of CROP PRODUCTION COSTS

From
Data Secured in 1936
on the

FARM ACCOUNTING ROUTE

In

WINONA COUNTY, MINNESOTA

By

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INTRODUCTION

This preliminary report is used to present the costs of producing the important crops grown on the farms included in the Farm Accounting Route in Winona County, Minnesota. A group of well managed farms in this county were chosen in 1935 with the aid of the county agricultural agent, Mr. H. C. Pedersen. These farmers kept detailed records of time spent, operations performed, seed and twine used, yields, and similar crop data. The costs of production for 1936 are presented for each farm; the average costs for 1935 are presented at the foot of each table. On pages 4 and 5 are presented comparative statements of costs and returns for 1935 and 1936. These data will enable the cooperating farmers to compare their costs with those of their neighbors. Such comparisons should suggest methods of improving their crop operations and increasing their net returns.

Winona County lies in the southeastern part of the state. The topography varies from gently rolling to very hilly. Much of the county is covered with a deposit of very productive loessial material. The surface soil is deficient in lime, but lime deposits underlie it at a relatively shallow depth. The soil washes easily, with the steeper slopes subject to considerable erosion. The growing season varies from 140 to 160 days. The average rainfall is approximately 29 inches, 70 per cent of which is received during the months of April to September, inclusive. Livestock and livestock products constitute the major source of income.

The average size of the farms studies was larger than the average of the county. The distribution of acreage of the farms studied and of all farms in the county, as reported in the 1935 United States Census of Agriculture, is given in Table 1.

Table 1

Distribution of Crop Acreage
Acres per Farm

Crop	Farms Studied 1935	Farms Studied 1936	County* 1934	Crop	Farms Studied 1935	Farms Studied 1936	County 1934
Number of farms	20	24	-				
Corn	26	32	19	Alfalfa	18	14	2
Oats	35	26	17	Clover and timothy	11	22	8
Barley	51	38	15	Other hay	8	5	5
Wheat	11	8	2	Other crops	3	14	6
Other grains	22	20	7	Total crop acreage	185	179	81
				Total acreage	334	301	170

*1935 United States Census of Agriculture.

There is a soil erosion problem on most of the farms studied. Most of the operators are cooperating with the Federal Soil Conservation Service in an erosion control program. Since they have not yet had time to put this program into full operation, few of the effects are apparent in this report. The changes were more complete for the corn crop than for any other crop.

Heavy precipitation, plus the moisture from the winter snows on unfrozen ground, providedmoisture for good yields in 1935. Heavy summer rains, however, interfered with the curing of hay and drying of grain in the shock. Moisture was plentiful during the early part of the 1936 season, but scant rains and high temperatures during July reduced yields of grain and corn. Seeding began in 1936 almost two weeks later than in 1935. Grain harvest, however, began almost a week earlier in 1936.

METHODS OF COMPUTING DATA

The factors of cost were charged at local prices. Man labor was charged at 20 cents per hour. Horse work was charged at 8 cents per hour, a two-plow tractor at 45 cents per hour in 1935 and 50 cents in 1936, and a three-plow tractor at 60 cents in 1935 and 65 cents in 1936. Seeds were charged at purchase prices, or at farm prices plus the cost of cleaning. Manure was charged at 50 cents per ton plus the cost of application. Forty per cent of the cost was charged to the land covered and the balance was prorated on an acre basis to the remaining land normally receiving manure. Flat charges per acre were made for seed for hay crops, machinery and land.

The local farm price on December 1 was used in determining the returns. The value of crops, such as silage, which have no regular market price, were computed by comparing their feeding value with other crops for which local market prices were available. The data for each farm were computed as if the farmer was a full-owner.

Most of the costs used in these calculations are not out-of-pocket costs. Care must, therefore, be used in interpreting these data; but since the costs have been calculated on the same basis for each farm, they can be safely used in comparisons between farms.

USING CROP RECORDS TO INCREASE CROP RETURNS

Most of the crops raised in southeastern Minnesota are utilized as feeds for livestock. It is, therefore, important that the crops grown yield a large quantity of nutrients per acre at a low cost per unit. The production per acre and the relative cost per hundred pounds of digestible nutrients for the principal feed crops for Winona County, based on nineteen-year average county yields and the average costs obtained on the farms studied, adjusted for differences in yields, are presented in Table 2.

Many farms raise some crops for sale. One important consideration in selecting these must be the net returns per acre. It is impossible to predict, with any assurance, what the prices for crops will be in the future. However, it is possible to calculate the relative profitableness of the various crops, using average crop yields and prices and 1935-36 costs on the farms studied. The results of such a calculation are shown in Table 3.

Table 2

Production per Acre and Relative Cost per Hundred Pounds of Digestible Nutrients - Winona County

Crop	Average yield* (1917-35)	Total lbs. digestible nutrients+	% protein is of total nutrients+	Cost per 100 lbs. of total nutrients
Grains:	bushel			
Corn	37.4	1711	8.7	$1.00
Barley	26.4	1006	11.3	1.22
Oats	35.8	806	13.8	1.42
Wheat	17.0	808	11.1	1.50
Roughages:	ton			
Alfalfa	2.6	2652	20.8	.43
Clover and timothy	1.7	1676	10.3	.55
Silage	7.8	2621	7.2	.79

*Yields of alfalfa, clover and timothy, and silage estimated from available data. All other yields from annual reports of State Department of Agriculture.
+Analysis of feeds from "Feeding the Dairy Herd", by Eckles, Minnesota Bulletin 218 (1932).

Table 3

Comparative Returns per Acre of Crops
Winona County

	Malting barley	Flax	Corn	Winter wheat	Spring wheat	Oats
Cost per acre	$12.25	$15.30	$17.00	$12.50	$11.80	$11.50
Yield (1917-35), bushel	26.4	12.0	37.4	18.2	15.8	35.8
Price per bushel (1926-35)	$.69	$1.71	$.55	$.83	$.86	$.32
Net return per acre	5.97	5.22	3.57	2.61	1.79	-.04

High yield of crops will, within limits, further reduce the cost of nutrients or increase the net return per acre. The effect of yield upon the net return per acre. The effect of yield upon the cost per acre and per bushel of producing barley is shown in Table 4. A few things that favor a large yield of crops per acre are (1) a well prepared seedbed, (2) early seeding, (3) the use of the varieties best adapted to the farm, and (4) the planting of clean seed of high vitality.

Table 4

The Yield, Cost per Acre, and Cost per Bushel of Barley
Winona County

	Number of farms	Average yield, bushels	Cost	
			Per acre	Per bushel
Under 13 bushels	6	11	$11.00	$1.00
13 to 19 bushels	7	15	11.54	.77
Over 19 bushels	6	25	12.71	.51

Note: Completion of this project was made possible by workers supplied on Federal Student Work Project, 1936-37, Project Number 39-100; sponsor: University of Minnesota.

Comparative Cost and Return per Acre for the Principal Crops

	Barley		Oats		Winter Wheat		Spring wheat	Oats & wheat	Oats & Barley		Rye	Flax
	1935	1936	1935	1936	1935	1936	1935	1935	1935	1936	1935	1935
Number of farms	19	19	18	17	10	13	9	5	4	7	5	4
Acres per farm	53	40	40	34	14	13	10	23	18	19	27	6
Costs and returns:												
Man labor	$1.61	$1.62	$1.63	$1.65	$2.22	$1.94	$1.70	$1.76	$1.52	$1.83	$1.39	$2.78
Horse and tractor	1.84	2.07	1.94	2.13	2.08	2.31	1.85	2.04	1.90	2.04	1.50	3.01
Seed	2.12	1.55	1.34	.87	1.97	1.95	1.83	1.85	2.00	1.28	1.84	1.57
Twine	.16	.17	.17	.18	.21	.16	.18	.19	.16	.22	.17	.02
Threshing	.61	.49	.90	.87	.75	.67	.42	.71	.67	.82	.36	1.48
Manure	.79	1.29	.75	1.10	.58	1.08	.68	.73	.35	1.59	.65	.38
Machinery	1.06	1.05	1.06	1.05	1.05	1.16	1.05	1.05	1.05	1.05	1.05	1.05
OPERATING COSTS	8.19	8.24	7.79	7.85	8.86	9.27	7.71	8.33	7.65	8.83	6.96	10.29
Land	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
TOTAL COSTS	11.69	11.74	11.29	11.35	12.36	12.77	11.21	11.83	11.15	12.33	10.46	13.79
Crop value (Dec. 1)	11.28	19.32	7.63	12.67	21.86	19.94	8.25	12.20	6.60	15.95	5.21	9.48
CROP VALUE LESS COST*	-.48+	7.58+	-3.66	1.32	9.50	7.17	-2.96	.37	-4.55	3.62	-5.25	-4.31
Yield, bushels	20.5	16.8	31.8	28.8	23.5	16.9	11.0	22.6§	21.3§	27.5§	12.4	6.0
Cost per bu.: Average	$.57	$.70	$.36	$.39	$.53	$.76	$1.02	$.52	$.52	$.45	$.84	$2.30
Lowest	.35	.40	.24	.29	.34	.46	.70	.38	.35	.34	.60	1.33
Highest	.91	1.16	.64	.69	1.10	1.79	1.51	1.52	.83	.86	1.59	4.59
December 1 price	.55	1.15	.24	.44	.93	1.18	.75‡	.54	.31	.58	.42	1.58
Physical requirements:												
To harvest:												
Man labor, hrs.	3.1	3.7	3.2	4.0	2.7	4.2	3.2	2.9	3.3	4.0	2.4	5.6
Horse work, hrs.	10.3	10.2	11.6	12.2	9.6	13.7	10.8	7.7	12.6	12.0	6.1	17.5
Tractor work, hrs.	.8	1.1	.7	1.0	.7	.8	.6	1.1	.5	.8	.8	1.0
Harvest:												
Man labor, hrs.	4.9	4.4	4.9	4.2	8.4	5.5	5.3	5.9	4.3	5.1	4.6	8.3
Horse work, hrs.	5.3	5.2	5.9	4.8	9.4	7.0	5.2	5.6	4.0	5.2	4.7	11.3
Tractor work, hrs.	.3	.3	.3	.3	.3	.2	.4	.5	.5	.5	.3	.4
Seed, bushels	1.7	2.0	2.3	2.2	1.6	1.7	1.6	2.0	2.2	2.1	1.7	.8
Twine, pounds	2.2	1.8	2.4	2.5	3.1	2.3	2.6	2.5	2.3	2.7	2.3	-

*A minus (-) indicates a cost greater than the value of the crop.

+Malting barley prices. Using feed barley prices - 35¢ in 1935 and 70¢ in 1936: crop values less costs are - $4.51 and $.52, respectively.

§At 40 pounds per bushel.

‡Low price because of low quality.

Comparative Cost and Return per Acre for the Principal Crops (Continued)

	Husked Corn		Shredded Corn		Silage Corn		Alfalfa Hay		Clover-1936		Clover & timothy	Timothy seed	Wild hay	Soybean hay
	1935	1936	1935	1936	1935	1936	1935	1936	Hay only	Hay & seed	1935	1936	1935	1935
Number of farms	15	10	7	11	20	22	19	15	14	13	7	5	10	5
Acres per farm	10	15	11	10	13	18	15	11	18	20	12	9	4	6
Costs and returns:														
Man labor	$4.45	$4.62	$4.84	$4.68	$4.34	$3.92	$2.80	$2.50	$1.45	$2.12	$1.70	$.89	$1.96	$3.46
Horse and tractor	4.40	4.16	4.08	4.00	4.06	4.00	1.86	1.69	1.12	1.44	1.28	.56	1.15	3.18
Seed	.42	.76	.48	.63	.64	.74	1.10	1.20	2.63	2.70	1.10	1.30	-	1.76
Twine	-	-	.27	.25	.34	.26	-	-	-	-	-	.14	-	.14
Shredding*	.19	-	1.74	1.49	2.40	2.05	-	-	-	.64	-	.82	-	-
Manure	1.80	3.12	2.48	3.00	2.41	3.28	.75	1.44	1.25	1.16	.81	.85	-	1.12
Machinery	1.55	1.55	2.50	2.49	2.50	2.50	1.21	1.20	.57	1.06	.82	.20	.74	1.51
OPERATING COSTS	12.81	14.21	16.39	16.54	16.69	16.75	7.72	8.03	7.02	9.12	5.71	4.76	3.85	11.17
Land	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	2.00	3.50
TOTAL COSTS	16.31	17.71	18.71+	17.94+	19.39+	16.93+	11.22	11.53	10.52	12.62	9.21	8.26	5.85	14.67
Crop value (Dec.1)	16.38	31.40	13.89	27.90	9.25	13.00	15.35	19.00	11.05	22.03	9.20	10.25	4.50	7.65
VALUE LESS COSTS	.07	13.69	-4.82	9.96	-10.14	-3.93	4.13	7.47	.53	9.41	-.01	1.99	-1.35	-7.02
Yield, bushels	38.1	31.4	32.3	27.9	-	-	-	-	-	.61	-	4.1	-	-
tons	-	-	-	-	7.4	5.2	3.1	1.9	1.3	1.3	2.3	-	1.5	1.7
Cost per bu.: Average	$.43	$.56	$.58	$.64	$2.77	$3.26	$3.62	$6.07	$8.09	$ -	$4.00	$2.01	$3.90	$8.63
(or ton) Lowest	.26	.35	.40	.33	2.02	.96	2.29	2.35	4.68	-	2.76	1.15	2.10	5.85
Highest	1.07	1.90	1.38	1.86	3.96	5.68	8.68	13.43	13.37	-	5.34	5.57	12.69	16.65
Dec. 1 price: Per bu.	.43	1.00	.43	1.00	-	-	-	-	-	18.00	-	-	-	-
Per ton	-	-	-	-	1.25	2.50	4.95	10.00	8.50	8.50	4.00	2.50	3.00	4.50
Physical requirements:														
To harvest or 1st cutting:														
Man labor, hrs.	11.8	11.8	11.9	10.6	10.1	11.3	7.6	6.6	7.2	6.9	7.2	4.4	9.1	7.7
Horse work, hrs.	28.1	24.3	28.1	24.0	24.0	24.8	11.4	10.0	10.8	9.6	11.8	3.7	13.0	19.4
Tractor work, hrs.	1.1	1.4	.9	1.2	1.1	1.5	.2	.1	.4	.4	.2	.5	-	1.2
Harvest or 2nd cutting:														
Man labor, hrs.	10.4	11.3	12.2	12.8	11.6	8.3	5.2	3.8	.1	3.7	1.3	-	.7	9.6
Horse work, hrs.	17.0	17.8	16.4	17.6	19.0	14.4	7.6	6.3	.1	5.1	3.2	-	1.4	11.2
Tractor work, hrs.	.3	-	-	-	-	-	.2	.1	-	-	-	-	-	.1
Third cutting:														
Man labor, hrs.	-	-	-	-	-	-	1.2	2.1	-	-	-	-	-	-
Horse work, hrs.	-	-	-	-	-	-	1.7	2.9	-	-	-	-	-	-
Tractor work, hrs.	-	-	-	-	-	-	-	.1	-	-	-	-	-	-
Seed, bushels	.19	.20	.19	.19	.24	.22	-	-	-	-	-	-	-	1.0
Twine, pounds	-	-	4.4	3.2	4.8	3.0	-	-	-	-	-	1.7	-	2.1

(See next page for footnotes.)

Cost per Acre of Producing Barley

Farm No.	Costs									Yield bu.	Cost per bu.	Hours					
	Man labor	Horse & tractor	Seed	Twine	Thresh-ing	Man-ure	Mach-inery	Land	Total			To Harvest			Harvest		
												Man	Horse	Tractor	Man	Horse	Tractor
123	$2.29	$2.16	$1.77	$.36	$.96	$1.93	$1.05	$3.50	$14.02	35.0	$.40	2.9	4.7	1.0	8.6	12.1	.6
189	1.45	2.02	1.72	.16	.88	3.70	1.05	3.50	14.48	29.5	.49	2.7	4.4	1.5	4.6	4.0	.5
017	1.68	1.59	1.49	.17	.61	1.07	1.05	3.50	11.16	20.4	.55	3.6	14.1	-	4.8	5.8	-
133	1.66	1.98	1.68	.20	.62	1.16	1.05	3.50	11.85	21.6	.55	2.7	5.3	1.3	5.6	4.1	.6
149	1.71	2.09	1.62	.18	.58	1.38	1.05	3.50	12.11	21.3	.57	3.3	13.1	.7	5.2	4.1	.8
027	1.95	1.79	1.88	.24	.63	1.58	1.05	3.50	12.62	21.1	.60	3.7	15.4	-	6.1	7.0	-
029	2.08	1.92	1.18	.22	.49	1.36	1.05	3.50	11.80	17.8	.66	5.1	9.5	1.3	5.3	6.3	-
139	1.80	2.35	2.04	.24	.57	1.65	1.05	3.50	13.20	18.8	.70	4.8	17.2	.5	4.2	8.2	-
129	1.48	2.34	1.39	.20	.45	.13	1.05	3.50	10.54	14.9	.71	3.4	6.9	1.8	4.0	2.0	.7
119	1.07	1.69	1.33	.13	.47	.81	1.05	3.50	10.05	14.2	.71	2.6	9.6	.7	2.7	3.0	.4
014	1.22	2.03	1.24	.16	.41	1.86	1.05	3.50	11.47	13.6	.84	3.2	11.9	.9	2.9	5.1	.1
118	1.66	2.24	1.32	.14	.39	1.43	1.05	3.50	11.73	13.0	.90	4.2	11.4	1.6	4.1	4.1	.4
016	1.99	2.61	1.31	.17	.38	1.08	1.05	3.50	12.09	13.2	.92	4.8	13.6	1.2	5.2	8.9	-
109	1.35	2.09	1.87	.12	.36	1.22	1.05	3.50	11.56	12.1	.96	4.0	4.1	2.6	2.7	1.7	.6
018	1.79	2.41	1.46	.14	.33	.59	1.05	3.50	11.27	11.3	1.00	4.7	17.3	.9	4.3	5.8	-
159	1.37	2.39	1.49	.08	.33	.84	1.05	3.50	11.05	11.1	1.00	3.2	2.7	2.4	3.6	3.3	.5
179	2.01	2.64	1.37	.10	.33	.97	1.05	3.50	11.97	11.5	1.04	6.4	22.8	.6	3.7	6.2	-
219	1.41	1.55	1.55	.13	.35	1.18	1.05	3.50	10.72	10.0	1.07	3.1	7.8	.8	4.0	5.5	.1
121	.90	1.44	1.60	.13	.24	.56	1.05	3.50	9.42	8.1	1.16	1.9	2.6	1.2	2.7	1.6	.5
Avg. 1936	1.62	2.07	1.55	.17	.49	1.29	1.05	3.50	11.74	16.8	.70	3.7	10.2	1.1	4.4	5.2	.3
1935	1.61	1.84	2.12	.16	.61	.79	1.06	3.50	11.69	20.5	.57	3.1	10.3	.8	4.9	5.3	.3

Footnotes for table on page 5:

*Includes also mechanical husker, silo filler, and huller charges.

†Net cost after deducting stover credit of $1.18 in 1935 and $2.10 in 1936, and credit to silage for corn knocked off by binder of $.80 in 1935 and $3.32 in 1936.

§A minus (-) indicates a cost greater than the value of the crop.

Cost per Acre of Producing Oats

Farm No.	Costs									Yield bu.	Cost per bu.	Hours					
												To Harvest			Harvest		
	Man labor	Horse & tractor	Seed	Twine	Thresh-ing	Man-ure	Mach-inery	Land	Total			Man	Horse	Tractor	Man	Horse	Tractor
014	$1.31	$1.93	$.76	$.17	$1.16	$1.30	$1.05	$3.50	$11.18	38.7	$.29	3.1	15.5	.2	3.4	5.7	.2
109	2.26	2.48	.81	.45	1.37	1.22	1.05	3.50	13.14	45.5	.29	4.6	5.8	2.5	6.7	6.4	.5
226	1.75	1.93	1.41	.24	1.43	1.61	1.05	3.50	12.92	43.3	.30	3.5	3.0	2.4	5.3	6.0	-
027	1.47	1.48	.96	.17	.93	1.56	1.05	3.50	11.12	32.1	.35	3.3	11.8	.2	4.1	4.9	-
119	1.10	1.83	.96	.13	1.04	.80	1.05	3.50	10.41	29.2	.36	2.9	10.7	.8	2.6	2.4	.4
133	1.45	1.94	.76	.20	.84	1.16	1.05	3.50	10.90	29.8	.37	2.6	4.0	1.5	4.7	3.5	.5
219	1.68	1.81	1.04	.22	.89	1.04	1.05	3.50	11.23	29.9	.38	3.3	8.1	1.1	5.1	7.4	-
017	1.42	1.56	.72	.16	.79	1.07	1.05	3.50	10.27	26.2	.39	3.6	14.8	-	3.4	4.7	-
149	1.34	2.01	.65	.18	.72	1.62	1.05	3.50	11.07	27.6	.40	3.6	14.8	.6	3.0	2.1	.7
129	1.59	2.35	.66	.20	.63	.10	1.05	3.50	10.08	23.8	.42	4.2	13.6	1.1	3.7	1.8	.6
016	2.21	2.90	.68	.25	.81	1.08	1.05	3.50	12.48	26.9	.46	5.9	20.8	.8	5.1	8.8	-
159	1.22	2.06	1.04	.10	.65	.76	1.05	3.50	10.38	21.8	.48	2.6	3.1	1.8	3.5	2.9	.6
018	2.37	2.79	1.02	.16	.76	.58	1.05	3.50	12.23	25.3	.48	5.6	20.2	.8	6.3	8.5	-
118	1.76	2.62	.69	.07	.71	1.25	1.05	3.50	11.65	23.8	.49	4.6	9.6	2.5	4.1	3.3	.7
169	2.21	2.52	.75	.19	1.06	2.27	1.05	3.50	13.55	26.6	.51	6.9	25.1	-	4.1	6.3	-
179	1.88	2.44	1.13	.08	.61	.87	1.05	3.50	11.56	21.4	.54	6.2	22.6	.3	3.2	6.0	-
121	.96	1.62	.77	.13	.39	.43	1.05	3.50	8.85	12.9	.69	2.2	3.2	1.4	2.6	1.4	.5
Avg.																	
1936	1.65	2.13	.87	.18	.87	1.10	1.05	3.50	11.35	28.8	.39	4.0	12.2	1.0	4.2	4.8	.3
1935	1.63	1.94	1.34	.17	.90	.75	1.06	3.50	11.29	31.8	.36	3.2	11.6	.7	4.9	5.9	.3

Cost per Acre of Producing Winter Wheat

Farm No.	Costs									Yield bu.	Cost per bu.	Hours					
	Man labor	Horse & tractor	Seed	Twine	Thresh-ing	Man-ure	Mach-inery	Land	Total			To Harvest			Harvest		
												Man	Horse	Tractor	Man	Horse	Tractor
123	$3.15	$2.82	$1.95	$.40	$1.37	$1.93	$1.05	$3.50	$16.17	35.1	.46	4.1	15.4	-	11.6	19.9	-
027	2.02	1.69	2.68	.18	.75	1.56	1.05	3.50	13.43	25.1	.53	3.0	13.2	-	7.2	7.9	-
189	1.32	1.91	2.18	.17	.45	-	1.05	3.50	10.58	15.8	.67	3.0	5.4	1.5	3.6	2.9	.4
121	1.30	1.68	1.78	.13	.46	.56	1.05	3.50	10.46	15.3	.68	2.4	5.3	1.0	4.1	3.9	.5
119	1.21	1.84	1.79	.12	.46	.80	1.05	3.50	10.77	15.2	.71	3.1	12.4	.6	2.9	5.6	-
129	1.98	2.23	2.59	.06	.96	.10	1.05	3.50	12.47	17.0	.73	3.5	6.2	1.3	6.4	4.2	1.0
118	2.11	2.46	.78	.12	.49	1.25	1.05	3.50	11.76	16.0	.74	4.6	13.7	1.3	6.0	5.2	.6
169	2.45	2.78	1.83	.18	1.24	2.27	1.05	3.50	15.30	19.2	.80	6.2	27.4	-	6.0	7.3	-
018	2.39	2.19	1.74	.19	.43	.58	1.05	3.50	12.07	14.5	.83	3.9	16.6	-	8.0	10.8	-
179	1.83	1.88	1.45	.15	.67	.88	1.05	3.50	11.41	12.4	.85	5.1	18.0	-	4.0	5.6	-
014	1.49	1.88	.87	.17	.78	1.44	1.05	3.50	11.18	12.6	.89	3.1	12.3	.4	4.3	6.4	.2
016	2.20	2.60	1.44	.14	.36	1.08	1.05	3.50	12.37	11.9	1.03	5.5	23.8	-	5.4	8.8	-
159	1.80	4.06	4.26	.07	.30	1.54	2.53	3.50	18.06	10.1	1.79	6.6	8.6	4.6	2.3	3.0	.2
Avg. 1936	1.94	2.31	1.95	.16	.67	1.08	1.16	3.50	12.77	16.9	.76	4.2	13.7	.8	5.5	7.0	.2
1935	2.22	2.08	1.97	.21	.75	.58	1.05	3.50	12.36	23.5	.53	2.7	9.6	.7	8.4	9.4	.3

Cost per Acre of Producing Oats and Barley

Farm No.	Costs									Yield bu.	Cost per bu.	Hours					
	Man labor	Horse & tractor	Seed	Twine	Thresh-ing	Man-ure	Mach-inery	Land	Total			To Harvest			Harvest		
												Man	Horse	Tractor	Man	Horse	Tractor
109	$1.90	$2.54	$1.63	$.23	$1.18	$1.22	$1.05	$3.50	$13.25	39.3	$.34	4.3	4.6	2.8	5.1	5.5	.7
123	2.23	2.11	1.59	.34	.85	1.93	1.05	3.50	13.60	38.1	.36	3.9	10.2	.7	7.3	5.1	1.1
017	1.81	1.85	1.19	.21	1.00	1.07	1.05	3.50	11.68	28.3	.41	3.4	14.3	-	5.6	3.5	.7
139	1.62	1.88	.73	.24	.84	1.67	1.05	3.50	11.53	27.9	.41	3.0	8.5	.8	5.1	8.3	-
149	1.31	1.85	1.29	.18	.52	1.38	1.05	3.50	11.08	22.0	.50	3.0	11.9	.6	3.6	2.6	.8
229	1.91	1.91	.93	.20	.71	1.64	1.05	3.50	11.85	22.1	.54	5.1	14.3	.8	4.4	4.6	-
169	2.00	2.16	1.58	.14	.62	2.27	1.05	3.50	13.32	15.4	.86	5.6	20.1	-	4.4	6.9	-
Avg. 1936	1.83	2.04	1.28	.22	.82	1.59	1.05	3.50	12.33	27.5	.45	4.0	12.0	.8	5.1	5.2	.5
1935	1.52	1.90	2.00	.16	.67	.35	1.05	3.50	11.15	21.3	.52	3.3	12.6	.5	4.3	4.0	.5

Cost per Acre of Corn Husked from Standing Stalks

Farm No.	Costs							Yield bu.	Cost per bu.	Hours					
										To Harvest			Harvest		
	Man labor	Horse & tractor	Seed	Manure	Machinery	Land	Total cost			Man	Horse	Tractor	Man	Horse	Tractor
123	$4.07	$3.05	$1.49	$3.30	$1.55	$3.50	$16.96	47.9	$.35	11.3	20.6	.8	9.1	12.2	-
133	3.86	4.28	.92	2.43	1.55	3.50	16.54	42.6	.39	9.3	19.0	2.0	10.0	18.5	-
027	4.64	4.75	.43	3.27	1.55	3.50	18.14	44.1	.41	11.5	26.9	1.4	11.7	21.2	-
226	3.54	3.67	.58	2.31	1.55	3.50	15.15	30.5	.50	9.3	14.2	2.7	8.4	14.5	-
219	4.24	3.46	.46	3.21	1.55	3.50	16.42	32.8	.50	11.7	23.2	1.0	9.5	13.5	-
229	5.78	3.67	.51	1.36	1.55	3.50	16.37	28.2	.58	15.2	25.5	1.1	13.7	13.5	-
149	5.65	5.61	.61	5.07	1.55	3.50	21.99	34.7	.63	12.3	32.0	1.8	15.9	26.9	-
118	4.19	4.00	1.10	4.82	1.55	3.50	19.16	25.0	.77	12.4	24.5	2.0	8.5	13.2	-
111	4.40	3.58	.58	.47	1.55	3.50	14.08	16.7	.84	11.7	24.0	.9	10.3	13.7	-
169	5.83	5.50	.90	5.00	1.55	3.50	22.28	11.7	1.90	13.7	33.0	.6	15.5	31.0	-
Avg.															
1936	4.62	4.16	.76	3.12	1.55	3.50	17.71	31.4	.56	11.8	24.3	1.4	11.3	17.8	-
1935	4.45	4.40	.42	1.80	1.74*	3.50	16.31	38.1	.43	11.8	28.1	1.1	10.4	17.0	.3

*Includes $.19 for use of mechanical picker.

Cost per Acre of Corn Cut and Shredded

Farm No.	Costs										Net cost	Yield bu.	Cost per bu.	Hours					
														To Harvest			Harvest		
	Man labor	Horse & tractor	Seed	Twine	Shredder	Manure	Machinery	Land	Total	Stover credit				Man	Horse	Tractor	Man	Horse	Tractor
133	$4.68	$4.50	$.89	$.32	$1.61	$2.58	$2.50	$3.50	$20.58	$4.29	$16.29	49.6	$.33	8.9	18.4	1.9	14.3	22.2	-
123	6.88	4.66	.42	.28	2.47	3.30	2.50	3.50	24.01	2.88	21.13	47.1	.45	11.2	20.7	.8	23.2	30.6	-
139	3.91	3.30	.91	.30	1.83	3.94	2.50	3.50	20.19	2.30	17.89	35.4	.51	8.1	23.1	.2	11.4	16.8	-
219	5.47	4.12	.38	.19	2.32	4.72	2.50	3.50	23.20	1.55	21.65	41.0	.53	13.1	22.6	2.1	14.3	15.9	-
109	3.35	3.49	.42	.22	.75	3.08	2.50	3.50	17.31	2.00	15.31	23.6	.65	8.1	12.3	2.9	8.7	13.4	-
169	5.77	4.81	.91	.31	1.73	5.06	2.50	3.50	24.59	1.40	23.19	32.8	.71	13.8	33.5	.6	15.0	21.7	-
014	3.63	3.97	.55	.24	1.16	1.23	2.50	3.50	16.78	2.40	14.38	17.0	.85	9.8	36.1	.2	8.4	11.9	-
121	3.49	3.56	.42	.13	.92	.56	2.50	3.50	15.08	1.34	13.74	15.9	.86	10.2	19.9	1.6	7.2	11.3	-
119	4.48	4.06	.71	.35	1.11	3.84	2.50	3.50	20.55	2.25	18.30	20.3	.90	11.6	28.8	1.2	10.8	12.5	-
179	3.83	3.50	.72	.30	1.10	3.29	2.50	3.50	18.74	1.78	16.96	14.7	1.15	9.0	20.4	1.1	10.1	16.4	-
111	6.10	4.03	.56	.10	1.35	1.43	2.38	3.50	19.45	.86	18.59	10.0	1.86	13.4	28.7	.1	17.1	20.5	-
Avg.																			
1936	4.68	4.00	.63	.25	1.49	3.00	2.49	3.50	20.04	2.10	17.94	27.9	.64	10.6	24.0	1.2	12.8	17.6	-
1935	4.84	4.08	.48	.27	1.74	2.48	2.50	3.50	19.89	1.18	18.71	32.3	.58	11.9	28.1	.9	12.2	16.4	-

Cost per Acre of Producing Corn Silage

Farm No.	Costs									Corn* credit	Net cost	Yield ton	Cost per ton	Hours					
														To Harvest			Harvest		
	Man labor	Horse & tractor	Seed	Twine	Cutter	Manure	Machinery	Land	Total					Man	Horse	Tractor	Man	Horse	Tractor
229	$5.01	$3.84	$.52	$.41	$1.89	$1.37	$2.50	$3.50	$19.04	$11.90	$7.14	7.4	$.96	15.2	25.5	1.1	9.8	15.6	-
109	3.04	3.43	.49	.21	1.68	3.08	2.50	3.50	17.93	6.63	11.30	5.5	2.05	8.1	12.3	2.8	7.1	12.8	-
169	4.69	4.65	.92	.31	1.98	5.10	2.50	3.50	23.65	9.16	14.49	6.3	2.30	14.0	33.8	.6	9.4	19.4	-
139	3.39	3.41	.90	.28	2.91	3.94	2.50	3.50	20.83	3.75	17.08	7.2	2.37	8.2	23.2	.2	8.8	18.2	-
133	4.11	4.44	.90	.31	2.38	2.27	2.50	3.50	20.41	3.98	16.43	6.6	2.49	9.5	19.6	2.1	11.1	18.9	-
027	3.58	4.02	.41	.15	2.00	3.27	2.50	3.50	19.43	6.92	12.51	4.9	2.55	11.4	26.7	1.4	6.5	12.5	-
119	3.70	4.05	.72	.36	1.92	3.88	2.50	3.50	20.63	1.23	19.40	7.2	2.69	11.7	29.1	1.2	6.8	11.8	-
226	3.87	3.49	.67	.27	3.29	1.98	2.50	3.50	19.57	-	19.57	6.6	2.97	9.0	15.9	2.7	10.4	11.1	-
149	4.72	4.33	.59	.44	1.86	6.62	2.50	3.50	24.56	6.94	17.62	5.6	3.15	12.7	31.8	1.7	10.9	11.4	-
017	4.07	4.06	.25	.16	2.20	2.88	2.50	3.50	19.62	1.18	18.44	5.8	3.18	12.7	29.5	.9	7.7	13.9	-
123	4.61	3.78	.36	.32	2.37	2.89	2.50	3.50	20.33	1.68	18.65	5.6	3.33	12.9	29.9	.2	10.2	15.8	-
219	4.86	4.26	.38	.18	1.83	4.71	2.50	3.50	22.22	4.50	17.72	5.0	3.54	13.2	22.7	2.2	11.1	17.1	-
179	3.56	3.65	.71	.30	1.87	3.29	2.50	3.50	19.38	3.66	15.72	4.2	3.74	9.5	21.4	1.2	8.3	17.0	-
014	3.13	3.87	.54	.21	1.71	1.73	2.50	3.50	17.19	.27	16.92	4.5	3.76	9.9	35.4	.2	5.7	11.0	-
121	2.77	3.24	.68	.13	1.83	3.42	2.50	3.50	18.07	-	18.07	4.6	3.93	6.4	12.1	1.8	7.5	14.1	-
016	4.85	5.56	.65	.22	1.81	4.49	2.50	3.50	23.58	4.58	19.00	4.8	3.96	17.8	39.5	2.2	6.4	12.2	-
111	3.50	3.27	.56	.13	1.97	1.71	2.50	3.50	17.14	-	17.14	4.0	4.29	11.2	27.7	-	6.3	13.1	-
129	4.39	4.95	1.65	.14	1.81	1.09	2.50	3.50	20.03	2.44	17.59	4.1	4.29	15.8	32.7	2.0	6.1	12.9	-
118	4.58	4.38	1.12	.50	2.04	4.82	2.50	3.50	23.44	1.14	22.30	5.0	4.46	12.7	25.0	2.0	10.2	17.0	-
189	3.41	4.00	1.57	.16	2.02	3.35	2.50	3.50	20.51	1.30	19.21	4.0	4.80	7.8	11.4	2.7	9.1	16.3	-
018	4.02	4.08	.56	.12	1.95	2.07	2.50	3.50	18.80	1.00	17.80	3.4	5.24	12.5	32.7	.6	7.6	13.4	-
159	2.38	3.25	1.10	.39	1.70	4.20	2.50	3.50	19.02	.84	18.18	3.2	5.68	6.1	7.7	2.7	5.8	10.5	-
Avg.																			
1936	3.92	4.00	.74	.26	2.05	3.28	2.50	3.50	20.25	3.32	16.93	5.2	3.26	11.3	24.8	1.5	8.3	14.4	-
1935	4.34	4.06	.64	.34	2.40	2.41	2.50	3.50	20.19	.80	19.39	7.4	2.62	10.1	24.0	1.1	11.6	19.0	-

*Credit for corn snapped off or husked off by binder.

Cost per Acre of Producing Alfalfa Hay

Farm no.	Costs							Yield tons	Cost per ton	Hours										
	Man labor	Horse & tractor	Seed	Manure	Machinery	Land	Total			First Cutting			Second Cutting				Third Cutting			
										Man	Horse	Tractor	% cut	Man	Horse	Tractor	% cut	Man	Horse	Tractor
219	$3.30	$2.15	$1.20	$1.04	$1.50	$3.50	$12.69	5.4	$2.35	6.7	9.7	-	1.00	5.4	10.5	-	1.00	4.5	6.6	-
123	2.63	1.36	1.20	2.26	1.05	3.50	12.00	2.8	4.29	8.4	9.1	-	1.00	4.8	7.8	-	-	-	-	-
027	2.13	1.60	1.20	1.56	1.05	3.50	11.04	2.3	4.96	6.4	12.5	-	1.00	4.3	7.5	-	-	-	-	-
226	1.98	1.31	1.20	1.61	1.25	3.50	10.85	2.1	5.17	5.8	8.6	-	1.00	2.9	5.4	-	.44	1.4	2.3	-
014	1.72	1.01	1.20	1.56	1.05	3.50	10.04	1.8	5.58	4.9	6.0	-	1.00	3.7	6.7	-	-	-	-	-
159	2.61	3.05	1.20	.85	1.36	3.50	12.57	1.8	6.98	5.8	7.1	.9	1.00	3.7	6.0	.9	.70	3.6	3.9	.8
149	2.18	1.71	1.20	2.40	1.35	3.50	12.34	1.7	7.26	4.6	9.0	-	.70	2.5	5.0	-	.56	3.7	7.4	-
139	1.18	.92	1.20	1.72	1.05	3.50	9.57	1.3	7.36	4.2	8.6	-	1.00	1.7	2.9	-	-	-	-	-
179	2.76	1.67	1.20	.88	1.27	3.50	11.28	1.5	7.52	7.6	12.3	-	1.00	3.0	3.8	-	.48	3.2	4.8	-
016	2.30	1.39	1.20	1.08	.93	3.50	10.40	1.4	7.42	7.5	9.6	-	.75	4.0	7.8	-	-	-	-	-
118	1.76	1.49	1.20	1.25	1.05	3.50	10.25	1.2	8.54	6.7	7.9	1.2	1.00	2.2	3.2	-	-	-	-	-
129	1.81	1.31	1.20	.10	1.05	3.50	8.97	1.0	8.97	5.6	10.6	-	1.00	3.5	5.7	-	-	-	-	-
111	7.80	4.42	1.20	-	1.50	3.50	18.42	1.9	9.69	15.9	26.5	-	1.00	11.0	15.2	-	1.00	12.1	13.6	-
018	2.32	1.43	1.20	.59	1.50	3.50	10.54	.8	13.18	6.3	9.2	-	1.00	2.1	4.3	-	1.00	3.2	4.5	-
121	1.02	.55	1.20	4.77	1.05	3.50	12.09	.9	13.43	2.6	3.5	-	1.00	2.6	3.3	-	-	-	-	-
Avg. 1936	2.50	1.69	1.20	1.44	1.20	3.50	11.53	1.9	6.07	6.6	10.0	.1	.96	3.8	6.3	.1	.35	2.1	2.9	.1
1935	2.80	1.86	1.10	.75	1.21	3.50	11.22	3.1	3.62	7.6	11.4	.2	.90	5.2	7.6	.2	.26	1.2	1.7	-

Cost per Acre of Producing Timothy Seed

Farm no.	Costs									Yield bu.	Cost per bu.	Hours		
	Man labor	Horse & tractor	Seed	Twine	Threshing	Manure	Machinery	Land	Total			Man	Horse	Tractor
219	$.93	$.45	$1.30	$.20	$.92	$1.04	$.20	$3.50	$8.54	7.4	$1.15	4.6	3.4	.4
229	.50	.19	1.30	.08	.19	1.37	.20	3.50	7.33	4.7	1.56	2.5	2.3	-
133	1.35	.71	1.30	.17	.83	1.16	.20	3.50	9.22	4.2	2.19	6.7	6.7	.7
121	.62	.52	1.30	.08	1.61	.56	.20	3.50	8.39	3.0	2.80	3.1	3.2	.4
129	1.04	.93	1.30	.16	.57	.10	.20	3.50	7.80	1.4	5.57	5.2	2.9	1.1
Avg. 1936	.89	.56	1.30	.14	.82	.85	.20	3.50	8.26	4.1	2.01	4.4	3.7	.5

Cost per Acre of Producing Clover Hay

Farm no.	Costs: Man labor	Horse & tractor	Seed	Hulling	Manure	Machinery	Land	Total	Credit for seed+	Net cost	Yield: Seed lb.	Hay ton	Cost per ton hay	Hours: First Cutting Man	Horse	Tractor	Second Cutting % cut	Man	Horse	Tractor
Both First and Second Cutting for Hay																				
109	$3.80	$3.03	$2.70	$ -	$ -	$.55	$3.50	$13.58	$ -	$13.58	-	2.9	$4.68	19.0	25.0	2.1	-	-	-	-
027	1.28	1.05	2.70	-	1.56	.77	3.50	10.86	-	10.86	-	1.9	5.71	5.3	10.4	-	.40	1.1	1.9	-
123	1.62	.88	2.70	-	1.93	.55	3.50	11.18	-	11.18	-	1.7	6.58	8.1	10.9	-	-	-	-	-
179	1.04	.83	2.70	-	.88	.55	3.50	9.50	-	9.50	-	1.4	6.79	5.2	10.4	-	-	-	-	-
016	1.53	.91	2.70	-	1.07	.55	3.50	10.26	-	10.26	-	1.4	7.33	7.7	11.4	-	-	-	-	-
121	1.17	1.58	2.70	-	.56	.55	3.50	10.06	-	10.06	-	1.4	7.19	5.9	6.1	1.7	-	-	-	-
219	1.13	.85	2.70	-	1.04	.55	3.50	9.77	-	9.77	-	1.2	8.14	5.7	10.2	-	-	-	-	-
229	1.47	.74	2.70	-	3.09	.55	3.50	12.05	-	12.05	-	1.4	8.60	7.3	9.2	-	-	-	-	-
159	1.09	1.21	2.22	-	.44	.57	3.50	9.03	-	9.03	-	1.0	9.03	5.5	6.8	1.0	-	-	-	-
129	1.38	.82	2.70	-	.10	.55	3.50	9.05	-	9.05	-	1.0	9.05	6.9	10.2	-	-	-	-	-
169	1.15	1.06	2.70	-	2.29	.55	3.50	11.25	-	11.25	-	.9	12.50	5.7	13.3	-	-	-	-	-
149	1.20	1.03	2.70	-	1.67	.55	3.50	10.65	-	10.65	-	.8	13.31	6.0	10.4	.4	-	-	-	-
018	1.27	.71	2.70	-	.60	.55	3.50	9.33	-	9.33	-	.7	13.33	6.3	8.9	-	-	-	-	-
189	1.22	.96	2.25	-	2.22	.55	3.50	10.70	-	10.70	-	.8	13.37	6.1	7.3	.6	-	-	-	-
Avg. 1936	1.45	1.12	2.63	-	1.25	.57	3.50	10.52	-	10.52	-	1.3	7.97	7.2	10.8	.4	.03	.1	.1	-
First Cutting for Hay, Second Cutting for Seed																				
014	2.85	1.48	2.70	.57	2.83	1.05	3.50	14.98	19.48*	4.50	64.9	2.1	*	10.5	13.1	-	1.00	3.7	5.4	-
129	2.25	1.38	2.70	.43	.17	1.05	3.50	11.48	14.04*	2.56	46.8	1.0	*	7.1	10.6	-	1.00	4.1	6.6	-
016	2.17	1.33	2.70	.30	1.08	1.05	3.50	12.13	14.08*	1.95	46.9	1.4	*	7.8	11.6	-	1.00	3.0	5.1	-
179	2.44	1.60	2.70	1.00	.88	1.05	3.50	13.17	15.00*	1.83	50.4	1.4	*	5.2	10.3	-	1.00	7.1	9.7	-
149	2.27	1.58	2.70	1.20	1.66	1.05	3.50	13.96	15.60*	1.64	52.0	.8	*	6.0	10.3	.4	1.00	5.4	6.9	-
119	2.14	1.78	2.70	.30	.80	1.05	3.50	12.27	13.38*	1.11	44.6	1.9	*	8.6	10.0	1.2	1.00	2.1	2.7	-
219	1.89	1.11	2.70	1.13	1.28	1.05	3.50	12.66	12.05	.61	40.1	1.4	.44	6.3	10.1	-	1.00	3.1	3.8	-
118	3.01	1.64	2.70	.31	1.25	1.05	3.50	13.46	11.11	2.35	37.0	1.2	1.96	10.8	9.6	1.1	1.00	4.2	3.8	-
121	1.58	1.46	2.70	.36	.56	1.05	3.50	11.21	8.57	2.64	28.6	1.3	2.03	5.4	6.8	1.0	1.00	2.5	3.0	-
133	1.70	.91	2.70	.32	1.16	1.05	3.50	11.34	5.94	5.40	19.8	1.2	4.50	6.0	8.2	-	1.00	2.4	3.2	-
159	1.71	1.75	2.70	.26	.73	1.16	3.50	11.81	4.19	7.62	14.0	1.1	6.93	5.5	4.3	1.3	1.00	3.1	3.3	.4
169	2.00	1.68	2.70	1.78	2.25	1.05	3.50	14.96	7.00	7.96	23.3	.9	8.84	5.7	13.1	-	1.00	4.3	8.0	-
018	1.48	.96	2.70	.40	.59	1.05	3.50	10.68	3.00	7.68	10.0	.8	9.60	4.6	7.2	-	1.00	2.8	4.8	-
Avg. 1936	2.12	1.44	2.70	.64	1.16	1.06	3.50	12.62	11.03	1.58	36.8	1.3	1.22	6.9	9.6	.4	1.00	3.7	5.1	-

*30¢ per pound.
*Value of seed exceeds total cost.

Note: Since hay is the usual crop harvested from clover, the value of the seed was calculated as a credit; the net cost was then divided by the yield of hay to give the cost per ton of hay.