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A Preliminary Report of CROP PRODUCTION COSTS From Data Secured in 1938 on the FARM ACCOUNTING ROUTE In WINONA COUNTY, MINNESOTA

By

S. A. Engene and G. A. Pond
Fred E. Wetherill, Routeman

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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. The cooperation of a group of the progressive farmers in the county was secured in 1935 with the aid of the county agricultural agent, Mr. H. C. Pederson. During the four-year period a few farmers have elected to discontinue the work, and others have been added to take their place. A large proportion of the farmers have contributed records for each of the four years. These farmers have kept detailed records of time spent, operations performed, seed and twine used, yields, and other pertinent crop data. The costs of production for 1938 are presented for each farm; the average costs for 1935, 1936, 1937 and the four-year period are presented at the foot of each table. 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 a 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 sources of income.

The farms studied were larger than the average of the county. The distribution of acreage of the farms studied and of all farms in the county is given in Table 1.

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Table 1
Distribution of Crop Acreage
Acres per Farm

Crop	Farms Studied				County*	Crop	Farms Studied				County
	1935	1936	1937	1938	1934		1935	1936	1937	1938	1934
No. of farms	20	24	25	23	-						
Corn	26	32	28	28	19	Alfalfa	18	14	20	19	2
Oats	35	26	27	29	17	Clover & timothy	11	22	17	14	8
Barley	51	38	27	28	15	Other hay	8	5	4	7	5
Wheat	11	8	11	10	2	Other crops	3	14	7	11	6
Other grains	22	20	16	10	7	Total crop acreage	185	179	157	156	81
						Total acreage	334	301	273	278	170

* 1935 United States Census of Agriculture.

Soil Erosion a Problem

Soil erosion control is a definite problem on most of the farms studied. In fact, this area was selected because it offered an opportunity to study the effect of erosion control methods on farm organization and the cost of farm operation. A few fairly level farms were included for purposes of comparison. Most of the operators of the farms subject to erosion are cooperating with the Federal Soil Conservation Service in an erosion control program. The changes in field arrangements and cropping practices specified by that program were begun in 1936, and were almost completed in 1937. Difficulties in obtaining satisfactory stands of grass seedings has hindered the completion of the changes. The possible effects of these changes should be considered in comparing the crop statements for the four years.

The Crop Seasons of 1935, 1936, 1937 and 1938

Heavy precipitation, plus the moisture from the winter snows on unfrozen ground, provided moisture for good yields in 1935. (See Table 3.) Heavy summer rains, however, interfered with the curing of hay and drying of grain in the shock. Rainfall was satisfactory during the spring of 1936, but scant rains and high temperatures during July reduced the yields of all crops. Rainfall was again satisfactory in the spring of 1937, but scant rains and high temperatures during the early part of July again reduced the yield of the second cutting of hay.

Table 3
Weather Conditions---Rainfall and Temperature*

Month	Rainfall (inches)					Mean Temperature (degree F.)				
	1935	1936	1937	1938	Normal	1935	1936	1937	1938	Normal
April	2.34	.78	2.37	4.01	2.43	45.5	42.0	45.5	48.0	46.8
May	4.80	5.60	3.71	6.63	4.03	54.2	65.3	59.9	58.2	58.5
June	5.56	2.14	4.51	6.32	4.66	64.6	66.9	69.7	67.6	68.3
July	4.62	1.19	1.46	8.27	3.05	78.2	79.9	75.1	72.5	72.8
August	5.28	4.32	4.19	3.43	3.51	71.5	76.1	76.3	72.6	69.6
September	4.08	3.48	2.24	8.24	3.50	63.1	66.1	63.9	62.6	61.9

*"Climatological Data," Minnesota Division of United States Weather Bureau. Average of reports for Winona (weight 2) and Rochester (weight 1).

Precipitation was extremely heavy during 1938 - fifty-eight per cent above normal, and ten inches above the previous high reported by the Weather Bureau. Precipitation during the six months of April through September was seventy-four per cent above normal. Frequent rains falling after cutting reduced the quality of a large proportion of the hay, and caused a complete loss of part of it. Severe lodging and poor drying conditions caused heavy losses in both the quantity and quality of small grains harvested. Lower than normal temperatures and heavy rainfall through June and July gave the corn crop a slow start, but higher than normal temperatures and a late frost permitted the maturing of the heaviest corn crop of the four years of the study.

The dates on which a majority of the cooperating farmers began some of the major field operations are presented in Table 4. Field work began earlier and proceeded more slowly in the spring of 1935 and 1938 than in 1936 and 1937. The hay and small grain harvests began at approximately the same time each year. Silo filling began late in 1935 and 1938, the years of the heaviest rainfall, than in the other two years.

Table 4

Dates* for Starting Specified Crop Operations--Winona County

Crop operation	Year			
	1935	1936	1937	1938
Seeding small grain	April 13	April 22	April 20	April 11
Planting corn	May 17	May 13	May 19	May 21
Cutting alfalfa - 1st cutting	June 21	June 13	June 15	June 15
Cutting small grain	July 20	July 15	July 19	July 17
Cutting corn for silage	September 19	September 8	Sept. 6	Sept. 19

* The date on which the largest number of farmers started work (i.e., the mode).

METHODS OF COMPUTING DATA

The data for each farm were computed as if the farmer was a full-owner. 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 in 1935 and 1936, and at 9 cents in 1937 and 1938. Two-plow tractors were charged at 45 cents per hour in 1935, at 50 cents in 1936 and 1937, and at 55 cents in 1938; and three-plow tractors at 60 cents in 1935, at 65 cents in 1936 and 1937, and at 70 cents in 1938. Seeds were charged at cost if purchased, otherwise 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 total manuring charge was allocated to the land covered and the balance was prorated on an acre basis to the remaining land normally receiving manure. Fifty per cent of the value of commercial fertilizer was charged against the crop in the year of application, twenty-five per cent the second year, and twenty-five per cent the third year. Flat charges per acre were made for seed for hay crops, for the use of machinery, and for land. The cost of power was included with the cost of thresher, shredder, and silo filler.

Many of the costs used in these calculations are not out-of-pocket cash 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 used safely in comparison between farms.

Cost per Acre of Producing Barley

Farm No.	Costs									Yield bu.	Cost per bu.	Labor					
	Man labor	Horse & Tractor	Seed	Twine	Thresh-ing	Manure	Mach-inery	Land	Total			To Harvest			Harvesting		
												Man	Horse	Tractor	Man	Horse	Tractor
149	$2.05	$2.36	$1.72	$ .27	$1.04	$1.48	$1.05	$3.50	$13.47	34.5	$.39	2.8	6.6	1.2	7.5	8.0	.3
017	3.03	2.57	1.47	.36	1.24	2.34	1.05	3.50	15.56	39.7	.39	4.6	18.0	---	10.5	10.6	---
139	2.15	2.18	1.96	.24	1.32	2.31	1.05	3.50	14.71	35.8	.41	3.4	13.5	---	7.4	10.7	---
119	1.32	2.12	1.46	.19	.33	1.31	1.05	3.50	11.28	23.3	.48	2.9	6.8	1.2	3.7	1.7	.7
143	2.47	2.80	1.48	.22	.80	1.02	1.05	3.50	13.34	26.8	.50	4.8	19.0	---	7.5	5.1	.9
189	1.95	2.55	1.43	.24	.95	4.10	1.05	3.50	15.77	31.6	.50	2.9	4.5	1.7	6.8	5.4	.7
123	1.95	2.04	1.92	.28	.79	3.85	1.05	3.50	15.38	30.0	.51	6.4	3.9	.5	3.4	4.6	1.8
118	2.06	2.47	1.49	.26	.79	1.89	1.05	3.50	13.51	26.3	.51	3.7	8.0	1.8	6.6	4.2	.7
028	1.25	1.59	1.50	.21	.63	1.35	1.05	3.50	11.08	21.0	.53	2.6	3.3	1.7	3.7	4.0	---
226	2.95	2.48	2.25	.18	.78	3.27	1.05	3.50	16.46	31.1	.53	2.2	1.6	1.5	12.6	8.3	1.4
159	1.97	2.85	1.07	.14	.69	1.12	1.05	3.50	12.39	23.1	.54	2.7	1.1	2.4	7.1	7.2	.6
229	1.99	2.00	.96	.21	.74	3.00	1.05	3.50	13.45	24.5	.55	3.4	2.5	2.5	6.6	4.4	---
018	2.24	2.83	1.56	.15	.75	1.90	1.05	3.50	13.98	24.9	.56	4.8	16.0	1.0	6.4	9.5	---
024	1.56	2.75	2.37	.19	1.46	.53	1.05	3.50	13.41	23.4	.57	2.1	1.8	1.6	5.7	4.0	1.6
129	1.52	2.36	2.07	.21	.63	1.41	1.05	3.50	12.75	20.9	.61	3.1	3.9	2.1	4.5	5.8	---
210	1.78	2.03	1.70	.28	.66	2.58	1.05	3.50	13.58	21.9	.62	2.6	2.2	2.1	6.3	4.6	.5
014	1.54	2.32	1.63	.25	.59	1.27	1.05	3.50	12.15	19.5	.62	3.1	8.9	1.1	4.6	8.0	---
179	1.95	2.38	1.38	.16	.56	1.25	1.05	3.50	12.23	18.8	.65	4.1	11.7	1.4	5.6	4.4	.3
027	1.64	1.94	1.66	.21	.56	2.09	1.05	3.50	12.65	18.5	.68	2.5	1.8	1.9	5.7	3.1	.8
116	1.14	1.45	1.71	.14	.44	.65	1.05	3.50	10.08	14.6	.69	2.0	2.6	1.4	3.7	3.0	.3
169	2.00	2.48	1.39	.15	.57	2.49	1.05	3.50	13.63	19.1	.71	4.7	9.4	1.9	5.3	6.6	---
Average																	
1938	1.93	2.31	1.63	.21	.78	1.96	1.05	3.50	13.37	25.2	.53	3.4	7.0	1.4	6.2	5.9	.5
1937	1.93	2.23	2.41	.30	.77	1.68	1.05	3.50	13.87	26.2	.53	3.4	7.7	1.4	6.2	6.2	.4
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
Four years	1.77	2.11	1.93	.21	.66	1.43	1.05	3.50	12.66	22.2	.57	3.4	8.8	1.2	5.4	5.6	.4

Cost per Acre of Producing Oats

Farm No.	Costs									Yield bu.	Cost per bu.	Labor					
	Man labor	Horse & tractor	Seed	Twine	Thresh-ing	Manure	Mach-inery	Land	Total			To Harvest			Harvesting		
												Man	Horse	Tractor	Man	Horse	Tractor
139	$2.19	$1.99	$ .89	$.24	$1.97	$2.30	$1.05	$3.50	$14.13	53.7	$.26	3.3	11.8	---	7.7	10.3	---
014	1.55	2.05	.93	.25	1.33	1.54	1.05	3.50	12.20	44.2	.28	2.8	8.4	.9	4.9	7.1	---
149	2.60	3.24	.83	.24	1.58	2.26	1.05	3.50	15.30	52.7	.29	3.1	6.3	1.6	9.9	7.5	1.3
017	2.55	2.27	.84	.26	1.44	2.30	1.05	3.50	14.21	46.4	.31	4.3	17.4	---	8.4	7.8	---
119	1.54	2.22	.51	.20	.39	1.78	1.05	3.50	11.19	33.7	.33	2.9	7.7	1.0	4.8	3.1	.8
210	1.75	2.30	.79	.26	1.10	2.58	1.05	3.50	13.33	36.7	.36	2.7	2.1	2.2	6.0	4.5	.9
226	2.78	2.68	.91	.18	1.13	2.55	1.05	3.50	14.78	37.9	.39	3.9	5.4	2.0	10.0	6.5	.9
143	2.74	3.05	.83	.17	.98	1.02	1.05	3.50	13.34	32.8	.41	5.3	20.9	---	8.4	5.6	.9
118	1.99	2.36	.90	.26	.87	1.27	1.05	3.50	12.20	29.0	.42	3.5	7.7	1.7	6.4	3.9	.7
027	2.49	2.52	1.00	.22	.98	2.18	1.05	3.50	13.94	32.7	.43	3.3	2.7	2.4	9.1	5.4	.8
159	1.39	2.10	.94	.14	.75	1.21	1.05	3.50	11.08	24.9	.44	2.3	1.1	2.0	4.7	3.7	.4
129	1.39	2.39	.92	.17	.74	1.14	1.05	3.50	11.30	24.4	.46	2.9	3.5	2.0	4.1	7.3	---
116	1.09	1.26	.77	.20	.56	.30	1.05	3.50	8.73	18.6	.47	1.8	2.1	1.3	3.7	2.0	.3
018	2.29	2.77	.98	.17	.79	2.07	1.05	3.50	13.62	26.3	.52	4.7	12.9	1.4	6.8	9.3	---
169	1.75	2.18	.95	.14	.67	1.46	1.05	3.50	11.70	22.4	.52	4.1	8.9	1.6	4.6	5.9	---
179	2.34	2.88	1.16	.18	.74	.98	1.05	3.50	12.83	24.5	.52	5.1	18.5	1.0	6.6	2.4	.8
028	1.69	1.79	1.05	.20	.60	1.69	1.05	3.50	11.57	20.0	.58	2.1	2.6	1.3	6.3	9.1	---
Average																	
1938	2.00	2.35	.89	.20	1.00	1.68	1.05	3.50	12.67	33.0	.38	3.4	8.2	1.3	6.6	6.0	.5
1937	1.78	2.16	1.29	.29	1.26	1.78	1.05	3.50	13.11	42.4	.31	3.4	8.6	1.2	5.5	6.2	.2
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
Four years	1.77	2.15	1.10	.21	1.00	1.33	1.05	3.50	12.11	34.0	.36	3.5	10.2	1.1	5.3	5.7	.3

Cost per Acre of Producing Winter Wheat

Farm No.	Costs									Yield bu.	Cost per bu.	Labor					
												To Harvest			Harvesting		
	Man labor	Horse & tractor	Seed	Twine	Thresh-ing	Manure	Mach-inery	Land	Total			Man	Horse	Tractor	Man	Horse	Tractor
018	$3.41	$2.80	$1.87	$.12	$.54	$1.84	$1.05	$3.50	$15.13	17.9	$.85	4.5	17.9	---	12.6	13.3	---
179	2.13	2.55	1.16	.13	.40	1.27	1.05	3.50	12.19	13.3	.92	4.5	8.5	2.2	6.1	6.1	---
129	1.48	1.90	1.61	.12	.34	1.13	1.05	3.50	11.13	11.2	.99	2.8	6.2	1.2	4.6	5.9	---
119	1.79	1.94	2.74	.19	.48	.91	1.36	3.50	12.89	12.3	1.05	2.5	7.1	.7	6.4	5.8	.4
189	1.84	2.42	1.08	.21	.41	4.25	1.05	3.50	14.76	13.8	1.07	2.7	2.1	2.1	6.5	4.5	.5
159	1.37	3.10	1.66	.10	.33	.74	1.05	3.50	11.87	11.0	1.08	3.9	---	3.6	2.9	2.8	.5
143	1.99	2.22	1.54	.17	.28	.31	1.05	3.50	11.06	9.5	1.16	4.2	16.5	---	5.7	2.6	.7
014	1.52	1.83	1.25	.22	.27	1.06	1.05	3.50	10.70	9.0	1.19	2.3	4.6	1.1	5.3	7.3	---
210	1.96	2.31	1.68	.25	.34	2.58	1.05	3.50	13.67	11.2	1.22	2.9	2.0	2.4	6.9	4.2	.8
027	2.20	2.22	1.47	.27	.32	1.97	1.05	3.50	13.00	10.5	1.24	3.1	3.3	1.9	7.9	5.7	.7
028	2.50	4.25	2.80	.16	.39	1.27	1.66	3.50	16.53	13.1	1.26	7.7	6.7	5.7	4.8	5.6	---
118	1.34	1.70	1.67	.23	.27	1.71	1.05	3.50	11.47	9.0	1.28	2.0	1.5	1.6	4.7	3.5	.7
116	2.31	2.17	1.60	.15	.27	.30	1.05	3.50	11.35	8.8	1.29	2.4	1.4	2.1	9.2	5.7	.7
139	2.58	3.10	1.64	.23	.47	2.30	1.05	3.50	14.87	11.2	1.33	4.9	19.5	---	8.0	15.0	---
169	1.72	2.20	1.95	.08	.14	2.49	1.05	3.50	13.13	4.7	2.79	4.2	9.1	1.7	4.4	5.1	---
Average																	
1938	2.01	2.45	1.71	.18	.35	1.61	1.11	3.50	12.92	11.1	1.16	3.6	7.1	1.8	6.4	6.2	.3
1937	1.84	2.17	2.32	.24	.57	1.56	1.05	3.50	13.25	16.9	.78	3.6	9.9	1.0	5.6	6.0	.3
1936	1.94	2.31	1.95	.16	.67	1.08	1.16	3.50	12.77	16.8	.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
Four years	2.00	2.25	1.99	.20	.59	1.21	1.09	3.50	12.83	17.1	.75	3.5	10.0	1.1	6.5	7.2	.3

Cost per Acre of Producing Oats and Barley

Farm No.	Costs									Yield bu.	Cost per bu.	Labor					
												To Harvest			Harvesting		
	Man labor	Horse & tractor	Seed	Twine	Thresh-ing	Manure	Mach-inery	Land	Total			Man	Horse	Tractor	Man	Horse	Tractor
017	$2.61	$2.34	$1.36	$.27	$1.69	$2.19	$1.05	$3.50	$15.01	54.2	$.28	4.4	18.3	---	8.6	7.7	---
109	2.07	2.46	1.33	.24	1.12	2.26	1.05	3.50	14.02	37.1	.38	3.3	4.1	2.0	7.0	5.5	.9
229	3.39	3.01	1.07	.15	1.37	2.58	1.05	3.50	16.12	42.7	.38	4.8	9.3	2.2	12.2	11.0	---
123	1.93	1.90	1.17	.22	.86	2.15	1.05	3.50	12.78	30.1	.42	2.5	1.6	1.6	7.2	4.9	.8
139	1.66	1.91	1.25	.21	1.17	2.29	1.05	3.50	13.04	27.7	.47	3.0	12.0	---	5.3	9.2	---
143	2.00	2.47	1.31	.23	.40	.60	1.05	3.50	11.56	13.4	.86	4.9	19.8	---	5.1	1.9	.7
Average																	
1938	2.27	2.35	1.25	.22	1.10	2.01	1.05	3.50	13.75	34.2	.40	3.8	10.8	1.0	7.6	6.7	.4
1937	2.03	2.26	2.13	.27	1.40	1.64	1.05	3.50	14.28	40.2	.36	3.9	9.3	1.3	6.1	5.6	.4
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
Four years	1.91	2.14	1.67	.22	1.00	1.39	1.05	3.50	12.88	30.8	.42	3.7	11.2	.9	5.8	5.4	.5

Cost per Acre of Producing Corn (Husked)

Farm No.	Costs								Yield bu.	Cost per bu.	Labor					
	Man labor	Horse & tractor	Seed	Husker	Manure	Machinery	Land	Total			To Harvest			Harvesting		
											Man	Horse	Tractor	Man	Horse	Tractor
159	$2.07	$4.30	$.37	$1.00	$1.42	$1.55	$3.50	$14.21	62.2	$.23	6.7	10.9	2.6	3.7	2.2	1.8
116	2.64	4.05	.72	---	.97	1.55	3.50	13.43	57.5	.23	6.3	5.8	3.5	6.9	6.3	1.9
139	4.86	4.21	.92	---	3.73	1.55	3.50	18.77	75.5	.25	9.4	26.1	---	14.9	20.6	---
028	4.80	4.00	.74	---	1.26	1.55	3.50	15.85	62.3	.25	7.1	15.7	1.1	16.9	20.6	---
024	2.00	4.50	.18	.72	1.92	1.55	3.50	14.37	55.2	.26	5.3	1.5	4.6	4.7	6.1	.9
123	3.16	4.07	.71	1.00	4.38	1.55	3.50	18.37	67.0	.27	5.2	8.1	3.4	10.6	16.4	---
018	5.03	6.50	1.56	---	---	1.55	3.50	18.14	65.6	.28	15.6	42.0	1.8	9.6	19.2	---
226	3.79	4.15	.30	---	3.87	1.55	3.50	17.16	61.3	.28	6.7	4.4	4.2	12.2	15.8	---
210	1.98	3.15	.65	1.00	7.26	1.55	3.50	19.09	64.6	.30	6.9	6.0	3.2	3.0	3.5	1.0
111	6.29	5.65	.21	---	1.13	1.55	3.50	18.33	60.2	.30	14.1	40.4	---	17.4	22.3	---
118	4.88	5.51	1.17	---	3.59	1.55	3.50	20.20	61.4	.33	11.4	20.5	2.4	13.0	26.0	---
229	5.45	5.20	.59	---	3.23	1.55	3.50	19.52	58.4	.33	15.1	21.5	2.1	12.1	23.7	---
119	2.44	5.18	.88	.74	2.89	1.55	3.50	17.18	50.5	.34	7.5	13.0	3.8	4.7	6.1	1.2
027	4.16	6.12	.95	---	3.40	1.55	3.50	19.68	55.3	.36	10.4	10.3	6.2	10.4	19.7	---
179	3.59	5.15	.60	1.00	6.45	1.55	3.50	21.84	54.9	.40	12.3	29.0	2.1	5.7	8.2	1.2
129	3.09	6.49	1.00	1.00	4.64	1.55	3.50	21.27	50.5	.42	9.0	10.8	4.2	6.4	7.5	2.7
189	5.41	5.96	.33	---	10.77	1.55	3.50	27.52	57.8	.48	11.5	19.5	2.7	15.6	26.0	---
143	8.72	8.23	1.29	---	6.38	1.55	3.50	29.67	46.6	.64	26.9	37.9	---	16.7	49.5	.5
Average																
1938	4.13	5.13	.73	.36	3.74	1.55	3.50	19.14	59.3	.32	10.4	18.0	2.7	10.3	16.6	.6
1937	4.01	4.36	.67	.28	2.26	1.55	3.50	16.63	46.0	.36	9.7	17.3	2.5	10.3	14.3	.3
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	17.3	---
1935	4.45	4.40	.42	.19	1.80	1.55	3.50	16.31	38.1	.43	11.8	28.1	1.1	10.4	17.0	.3
Four years	4.30	4.51	.65	.21	2.73	1.55	3.50	17.45	43.7	.40	10.9	21.9	1.9	10.6	16.3	.3

Cost per Acre of Producing Corn (Shredded)

Farm No.	Costs									Stover Credit	Net Cost	Yield bu.	Cost per bu	Labor					
														To Harvest			Harvesting		
	Man labor	Horse & tractor	Seed	Twine	Shredder	Manure	Machinery	Land	Total					Man	Horse	Tractor	Man	Horse	Tractor
014	$4.69	$5.89	$1.01	$.42	$1.75	$1.77	$2.50	$3.50	$21.53	$5.07	$16.46	66.6	$.25	10.3	28.5	2.6	13.1	16.7	---
139	5.30	4.98	.57	.54	3.80	4.87	2.50	3.50	26.06	4.72	21.34	75.7	.28	10.7	31.2	---	15.8	24.1	---
116	6.23	6.00	.57	.34	2.16	.93	2.50	3.50	22.23	4.01	18.22	57.5	.32	10.6	11.4	4.8	20.6	26.0	---
018	6.31	5.25	.97	.40	2.12	3.05	2.50	3.50	24.10	3.33	20.77	65.0	.32	9.9	18.2	1.9	21.7	28.3	---
149	5.18	5.89	.29	.58	1.33	2.02	2.50	3.50	21.29	2.61	18.68	51.2	.36	8.3	19.1	2.1	17.6	23.1	.9
119	4.31	4.89	.88	.37	1.04	4.12	2.50	3.50	21.61	3.03	18.58	50.5	.37	7.5	13.0	3.7	14.0	12.3	---
017	5.90	4.20	.18	.56	2.28	3.77	2.50	3.50	22.89	1.75	21.14	55.0	.38	9.7	23.8	.2	19.8	21.6	---
169	5.99	5.29	.31	.48	1.67	3.80	2.50	3.50	23.54	2.56	20.98	49.1	.43	15.5	34.5	1.5	14.5	15.2	---
109	5.17	4.23	1.24	.45	1.71	9.58	2.50	3.50	28.38	2.66	25.72	59.7	.43	8.5	16.8	1.5	17.3	21.4	---
123	7.43	5.73	.71	.51	1.82	4.38	2.50	3.50	26.58	1.88	24.70	53.6	.46	10.6	16.4	2.3	26.5	33.1	---
118	7.03	4.93	.97	.42	1.89	4.80	2.50	3.50	26.04	5.81	20.23	40.3	.50	11.1	18.1	2.7	24.1	20.5	---
111	6.33	4.58	.19	.28	2.97	2.54	2.50	3.50	22.89	2.46	20.43	38.3	.53	11.7	31.8	---	20.0	19.1	---
Average																			
1938	5.82	5.15	.66	.45	2.04	3.80	2.50	3.50	23.92	3.32	20.60	55.2	.37	10.4	21.9	1.9	18.7	21.8	.1
1937	5.74	4.93	.52	.49	2.23	3.48	2.50	3.50	23.39	2.69	20.70	49.0	.42	11.1	22.8	1.8	17.6	21.2	---
1936	5.18	4.34	.64	.25	1.49	3.08	2.48	3.50	20.96	2.08	18.88	27.5	.69	10.5	24.1	1.2	15.4	21.8	---
1935	5.92	4.83	.48	.27	1.74	2.48	2.50	3.50	21.72	1.18	20.54	32.3	.64	11.9	28.1	.9	17.6	25.8	---
Four years	5.66	4.81	.58	.37	1.87	3.21	2.50	3.50	22.50	2.31	20.18	41.0	.49	11.0	24.2	1.5	17.3	22.7	---

Cost per Acre of Producing Corn Silage

Farm No.	Costs									Corn Credit	Net Cost	Yield tons	Cost per ton	Labor					
	Man Labor	Horse & tractor	Seed	Twine	Cutter	Manure	Machinery	Land	Total					To Harvest			Harvesting		
														Man	Horse	Tractor	Man	Horse	Tractor
210	$2.56	$3.28	$.58	$.38	$1.97	$4.22	$2.50	$3.50	$18.99	$1.24	$17.75	12.5	$1.42	4.3	2.3	3.2	8.5	14.7	---
028	3.82	4.01	.95	.41	1.59	2.97	2.50	3.50	19.75	1.55	18.20	11.0	1.65	6.3	14.5	---	12.3	22.6	1.2
226	4.38	5.34	.29	.45	3.33	2.35	2.50	3.50	22.14	1.28	20.86	11.7	1.78	5.8	4.4	3.6	16.1	12.9	3.3
014	4.14	5.90	.23	.42	2.08	1.77	2.50	3.50	20.54	1.39	19.15	10.5	1.82	10.3	28.5	2.6	10.4	16.6	---
109	4.51	4.36	1.05	.44	1.97	3.17	2.50	3.50	21.50	.40	21.10	11.3	1.87	9.6	18.7	1.8	12.9	18.9	---
024	2.98	3.93	.28	.50	2.38	1.29	2.50	3.50	17.36	.67	16.69	8.2	2.04	4.0	1.3	3.3	10.9	17.1	---
119	4.74	4.49	.55	.39	2.44	4.02	2.50	3.50	22.63	.70	21.93	10.6	2.07	5.7	6.0	3.6	18.0	15.3	---
118	4.92	4.83	.82	.43	2.46	3.00	2.50	3.50	22.46	.39	22.07	10.6	2.08	9.7	17.5	1.9	14.9	24.4	---
111	4.22	3.98	.23	.34	2.43	1.40	2.50	3.50	18.60	---	18.60	8.5	2.19	9.3	25.5	---	11.7	18.7	---
229	5.50	4.53	.59	.45	2.11	3.23	2.50	3.50	22.41	.72	21.69	9.9	2.19	15.2	21.4	2.1	12.3	16.2	---
179	4.28	5.06	.60	.41	1.98	.98	2.50	3.50	19.31	1.01	18.30	8.2	2.23	12.2	29.0	2.1	9.2	14.5	---
159	2.49	3.85	.40	.29	2.00	1.49	2.50	3.50	16.52	.47	16.05	7.1	2.26	6.4	9.8	2.8	6.1	11.6	---
123	4.97	4.43	.35	.47	2.61	6.51	2.50	3.50	25.34	---	25.34	11.2	2.26	16.0	24.9	.2	8.9	14.9	1.3
129	4.59	7.22	.60	.56	2.34	7.05	2.50	3.50	28.36	.74	27.62	12.0	2.30	12.9	17.3	5.7	10.1	18.7	---
017	4.17	3.08	.37	.50	2.38	5.64	2.50	3.50	22.14	.43	21.71	9.0	2.41	8.6	14.0	.7	12.2	15.0	---
027	4.71	6.80	.36	.25	2.70	3.14	2.50	3.50	23.96	.93	23.03	9.4	2.45	10.1	10.8	5.7	13.4	17.4	2.0
018	5.17	5.13	.79	.17	2.59	2.72	2.50	3.50	22.57	.61	21.96	8.8	2.50	11.2	26.7	1.1	14.6	23.8	---
143	4.80	4.94	.24	.29	2.42	.95	2.50	3.50	19.64	.83	18.81	6.2	3.03	10.7	31.2	.4	13.3	17.6	.4
116	3.05	3.87	1.25	.39	2.08	.57	2.50	3.50	17.21	.51	16.70	5.5	3.04	6.3	5.8	3.8	9.0	14.3	---
139	4.75	4.23	.61	.32	2.37	3.81	2.50	3.50	22.09	.55	21.54	6.8	3.17	10.1	28.9	---	13.6	18.1	---
189	5.56	6.10	.32	.32	2.79	10.62	2.50	3.50	31.71	---	31.71	9.5	3.34	11.2	17.9	2.8	16.6	28.1	---
169	4.09	4.86	.39	.48	1.93	6.30	2.50	3.50	24.05	1.02	23.03	6.4	3.60	13.8	28.7	2.0	6.6	13.1	---
Average																			
1938	4.29	4.73	.54	.39	2.32	3.51	2.50	3.50	21.78	.70	21.08	9.3	2.27	9.5	17.5	2.2	11.9	17.5	.4
1937	4.07	4.48	.56	.46	2.05	2.66	2.50	3.50	20.28	1.09	19.19	8.2	2.34	10.5	20.5	2.2	9.8	15.0	.1
1936	3.92	4.00	.74	.26	2.05	3.28	2.50	3.50	20.25	3.35	16.90	5.1	3.31	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	---
Four years	4.15	4.32	.62	.36	2.21	2.97	2.50	3.50	20.63	1.49	19.14	7.5	2.55	10.4	21.7	1.8	10.4	16.5	.1

Cost per Acre of Producing Alfalfa Hay

Farm No.	Costs							Yield tons	Cost per ton	Hours								
										First Cutting			Second Cutting				Third Cutting		
	Man labor	Horse & tractor	Seed	Manure	Mach-inery	Land	Total			Man	Horse	Tractor	% cut	Man	Horse	Tractor	% cut	Man	Horse	Tractor
024	$1.86	$1.25	$1.65	$.57	$1.05	$3.50	$9.88	4.0	$2.47	5.0	6.3	.2	100	4.3	5.8	---	---	---	---	---
028	2.29	1.33	1.65	.97	1.05	3.50	10.79	3.3	3.27	6.2	8.6	---	100	5.2	6.2	---	---	---	---	---
210	2.03	1.36	1.65	2.58	1.05	3.50	12.17	3.5	3.48	5.6	7.2	.1	100	4.5	6.4	.1	---	---	---	---
014	1.62	1.19	1.65	1.00	1.05	3.50	10.01	2.7	3.71	4.4	7.6	---	100	3.7	5.6	---	---	---	---	---
139	2.82	2.05	1.65	2.28	1.05	3.50	13.35	3.6	3.71	8.1	12.7	---	100	6.0	10.1	---	---	---	---	---
143	1.74	1.43	1.65	.31	.97	3.50	9.60	2.5	3.84	4.8	5.6	.4	84	3.9	4.3	.4	---	---	---	---
109	1.60	1.50	1.65	2.18	1.12	3.50	11.55	2.6	4.44	3.8	7.1	---	100	3.6	5.9	.5	16	.6	.9	---
129	1.63	1.49	1.65	.99	1.05	3.50	10.31	2.1	4.91	4.1	8.8	---	100	4.1	7.7	---	---	---	---	---
123	1.53	1.37	1.65	2.32	.99	3.50	11.36	2.2	5.16	5.6	5.8	.8	88	2.1	1.8	.5	---	---	---	---
119	1.49	1.48	1.65	1.15	.70	3.50	9.97	1.9	5.25	5.7	7.3	.8	30	1.7	2.1	.1	---	---	---	---
226	2.05	1.45	1.65	2.50	1.05	3.50	12.20	2.2	5.54	4.7	7.2	---	100	5.6	8.9	---	---	---	---	---
149	1.40	1.48	1.65	2.17	1.19	3.50	11.39	2.0	5.70	3.1	5.7	.5	82	2.3	4.3	---	50	1.6	2.9	---
027	2.33	2.47	1.65	2.05	1.05	3.50	13.05	2.3	5.67	6.9	7.8	1.6	100	4.7	6.7	.5	---	---	---	---
018	2.36	1.69	1.65	1.87	1.17	3.50	12.24	2.0	6.12	5.6	7.5	---	100	4.4	7.8	---	28	1.8	3.4	---
159	1.15	1.75	1.65	1.19	1.05	3.50	10.29	1.6	6.43	3.6	4.7	.9	100	2.1	2.7	.6	---	---	---	---
169	1.45	1.20	1.65	2.50	1.05	3.50	11.35	1.7	6.68	3.9	7.3	---	100	3.4	6.1	---	---	---	---	---
179	1.22	1.17	1.65	1.10	1.05	3.50	9.69	1.3	7.45	5.0	8.1	.5	100	1.1	2.2	---	---	---	---	---
189	1.76	1.74	1.65	4.05	1.50	3.50	14.20	1.9	7.47	5.1	6.5	.6	100	2.3	3.2	.3	100	1.4	2.3	---
118	1.72	1.97	1.65	2.13	.93	3.50	11.90	1.4	8.50	5.0	7.7	.8	76	3.6	5.4	.6	---	---	---	---
116	1.01	.83	1.65	1.92	1.05	3.50	9.96	.8	12.45	2.9	4.0	---	100	2.2	2.6	.4	---	---	---	---
Average																				
1938	1.75	1.51	1.65	1.79	1.06	3.50	11.26	2.3	4.90	5.0	7.1	.4	91	3.5	5.3	.2	14	.3	.5	---
1937	1.81	1.48	1.60	1.79	1.06	3.50	11.24	2.1	5.35	6.3	9.2	.3	88	2.8	4.3	.1	14	.2	.3	---
1936	2.50	1.69	1.60	1.44	1.20	3.50	11.93	1.9	6.28	6.6	10.0	.2	96	3.8	6.3	.1	35	2.1	2.9	.1
1935	2.80	1.86	1.50	.75	1.21	3.50	11.62	3.1	3.75	7.6	11.4	.2	90	5.2	7.6	.2	26	1.2	1.7	---
Four years	2.22	1.63	1.59	1.44	1.13	3.50	11.51	2.4	4.79	6.4	9.5	.3	91	3.8	5.9	.2	22	1.0	1.2	---

Cost per Acre of Producing Clover and Timothy Hay

Farm No.	Costs							Yield tons	Cost per ton	Labor					
										First Cutting			Second Cutting		
	Man labor	Horse & tractor	Seed	Manure	Machinery	Land	Total			Man	Horse	Tractor	Man	Horse	Tractor
014	$1.70	$1.34	$1.60	$2.00	$1.05	$3.50	$11.19	3.1	$3.61	4.4	8.6	---	4.1	6.2	---
028	1.20	.74	1.60	2.21	1.05	3.50	10.30	1.6	6.44	3.9	5.1	---	2.1	3.2	---
149	1.31	1.49	1.60	1.74	.55	3.50	10.19	1.5	6.79	6.5	12.3	.6	---	---	---
229	1.99	1.18	1.60	1.75	1.05	3.50	11.07	1.5	7.38	5.5	7.7	---	4.4	5.5	---
159	.81	.94	1.60	---	.57	3.50	7.42	1.0	7.42	4.1	5.2	.7	---	---	---
143	1.03	.86	1.60	.31	.62	3.50	7.92	1.0	7.92	3.2	4.7	.1	2.0	2.0	.2
179	2.15	2.54	1.60	.98	.55	3.50	11.32	1.2	9.43	10.7	16.5	1.9	---	---	---
018	.79	.84	1.60	1.96	.78	3.50	9.47	1.0	9.47	2.7	4.8	.3	1.2	2.5	---
123	1.03	.87	1.60	3.53	.55	3.50	11.08	1.1	10.47	5.1	6.5	.5	---	---	---
189	1.18	.99	1.60	4.28	.55	3.50	12.10	.9	13.44	5.9	6.9	.5	---	---	---
Average															
1938	1.32	1.18	1.60	1.88	.73	3.50	10.21	2.3	4.43	5.2	7.8	.5	1.4	1.9	---
1937	1.32	1.07	1.85	1.96	.56	3.50	10.26	1.4	7.33	6.5	9.3	.4	.1	.1	---
1935	1.70	1.28	1.10	.81	.82	3.50	9.21	2.3	4.00	7.2	11.8	.2	1.3	3.2	---
Four years	1.44	1.18	1.52	1.55	.70	3.50	9.89	2.0	4.95	6.3	9.6	.4	.9	1.7	---

Cost per Acre of Producing Timothy Hay

Farm No.	Costs							Yield	Cost per ton	Hours		
	Man labor	Horse & tractor	Seed	Manure	Machinery	Land	Total			Man	Horse	Tractor
027	$1.23	$ .79	$ .75	$1.84	$ .55	$3.50	$8.66	1.9	$4.56	6.2	8.8	---
116	1.16	.88	.75	.50	.55	3.50	7.34	1.5	4.95	5.8	8.2	.2
118	1.13	1.22	.75	1.27	.55	3.50	8.42	1.3	6.48	5.6	8.9	.8
018	3.56	2.85	.75	1.84	.55	3.50	13.05	2.0	6.53	17.8	31.7	---
028	.96	.47	.75	1.26	.55	3.50	7.49	1.1	6.81	4.8	5.2	---
129	1.12	1.00	.75	.99	.55	3.50	7.91	1.0	7.91	5.6	11.2	---
210	.73	.43	.75	2.72	.55	3.50	8.68	1.0	8.68	3.7	4.8	---
169	1.42	1.27	.75	2.49	1.05	3.50	10.48	1.2	8.73	7.1	14.2	---
179	2.14	2.51	.75	3.32	.55	3.50	12.77	1.3	9.82	10.7	16.5	1.9
159	.74	1.21	.75	1.42	.36	3.50	7.98	.3	26.60	3.7	3.8	1.2
Average												
1938	1.42	1.26	.75	1.77	.58	3.50	9.28	1.3	7.14	7.1	11.3	.4
1937	1.15	.80	1.30	1.85	.54	3.50	9.14	1.2	7.62	5.7	8.6	---
2 Years	1.29	1.03	1.02	1.81	.56	3.50	9.21	1.3	7.08	6.4	10.0	.2

Cost per Acre of Producing Wild Hay

Farm No.	Costs						Yield	Cost per ton	Hours		
	Man labor	Horse & tractor	Manure	Machinery	Land	Total			Man	Horse	Tractor
179	$1.15	$1.08	$ ---	$1.05	$2.00	$5.28	1.6	$3.30	5.7	9.1	.5
116	2.17	1.74	---	.55	2.00	6.46	1.9	3.40	10.9	19.3	---
129	.75	.54	---	.55	2.00	3.84	1.1	3.49	3.7	6.0	---
014	1.10	.82	.22	.55	2.00	4.69	1.1	4.26	5.5	9.1	---
189	.73	.76	---	.55	2.00	4.04	.5	8.08	3.7	4.6	.5
Average											
1938	1.18	.99	.4	.65	2.00	4.86	1.2	4.05	5.9	9.6	.2
1937	1.08	.98	---	.55	2.00	4.61	.9	5.12	5.4	8.3	.4
1935	1.96	1.15	---	.74	2.00	5.85	1.5	3.90	9.8	14.4	---
3 Years	1.41	1.04	.1	.65	2.00	5.11	1.2	4.26	7.0	10.9	.2