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COST OF OPERATING SOME FARM MACHINES

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Minnesota Department of Education
Cooperating

Mimeographed Report No. 188
Division of Agricultural Economics
University Farm
St. Paul 1, Minnesota
March, 1951

COST OF OPERATING SOME FARM MACHINES

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According to the U. S. Census the average value of implements and machinery per farm in Minnesota increased 68 per cent from 1930 to 1945. Part of the increased value of machinery on farms is due to the higher cost of new machines purchased during the past few years. However, a considerable portion of this increased value is due to the purchase of new types of machines which were not owned by the average farmer or did not exist 20 years ago.

Many of these relatively new items of machinery are quite expensive both from the standpoint of original cost and from the standpoint of cost of operation. Farmers are faced with the problem of determining whether or not to buy these machines or hire the work on some custom basis.

Some data relative to the cost of operating combines, balers, forage choppers and corn pickers in 1950 are included in this report. The information was obtained from records kept by veterans taking on-the-farm training in the public schools in the state. (1). While the number of cases is small the data afford some basis for a comparison of costs of operation.

Combines

A statement showing the cost of operating 20 combines is shown in table 1. The costs include depreciation, interest on investment, and the cash expenses for upkeep, lubricants and fuel for auxillary motors. A charge for man labor to operate these combines and for power to pull them are not included. The annual depreciation is determined by dividing the original investment by the farmers's estimate of the length of life of the combine. Interest on investment represents 5 per cent of the average book value of the combine in 1950. The amount of interest charged therefore varies with the amount of the original investment and the amount of depreciation taken in prior years.

Each combine was in use an average of 125 hours and harvested 164 acres. In addition these farmers estimated that they spent 17 hours of time in servicing and repairing.

The data in table 2 shows the acres of small grains, soybeans, and grass and legumes combined on land operated by the owner of the combine and combined for others. Sixty-three per cent of the acres covered represents land operated by the owners of the combines; the balance represents custom work performed for others. Small grains represent 75 per cent of the crops combined, soybeans 18 per cent and the balance or 7 per cent was grass and legumes for seed.

1. The records were obtained from veterans training centers in the following schools: Albert Lea, Baudette, Canton, Little Falls, West Central School of Agriculture at Morris, New Ulm, North Branch, Princeton, Tyler, Williams and Zumbrota.

Table 1. Cost of Operating Combines, 1950

Farm no.	Size of mach.	Year purchased	New or used	Yrs. est. life	Annual depreciation	Int. on invest.	Cash up-keep	Lub. and fuel*	Total cost	Acres covered			Cost per acre	Hrs. in use	Cost per hour	Cost per mach.	
										Own land	Custom work	Total					
1	6'	1950	New	15	\$120.00	\$87.00	\$ 0	\$23.62	\$230.62	81	130	211	\$1.09	86	\$2.68		
2	5'	1946	New	8	114.60	20.08	14.50	6.25	155.43	118	8	126	1.23	157	- 99		
3	3'4"	1949	Used	5	47.00	13.23	35.17	5.00	100.40	60	5	65	1.54	108	- 93		
4	5'	1950	New	8	211.00	79.13	11.90	60.50	362.53	80	151	231	1.57	228	1- 59		
5	12'	1949	Used	10	270.00	128.25	21.40	74.53	494.18	295	0	295	1.68	173	2- 86		
6	12'	1950	New	7	306.50	99.59	29.63	61.35	497.07	182	94	276	1.80	190	2- 62		
7	6'	1947	New	10	183.20	77.86	0	66.20	327.26	101	78	179	1.83	83	3- 94		
8	12'	1939	New	20	81.00	47.03	97.83	14.00	239.86	115	0	115	2.09	55	3- 81		
9	5'9"	1950	Used	10	100.00	47.50	65.90	34.25	247.65	118	0	118	2.10	110	2- 25		
10	6'	1950	New	12	166.66	95.83	.40	30.58	293.47	126	0	126	2.33	126	2- 33		
11	5'	1950	New	8	140.80	84.48	0	85.20	310.48	110	19	129	2.41	195	1- 59		
12	8'	1948	New	10	441.00	165.38	76.57	402.56	1085.51	61	442	503	2.46	380	2- 65		
13	12'	1948	New	10	530.00	198.75	17.90	53.50	800.15	230	87	317	2.52	111	7- 21		
14	6'	1950	New	15	120.00	87.00	3.50	38.00	248.50	95	0	95	2.62	92	2- 70		
15	6'	1950	New	6	300.00	82.50	3.00	37.25	422.75	77	78	155	2.73	110	3- 84		
16	6'	1949	New	12	170.00	82.25	79.93	60.00	392.18	45	85	130	3.02	148	2- 65		
17	5'	1946	New	10	102.00	28.05	2.09	11.80	143.94	45	0	45	3.20	30	4- 80		
18	5'	1950	Used	10	105.00	49.88	7.10	7.50	169.48	34	10	44	3.85	37	4- 58		
19	5'	1948	New	10	108.00	40.85	0	.50	149.35	43	10	53	4.16	51	2- 93		
20	6'	1949	New	10	188.20	79.98	0	11.30	279.48	65	0	65	4.30	34	8- 22		
Avg.	-	-	-	1905	10	190.25	79.73	23.34	54.19	347.51	104	60	164	2.43	125	3- 26	

*Includes fuel used for auxillary motors but not fuel for tractor operating the combine.

Table 2. Acres Covered by Combines and Receipts from Custom Work

	Small grain	Soy-beans	Grass and legumes
Acres of own land combined	87.6	10.2	6.2
Acres covered in custom work	<u>35.7</u>	<u>18.9</u>	<u>5.3</u>
Total acres combined	123.3	29.1	11.5
Average custom rates charged per acre	\$ 3.52	\$ 4.07	\$ 3.62

Balers

The cost of operating 8 balers in 1950 is shown in table 3. Seven of the balers used twine and one used wire. The largest single item of expense was the cost of twine or wire. The machines were in use an average of 100 hours during the year and an additional 14 hours were spent in servicing and repairing the balers.

Forager Choppers

The cost of operating 7 forage choppers is shown in table 4. Three of the choppers were used to cut both hay and silage. Four were used to cut silage only. In addition to an average of 133 hours of actual machine use these farmers estimated that they spent 21 hours in servicing and repairing their forage choppers.

Corn Pickers

The cost of operating 15 corn pickers is presented in table 5. The annual depreciation was the largest item of expense. These farmers used their corn pickers an average of 81 hours during the fall of 1950. In addition they spent an average of 12 hours servicing and repairing the machines. They spent approximately one hour to pick an acre of corn including the time spent in servicing and repairing the corn pickers.

Miscellaneous Farm Machines

The data in table 6 shows the cost of operating 5 sprayers, 2 windrowers, one threshing machine and one corn sheller. The number of cases is too small to give a significant average.

Conclusions

Although the number of cases included in this report are too small to give significant averages of the cost of operating some of the major farm machines, the wide range in costs per acre and per hour of machine use indicates that farmers should carefully study their needs before purchasing. The data indicates that some might be ahead financially by hiring custom work rather than owning these items of machinery provided they can hire these services. Others might find it profitable to do custom work for others. In general an increase in the use of the machines will result in lower cost per acre or hour of use.

Table 3. Cost of Operating Balers, 1950

Farm no.	Year purch.	New or used	Yrs. est. life	Annual deprec-iation	Int. on invest.	Cash up-keep	Lub.&fuel for aux. motors	Twine or baling wire	Acres covered			Cost per acre	hrs. in use	Cost per hr. mach. in use	
									Total cost	Own land	Custom work				
1	1949	New	10	\$135.00	\$57.58	\$.40	\$ 5.00	\$216.00	\$413.98	365	0	365	\$1.13	220	\$1.88
2	1950	Used	10	125.00	59.38	11.00	70.00	180.00	445.38	50	229	279	1.60	110	4.05
3	1949	New	10	107.00	46.00	0	19.25	112.50	284.75	70	23	93	3.06	70	4.07
4	1948	New	7	156.71	35.26	3.07	2.00	121.50	318.54	*	*	*	*	77.5	4.11
5	1945	New	10	123.50	27.00	4.20	14.97	173.25	342.92	*	*	*	*	68	5.04
6	1950	New	15	80.00	58.00	48.50	28.00	219.25	433.75	20	157	177	2.45	81	5.35
7	1949	New	10	224.00	95.20	7.50	25.10	170.00	521.80	219	0	219	2.38	90.5	5.77
8	1950	New	15	120.00	87.00	45.90	3.85	186.12	442.87	55	105	160	2.77	71	6.24
Avg.	-	-	11	133.90	58.18	15.07	21.02	172.33	400.50	*	*	*	*	99	4.56

* Information was not reported

Table 4. Cost of Operating Forage Choppers, 1950

Farm No.	Year purch.	New or used	Yrs. est. life	Annual deprec-iation	Int. invest.	Cash up-keep	Lub., fuel for aux. motors	Total cost	Hrs. mach. in use	Cost per hour mach. in use
1	1950	New	5	\$370.00	\$83.25	\$63.00	\$3.00	\$519.25	234	\$ 2.22
2	1950	New	10	199.00	94.53	5.65	4.98	304.16	110	2.77
3	1944	New	10	140.00	24.50	193.00	5.60	363.10	123	2.95
4	1948	New	10	112.00	40.00	10.00	87.10	249.10	62	4.02
5	1949	New	6	400.00	85.00	134.10	126.00	745.10	171.5	4.34
6	1949	New	10	275.00	116.88	175.00	312.00	878.88	164.5	5.34
7	1948	New	15	225.00	149.38	32.00	30.65	437.03	69	6.33
Avg.	-	-	9	245.86	84.79	87.54	81.33	499.52	133	4.00

Table 5. Cost of Operating Corn Pickers, 1950

Farm no.	Size of mach.	Year purchased	New or used	Yrs. est. life	annual deprec-iation	Int. on invest.	Cash up-keep	Total cost	Acres covered			Cost per acre	Hrs. mach. in use	Cost per hour mach. in use
									Own land	Custom work	Total			
1	1-row	1948	Used	3	\$23.40	\$.59	\$5.70	\$29.69	35	0	35	\$.85	50	\$.59
2	1-row	1950	New	10	112.00	53.20	7.80	173.00	140	0	140	1.24	150	1.15
3	1-row	1950	New	8	123.00	46.18	2.00	171.18	75	0	75	2.28	100	1.71
4	1-row	1949	New	10	107.50	45.69	8.70	161.89	49	18	67	2.42	74	2.19
5	1-row	1946	New	5	140.00	10.50	110.22	260.72	100	0	100	2.61	125	2.09
6	1-row	1948	New	10	85.00	31.88	45.53	162.41	44	14	58	2.80	89	1.81
7	1-row	1949	Used	8	68.00	22.40	26.65	117.05	40	0	40	2.93	40	2.93
8	1-row	1949	New	10	97.50	42.56	3.00	143.06	35	0	35	4.09	70	2.04
9	1-row	1949	Used	5	90.00	15.75	3.03	108.78	20	0	20	5.44	20	5.44
10	2-row	1950	New	10	172.50	81.92	14.60	269.04	96	207	303	.89	154	1.75
11	2-row	1949	New	10	81.50	34.64	21.95	138.09	118	0	118	1.17	80	1.73
12	2-row	1949	New	8	199.00	64.68	6.60	270.28	133	60	193	1.40	91	2.97
13	2-row	1946	New	10	101.00	27.93	2.10	131.03	30	30	60	2.18	31	4.23
14	2-row	1947	Used	5	80.00	6.00	33.60	119.60	50	0	50	2.39	75	1.59
15	2-row	1949	Used	5	120.00	21.00	43.15	184.15	63	0	63	2.92	72	2.56
Avg.	-	-	-	8	106.69	33.66	22.32	162.67	68	22	90	2.37	81	2.32

151

Table 6. Cost of Operating Miscellaneous Farm Machines, 1950

Farm no.	Size of Mach.	Year purch.	New or used	Cost	Yrs. est. life	Annual depreciation	Int. on investment	Cash up-keep	Lub., spray mat-erial, etc.	Total cost	Acres covered			Cost per acre	Hrs. mach. in use	Cost per hr. mach. in use
											Own land	Custom work	Total			
Sprayers																
1	20'	1950	New	\$300	10	\$30.00	\$14.25	\$ 0	\$91.50	\$135.75	100	0	100	\$1.36	20	\$ 6.79
2	18'	1950	New	210	10	21.00	9.98	0	129.50	160.48	107	0	107	1.50	14	11.46
3	20'	1950	New	175	10	17.50	8.31	4.50	48.55	78.86	50	0	50	1.58	8.5	9.74
4	500 gal.	1947	New	720	8	90.00	20.25	25.00	29.55	164.80	47	470	517	.32	28.5	5.78
5	20'	1950	New	145	10	14.50	6.89	17.50	161.35	200.24	0	261	261	.77	49.5	4.04
Windrowers																
1	12'	1949	Used	300	10	30.00	14.25	26.25	2.50	73.00	295	0	295	.25	31	2.35
2	8'	1950	New	425	10	42.50	20.19	4.48	2.00	69.17	184	0	184	.38	88	.79
Threshing Machine																
1	28"	1948	Used	350	20	17.50	15.31	39.75	39.50	112.06	22	255	277	4.05	51	2.20
Corn Sheller																
1	-	1946	New	2200	6	366.67	82.50	34.26	71.00	554.43	-	-	-	-	44.5	12.46