

2023 Michigan State University Custom Work Rates



Steven Miller, Assistant Professor
Corey Clark, Farm Business Management Educator

Zachariah Rutledge, Assistant Professor
Florencia Colella, Farm Business Management Educator

Built on the Farm Machinery Economic Cost Estimation Spreadsheet (MACHDATA.XLSM) from:



by William F. Lazarus
Extension Economist, University of Minnesota

Custom Rate Parameters:

Skilled labor rate \$/hr = \$32.37
Unskilled labor rate \$/hr = \$21.76
Interest Rate = 5.75%
Fuel price = \$4.08
Lubrication cost = 10% of fuel

Sources:

USDA Farm Labor Report: <https://usda.library.cornell.edu/concern/publications/x920fw89s?locale=en>
USDA Farm Labor Report: <https://usda.library.cornell.edu/concern/publications/x920fw89s?locale=en>
USDA Farm Operating Loan Rate: <https://www.fsa.usda.gov/programs-and-services/farm-loan-programs/index>
AAA website for Michigan: <https://gasprices.aaa.com/?state=MI>
Added in to "power cost"

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Tractor, combine or Forage Harvester HP ¹	Net Cost of a New Power Unit ²	Annual Hours of Use	Fuel & Oil Cost Per Hour	Maintenance & Repair Cost/Hr	Depreciation Cost Per Hour	-- Overhead ³ --		Total Cost Per Year of Use	Total Cost Per Hour of Use	Diesel Use
						Cost Per Year	Cost Per Year			Gal/Hr
Tractors, Combines, and Self-Propelled Forage Harvesters (Without Heads)										
40 HP	\$28,000	400	\$7.90	\$0.94	\$2.99	\$1,528	\$3.82	\$6,258	\$15.64	1.76
60 HP	36,000	400	11.85	1.21	3.84	1,946	4.87	8,705	21.76	2.64
75 HP	59,000	400	14.81	2.09	5.98	3,168	7.92	12,317	30.79	3.30
105 HP MFWD	150,000	450	20.73	4.50	16.11	7,425	16.50	26,030	57.84	4.62
130 HP MFWD	200,000	450	25.67	6.00	21.48	9,851	21.89	33,770	75.04	5.72
160 HP MFWD	241,000	500	31.60	8.03	23.51	11,885	23.77	43,454	86.91	7.04
200 HP MFWD	355,000	500	39.49	11.83	34.63	17,403	34.81	60,382	120.76	8.80
225 HP MFWD	353,000	400	44.43	9.41	42.24	17,472	43.68	55,906	139.76	9.90
260 HP MFWD	422,000	400	51.34	6.75	50.49	20,828	52.07	64,263	160.66	11.44
310 HP 4WD	440,000	400	61.22	7.04	52.65	21,703	54.26	70,065	175.16	13.64
360 HP 4WD	402,000	400	71.09	6.43	48.10	19,855	49.64	70,105	175.26	15.84
425 HP 4WD	477,000	400	83.93	7.63	57.08	23,502	58.76	82,956	207.39	18.70
275 HP Combine	419,000	400	54.30	99.08	76.44	17,047	42.62	108,979	272.45	12.10
375 HP Combine	482,000	400	74.05	113.98	87.93	19,659	49.15	130,046	325.12	16.50
440 HP Combine	514,000	400	75.64	121.55	93.77	20,923	52.31	137,309	343.27	16.85
400 HP SP Forage Harvester Base Unit	410,000	350	43.08	57.27	36.97	22,978	65.65	71,042	202.98	9.60
625 HP SP Forage Harvester Base Unit	563,000	350	67.32	78.64	50.77	31,323	89.49	100,178	286.22	15.00

¹HP shown for the smaller tractors is PTO horsepower. Engine HP is shown for the larger tractors. PTO HP for the larger tractors runs about 87% of engine HP, and is shown in parentheses. Fuel use is estimated at 0.044 gallons of diesel fuel per hour per PTO HP.

²Net cost of a new unit assumes no trade-in. Farm machinery is exempt from sales tax in Michigan, so no sales tax is included.

³Overhead costs include interest, insurance, and housing but not depreciation, which is shown separately because it varies to some extent with use. Overhead per hour will vary with annual use.

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Implement	Tractor Size (HP)	Net Cost of a New Implement ¹	--Estimated-- Work Performed		-Power Cost/Acre ² -		Labor Cost Per Acre	--Implement Cost/Acre--			Total Cost Per Acre ⁴	Diesel Fuel Gal/Acre
			Acres/Hr	Acres/Yr	Fuel	Other		Repairs	Depreciation	Overhead ³		
Tillage												
Chisel Plow 23 Ft	200 HP MFWD	\$53,500	11.85	711	\$3.13	\$6.86	\$1.87	\$1.23	\$4.18	\$3.88	\$ 21.36	0.70
Chisel Plow 37 Ft	310 HP 4WD	\$78,500	19.06	1,144	\$3.13	\$5.98	\$1.16	\$1.12	\$3.82	\$3.54	\$ 18.84	0.70
Chisel Plow 57 Ft	425 HP 4WD	\$131,000	29.36	1,762	\$3.13	\$4.20	\$0.76	\$1.22	\$4.13	\$3.67	\$ 16.83	0.70
Chisel Plow, Front Dsk 16.3 Ft	200 HP MFWD	\$35,000	8.37	670	\$5.15	\$9.71	\$2.65	\$0.81	\$2.74	\$2.87	\$ 23.50	1.15
Chisel Plow, Front Dsk 21.3 Ft Fold	310 HP 4WD	\$55,000	10.95	876	\$5.15	\$10.41	\$2.03	\$0.98	\$3.29	\$3.27	\$ 25.56	1.15
Moldboard Plow 6 Bottom-18, 9 Ft	130 HP MFWD	\$47,000	4.17	501	\$5.92	\$11.83	\$5.32	\$4.86	\$5.22	\$4.62	\$ 38.01	1.32
Moldboard Plow 8 Bottom-18, 12 Ft	160 HP MFWD	\$59,500	5.56	668	\$5.92	\$9.94	\$3.99	\$4.61	\$4.95	\$4.36	\$ 33.54	1.32
Field Cultivator 23 Ft	105 HP MFWD	\$53,000	16.59	1,659	\$1.39	\$2.24	\$1.34	\$1.03	\$1.78	\$1.61	\$ 9.24	0.31
Field Cultivator 47 Ft	260 HP MFWD	\$98,000	33.90	3,390	\$1.39	\$3.22	\$0.65	\$0.93	\$1.61	\$1.47	\$ 9.40	0.31
Field Cultivator 60 Ft	310 HP 4WD	\$132,000	43.27	4,327	\$1.39	\$2.63	\$0.51	\$0.98	\$1.70	\$1.51	\$ 8.75	0.31
Tandem Disk 21 Ft Fold	160 HP MFWD	\$74,000	12.22	1,222	\$3.33	\$4.53	\$1.82	\$2.03	\$3.37	\$3.04	\$ 17.36	0.74
Tandem Disk 30 Ft Fold	360 HP 4WD	\$108,000	17.45	1,745	\$3.33	\$5.97	\$1.27	\$2.07	\$3.44	\$3.03	\$ 19.86	0.74
V-Ripper 25 " O.C., 10 Ft	160 HP MFWD	\$20,500	6.18	618	\$5.00	\$8.95	\$3.59	\$1.07	\$1.84	\$1.82	\$ 22.38	1.11
V-Ripper 30 " O.C., 17 Ft	260 HP MFWD	\$26,500	10.51	1,051	\$5.00	\$10.40	\$2.11	\$0.81	\$1.40	\$1.44	\$ 21.05	1.11
Planting												
Row Crop Planter 6 Row-30, 15 Ft	60 HP	\$45,000	7.00	490	\$1.81	\$1.42	\$5.36	\$1.89	\$3.73	\$5.21	\$ 19.30	0.40
Row Crop Planter 8 Row-30, 20 Ft	75 HP	\$55,500	9.33	653	\$1.81	\$1.71	\$4.02	\$1.75	\$3.45	\$4.73	\$ 17.25	0.40
Row Crop Planter 12 Row-30, 30 Ft	105 HP MFWD	\$129,000	14.00	980	\$1.81	\$2.65	\$2.68	\$2.70	\$5.34	\$7.13	\$ 21.98	0.40
Row Crop Planter 16 Row-30, 40 Ft	200 HP MFWD	\$191,000	18.67	1,307	\$1.81	\$4.35	\$2.01	\$3.00	\$5.93	\$7.78	\$ 25.19	0.40
Row Crop Planter 24 Row-30, 60 Ft	310 HP 4WD	\$292,000	28.00	1,960	\$1.81	\$4.07	\$1.34	\$3.06	\$6.04	\$7.83	\$ 24.53	0.40
Presswheel Drill 16 Ft	105 HP MFWD	\$27,000	6.79	509	\$2.75	\$5.47	\$5.29	\$1.26	\$3.24	\$2.69	\$ 21.00	0.61
Presswheel Drill 20 Ft	130 HP MFWD	\$32,000	8.48	636	\$2.75	\$5.82	\$4.23	\$1.19	\$3.08	\$2.56	\$ 19.91	0.61

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Implement	Tractor Size (HP)	Net Cost of a New Implement ¹	--Estimated-- Work Performed		-Power Cost/Acre ² -		Labor Cost Per Acre	--Implement Cost/Acre--			Total Cost Per Acre ⁴	Diesel Fuel Gal/Acre
			Acres/Hr	Acres/Yr	Fuel	Other		Repairs	Depreciation	Overhead ³		
Presswheel Drill 25 Ft	130 HP MFWD	\$61,500	10.61	795	\$2.75	\$4.66	\$3.39	\$1.84	\$4.73	\$3.74	\$ 20.77	0.61
Presswheel Drill 30 Ft	160 HP MFWD	\$77,000	12.73	1,018	\$2.75	\$4.35	\$2.82	\$2.06	\$4.63	\$3.60	\$ 19.94	0.61
Air Seeder Drill w/Cart 52 Ft	260 HP MFWD	\$279,000	22.06	1,765	\$2.33	\$4.96	\$1.63	\$4.30	\$9.67	\$7.11	\$ 29.99	0.52
No-Till Drill 15 Ft	130 HP MFWD	\$73,500	6.36	509	\$4.03	\$7.76	\$5.65	\$3.93	\$8.83	\$6.71	\$ 36.91	0.90
Crop Maintenance												
Row Cultivator 12 Row-30, 30 Ft	160 HP MFWD	\$44,500	15.45	1,545	\$2.04	\$3.58	\$1.46	\$0.68	\$1.60	\$1.43	\$ 10.80	0.46
Boom Sprayer, Self-Propelled 120 Ft	None	\$557,000	66.18	6,618	\$0.31	\$0.00	\$0.61	\$0.99	\$3.41	\$4.35	\$ 9.67	0.07
Boom Sprayer, Pull-Type 90 Ft	130 HP MFWD	\$55,000	46.09	1,152	\$0.56	\$1.07	\$0.88	\$0.38	\$1.94	\$2.87	\$ 7.70	0.12
Stalk Shredder 20 Ft	130 HP MFWD	\$36,000	7.76	776	\$3.31	\$6.36	\$3.09	\$1.55	\$2.43	\$2.55	\$ 19.29	0.74
Harvest												
Rotary Mower/Conditioner 12 Ft	75 HP	\$44,500	8.73	698	\$1.70	\$1.83	\$2.62	\$0.87	\$3.15	\$3.24	\$ 13.41	0.38
Hay Rake 30 Ft	40 HP	\$33,500	26.18	2,095	\$0.30	\$0.30	\$0.85	\$0.24	\$0.90	\$0.87	\$ 3.46	0.07
Hay Merger 14 Ft	75 HP	\$65,000	10.86	2,172	\$1.36	\$1.47	\$2.04	\$1.60	\$1.69	\$1.56	\$ 9.73	0.30
Hay Merger, Self-Propelled 34 Ft	None	\$260,000	26.38	5,275	\$1.48	\$0.00	\$0.84	\$1.58	\$2.44	\$2.45	\$ 8.78	0.33
Hay Baler PTO Twine 12 Ft	40 HP	\$33,500	4.36	873	\$1.81	\$1.78	\$8.23	\$3.87	\$2.17	\$2.01	\$ 19.86	0.40
Round Baler 5x6 , 20 Ft	75 HP	\$94,000	9.45	1,891	\$1.57	\$1.69	\$2.35	\$8.54	\$2.80	\$2.30	\$ 19.25	0.35
Round Baler w/Bale Wrap 5x6 , 20 Ft	75 HP	\$103,000	9.45	1,891	\$1.57	\$1.69	\$2.35	\$9.36	\$3.07	\$2.52	\$ 20.56	0.35
Large Rectangular Baler 3x3 , 20 Ft	130 HP MFWD	\$147,000	11.64	2,909	\$2.21	\$4.24	\$3.09	\$3.38	\$2.85	\$2.41	\$ 18.17	0.49
Large Rectangular Baler 4x3 , 20 Ft	130 HP MFWD	\$178,000	11.64	2,909	\$2.21	\$4.24	\$3.09	\$4.09	\$3.45	\$2.89	\$ 19.97	0.49
Forage Harvester, Pull-Type w/Corn Head 3 Row, 7.5 Ft	160 HP MFWD	\$85,000	2.07	414	\$15.28	\$26.74	\$17.37	\$11.58	\$6.49	\$11.62	\$ 89.09	3.40
Forage Harvester, Pull-Type w/Pickup Head 12 Ft	105 HP MFWD	\$74,500	3.31	662	\$6.27	\$11.21	\$10.86	\$6.34	\$3.55	\$6.40	\$ 44.64	1.40
Forage Harvester, Self-Prop Corn Head 6 Row, 15 Ft	625 HP SP Forage Harvester Base Unit	\$94,000	5.09	1,018	\$11.57	\$43.00	\$7.06	\$1.48	\$2.91	\$5.40	\$73.07	2.58
Forage Harvester, Self-Prop Corn Head 8 Row, 20 Ft	625 HP SP Forage Harvester Base Unit	\$123,000	6.79	1,358	\$11.57	\$32.25	\$5.29	\$1.45	\$2.86	\$5.21	\$56.98	2.58

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Implement	Tractor Size (HP)	Net Cost of a New Implement ¹	--Estimated-- Work Performed		-Power Cost/Acre ² -		Labor Cost Per Acre	--Implement Cost/Acre--			Total Cost Per Acre ⁴	Diesel Fuel Gal/Acre
			Acres/Hr	Acres/Yr	Fuel	Other		Repairs	Depreciation	Overhead ³		
Forage Harvester, Self-Prop Pickup Head 12 Ft	400 HP SP Forage Harvester Base Unit	\$30,500	4.07	815	\$10.58	\$39.26	\$8.82	\$0.60	\$1.18	\$2.50	\$62.94	2.36
Forage Harvester, Self-Prop Pickup Head (2X windrows) 24 Ft	625 HP SP Forage Harvester Base Unit	\$30,500	8.15	1,629	\$8.26	\$26.87	\$4.41	\$0.30	\$0.59	\$1.25	\$41.69	1.84
Combine Platform 20 Ft	275 HP Combine	\$33,000	5.94	1,188	\$9.14	\$36.73	\$6.05	\$0.73	\$1.94	\$1.24	\$55.83	2.04
Combine Platform 25 Ft	375 HP Combine	\$40,000	7.42	1,485	\$9.14	\$33.82	\$4.84	\$0.71	\$1.88	\$1.18	\$52.40	2.04
Combine Platform 30 Ft	375 HP Combine	\$47,500	8.91	1,782	\$9.14	\$28.18	\$4.03	\$0.70	\$1.86	\$1.16	\$44.24	2.04
Combine Corn Hd 6 Row-30, 15 Ft	275 HP Combine	\$57,000	5.09	1,018	\$8.96	\$42.85	\$7.06	\$1.47	\$3.91	\$2.42	\$68.37	2.00
Combine Corn Hd 8 Row-30, 20 Ft	275 HP Combine	\$74,000	6.79	1,358	\$8.96	\$32.14	\$5.29	\$1.43	\$3.80	\$2.36	\$53.02	2.00
Combine Chopping Corn Hd 8 Row-30, 20 Ft	275 HP Combine	\$100,000	6.79	1,358	\$8.52	\$32.14	\$5.29	\$6.66	\$3.58	\$3.71	\$59.37	1.90
Combine Corn Hd 12 Row-30, 30 Ft	375 HP Combine	\$107,000	10.18	2,036	\$8.96	\$24.66	\$3.53	\$1.38	\$3.67	\$2.23	\$42.74	2.00
Combine Corn Hd 12 Row-22, 22 Ft	375 HP Combine	\$113,000	7.47	1,493	\$8.96	\$33.62	\$4.81	\$1.98	\$5.28	\$3.21	\$58.83	2.00
Combine Chopping Corn Hd 12 Row-30, 30 Ft	440 HP Combine	\$151,000	10.18	2,036	\$8.52	\$26.29	\$3.53	\$6.70	\$3.60	\$3.68	\$51.23	1.90
Combine Chopping Corn Hd 12 Row-22, 22 Ft	440 HP Combine	\$149,000	7.47	1,493	\$8.52	\$35.84	\$4.81	\$9.02	\$4.85	\$4.96	\$69.61	1.90
Combine Belt Pickup Hd 23 Ft	275 HP Combine	\$44,000	7.81	832	\$6.96	\$27.95	\$4.60	\$0.37	\$3.57	\$2.31	\$45.75	1.55
Grain Cart 30 Ft	225 HP MFWD	\$44,000	6.87	1,375	\$6.46	\$13.87	\$3.51	\$1.76	\$1.81	\$1.46	\$28.87	1.44
Sugar Beet Harvester, Self-Propelled 15 Ft	None	\$800,000	7.73	773	\$22.44	\$0.00	\$5.24	\$71.68	\$54.29	\$49.46	\$203.11	5.00
Sugar Beet Harvester, Pull-Type 15 Ft	310 HP 4WD	\$225,000	4.73	378	\$12.95	\$24.10	\$8.56	\$30.82	\$31.20	\$29.16	\$136.79	2.89

¹Net cost of a new unit assumes no trade-in. Farm machinery is exempt from sales tax in Michigan, so no sales tax is included.

²Power cost per acre for the power unit assigned to each implement multiplied times that implement's acres/hour equals that power unit's total cost per hour shown in the "Tractors, Combines, and Self-Propelled Forage Harvesters (Without Heads)" table above.

³Overhead per acre will vary with annual use.

⁴Total cost/acre is total cost per hour divided by acres per hour. Includes fuel, lubricants, power and equipment repairs and maintenance, labor, and overhead costs including depreciation. Fuel is included in power cost.