2022 Michigan State University Custom Work Rates

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

by William F. Lazarus
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Custom Rate Parameters:

Skilled labor rate $/hr = $29.99
Unskilled labor rate $/hr = $20.24

Interest Rate = 4.375%

Fuel price = $5.38

Lubrication cost = 10% of fuel

Sources:

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] -- Cost Per Year	-- Overhead[3] -- Cost Per Hour	Total Cost Per Year Of Use	Total Cost Per Hour Of Use	Diesel Use/Hr Gallons
Tractors, Combines, and Self-Propelled Forage Harvesters (Without Heads)										
40 HP	$28,000	400	$10.41	$0.94	$2.47	$1,292	$3.23	$6,822	$17.05	1.76
60 HP	36,000	400	15.62	1.21	3.18	1,644	4.11	9,646	24.11	2.64
75 HP	59,000	400	19.52	2.09	4.84	2,668	6.67	13,246	33.12	3.30
105 HP MFWD	150,000	450	27.33	4.50	13.17	6,291	13.98	26,541	58.98	4.62
130 HP MFWD	200,000	450	33.84	6.00	17.56	8,339	18.53	34,168	75.93	5.72
160 HP MFWD	241,000	500	41.65	8.03	19.28	10,068	20.14	44,548	89.10	7.04
200 HP MFWD	355,000	500	52.06	11.83	28.40	14,726	29.45	60,872	121.74	8.80
225 HP MFWD	353,000	400	58.57	9.41	34.40	14,798	36.99	55,749	139.37	9.90
260 HP MFWD	422,000	400	67.68	6.75	41.12	17,630	44.07	63,851	159.63	11.44
310 HP 4WD	440,000	400	80.69	7.04	42.88	18,369	45.92	70,612	176.53	13.64
360 HP 4WD	402,000	400	93.71	6.43	39.17	16,809	42.02	72,534	181.33	15.84
425 HP 4WD	477,000	400	110.63	7.63	46.48	19,888	49.72	85,784	214.46	18.70
275 HP Combine	419,000	400	71.58	99.08	75.60	13,694	34.24	112,201	280.50	12.10
375 HP Combine	482,000	400	97.61	113.98	86.97	15,802	39.51	135,228	338.07	16.50
440 HP Combine	514,000	400	99.71	121.55	92.74	16,811	42.03	142,411	356.03	16.85
400 HP SP Forage Harvester Base Unit	410,000	350	56.79	57.27	15.19	20,510	58.60	65,748	187.85	9.60
625 HP SP Forage Harvester Base Unit	563,000	350	88.74	78.64	20.86	27,934	79.81	93,816	268.05	15.00

[1]HP 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.

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

[3]Overhead 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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	Tractor	Net Cost	--Estimated--				Labor	--Implement Cost/Acre--			Total	Use-related	Diesel
	Size	of a New	Work-Performed		-Power Cost/Acre[2]-		Cost		Deprec-		Cost	Cost	Fuel
Implement	(HP)	Implement[1]	Acres/hr	Acres/yr	Fuel	Other	Per Acre	Repairs	iation	Overhead[3]	Per Acre[4]	Per Acre[5]	Gal/Acre
Tillage													
Chisel Plow 23 Ft	200 HP MFWD	$53,500	11.85	711	$4.13	$5.88	$1.74	$1.23	$4.04	$3.20	$ 20.49	$ 14.80	0.70
Chisel Plow 37 Ft	310 HP 4WD	$78,500	19.06	1,144	$4.13	$5.03	$1.08	$1.12	$3.68	$2.93	$ 18.08	$ 12.74	0.70
Chisel Plow 57 Ft	425 HP 4WD	$131,000	29.36	1,762	$4.13	$3.54	$0.70	$1.22	$3.99	$3.00	$ 16.21	$ 11.52	0.70
Chisel Plow, Front Dsk 16.3 Ft	200 HP MFWD	$35,000	8.37	670	$6.79	$8.32	$2.47	$0.81	$2.46	$2.44	$ 22.72	$ 16.77	1.15
Chisel Plow, Front Dsk 21.3 Ft Fold	310 HP 4WD	$55,000	10.95	876	$6.79	$8.75	$1.89	$0.98	$2.96	$2.75	$ 24.70	$ 17.75	1.15
Moldboard Plow 6 Bottom-18, 9 Ft	130 HP MFWD	$47,000	4.17	501	$7.80	$10.09	$4.95	$4.86	$5.03	$3.78	$ 36.82	$ 28.60	1.32
Moldboard Plow 8 Bottom-18, 12 Ft	160 HP MFWD	$59,500	5.56	668	$7.80	$8.53	$3.71	$4.61	$4.78	$3.56	$ 32.68	$ 25.50	1.32
Field Cultivator 23 Ft	105 HP MFWD	$53,000	16.59	1,659	$1.84	$1.91	$1.24	$1.03	$1.71	$1.33	$ 8.87	$ 6.70	0.31
Field Cultivator 47 Ft	260 HP MFWD	$98,000	33.90	3,390	$1.84	$2.71	$0.61	$0.93	$1.55	$1.21	$ 9.01	$ 6.50	0.31
Field Cultivator 60 Ft	310 HP 4WD	$132,000	43.27	4,327	$1.84	$2.21	$0.48	$0.98	$1.64	$1.24	$ 8.41	$ 6.12	0.31
Tandem Disk 21 Ft Fold	160 HP MFWD	$74,000	12.22	1,222	$4.39	$3.88	$1.69	$2.03	$3.25	$2.49	$ 16.75	$ 12.61	0.74
Tandem Disk 30 Ft Fold	360 HP 4WD	$108,000	17.45	1,745	$4.39	$5.02	$1.18	$2.07	$3.32	$2.48	$ 19.44	$ 14.55	0.74
V-Ripper 25 " O.C., 10 Ft	160 HP MFWD	$20,500	6.18	618	$6.59	$7.68	$3.34	$1.07	$1.78	$1.52	$ 22.12	$ 17.34	1.11
V-Ripper 30 " O.C., 17 Ft	260 HP MFWD	$26,500	10.51	1,051	$6.59	$8.75	$1.96	$0.81	$1.35	$1.21	$ 20.53	$ 15.13	1.11
Planting													
Row Crop Planter 6 Row-30, 15 Ft	60 HP	$45,000	7.00	490	$2.39	$1.21	$4.97	$1.89	$3.18	$4.39	$ 17.87	$ 12.89	0.40
Row Crop Planter 8 Row-30, 20 Ft	75 HP	$55,500	9.33	653	$2.39	$1.46	$3.73	$1.75	$2.94	$3.97	$ 15.93	$ 11.24	0.40
Row Crop Planter 12 Row-30, 30 Ft	105 HP MFWD	$129,000	14.00	980	$2.39	$2.26	$2.48	$2.70	$4.55	$5.95	$ 19.90	$ 12.96	0.40
Row Crop Planter 16 Row-30, 40 Ft	200 HP MFWD	$191,000	18.67	1,307	$2.39	$3.73	$1.86	$3.00	$5.05	$6.47	$ 22.91	$ 14.87	0.40
Row Crop Planter 24 Row-30, 60 Ft	310 HP 4WD	$292,000	28.00	1,960		$3.42	$1.24	$3.06	$5.15	$6.49	$ 22.25	$ 14.12	
Presswheel Drill 16 Ft	105 HP MFWD	$27,000	6.79	509	$3.62	$4.66	$4.90	$1.26	$3.37	$2.17	$ 20.39	$ 16.16	0.61
Presswheel Drill 20 Ft	130 HP MFWD	$32,000	8.48	636	$3.62	$4.96	$3.92	$1.19	$3.19	$2.07	$ 19.33	$ 15.08	0.61
Presswheel Drill 25 Ft	130 HP MFWD	$61,500	10.61	795	$3.62	$3.97	$3.14	$1.84	$4.91	$2.98	$ 20.03	$ 15.30	0.61
Presswheel Drill 30 Ft	160 HP MFWD	$77,000	12.73	1,018	$3.62	$3.73	$2.62	$2.06	$4.80	$2.86	$ 19.34	$ 14.90	0.61
Air Seeder Drill w/Cart 52 Ft	260 HP MFWD	$279,000	22.06	1,765	$3.07	$4.17	$1.51	$4.30	$10.04	$5.56	$ 28.65	$ 21.09	0.52
No-Till Drill 15 Ft	130 HP MFWD	$73,500	6.36	509	$5.32	$6.61	$5.23	$3.93	$9.17	$5.29	$ 35.56	$ 27.35	0.90

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	Tractor	Net Cost	--Estimated--				Labor	--Implement Cost/Acre--			Total	Use-related	Diesel
	Size	of a New	Work-Performed		-Power Cost/Acre[2]-		Cost		Deprec-		Cost	Cost	Fuel
Implement	(HP)	Implement[1]	Acres/hr	Acres/yr	Fuel	Other	Per Acre	Repairs	iation	Overhead[3]	Per Acre[4]	Per Acre[5]	Gal/Acre
Crop Maintenance													
Row Cultivator 12 Row-30, 30 Ft	160 HP MFWD	$44,500	15.45	1,545	$2.69	$3.07	$1.36	$0.68	$1.54	$1.17	$ 10.52	$ 8.05	0.46
Boom Sprayer, Self-Propelled 120 Ft	None	$557,000	66.18	6,618	$0.41	$0.00	$0.57	$0.99	$2.91	$3.60	$ 8.47	$ 4.87	0.07
Boom Sprayer, Pull-Type 90 Ft	130 HP MFWD	$55,000	46.09	1,152	$0.73	$0.91	$0.81	$0.38	$1.65	$2.45	$ 6.94	$ 4.09	0.12
Stalk Shredder 20 Ft	130 HP MFWD	$36,000	7.76	776	$4.36	$5.43	$2.87	$1.55	$2.19	$2.16	$ 18.56	$ 14.01	0.74
Harvest													
Rotary Mower/Conditioner 12 Ft	75 HP	$44,500	8.73	698	$2.24	$1.56	$2.44	$0.87	$2.75	$2.72	$ 12.56	$ 9.08	0.38
Hay Rake 30 Ft	40 HP	$33,500	26.18	2,095	$0.40	$0.25	$0.79	$0.24	$0.87	$0.73	$ 3.28	$ 2.42	0.07
Hay Merger 14 Ft	75 HP	$65,000	10.86	2,172	$1.80	$1.25	$1.90	$1.60	$1.62	$1.29	$ 9.47	$ 7.56	0.30
Hay Merger, Self-Propelled 34 Ft	None	$260,000	26.38	5,275	$1.95	$0.00	$0.78	$1.58	$2.12	$2.05	$ 8.48	$ 6.44	0.33
Hay Baler PTO Twine 12 Ft	40 HP	$33,500	4.36	873	$2.39	$1.52	$7.63	$3.87	$2.08	$1.67	$ 19.15	$ 16.75	0.40
Round Baler 5x6 , 20 Ft	75 HP	$94,000	9.45	1,891	$2.06	$1.44	$2.18	$8.54	$2.69	$1.86	$ 18.78	$ 16.21	0.35
Round Baler w/Bale Wrap 5x6 , 20 Ft	75 HP	$103,000	9.45	1,891	$2.06	$1.44	$2.18	$9.36	$2.95	$2.04	$ 20.03	$ 17.29	0.35
Large Rectangular Baler 3x3 , 20 Ft	130 HP MFWD	$147,000	11.64	2,909	$2.91	$3.62	$2.86	$3.38	$2.74	$1.96	$ 17.46	$ 13.91	0.49
Large Rectangular Baler 4x3 , 20 Ft	130 HP MFWD	$178,000	11.64	2,909	$2.91	$3.62	$2.86	$4.09	$3.31	$2.35	$ 19.14	$ 15.20	0.49
Forage Harvester, Pull-Type w/Corn Head 3 Row, 7.5 Ft	160 HP MFWD	$85,000	2.07	414	$20.14	$22.94	$16.10	$11.58	$2.66	$10.39	$ 83.81	$ 63.69	3.40
Forage Harvester, Pull-Type w/Pickup Head 12 Ft	105 HP MFWD	$74,500	3.31	662	$8.26	$9.56	$10.06	$6.34	$1.46	$5.72	$ 41.41	$ 31.46	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	$15.25	$35.22	$6.54	$1.48	$1.20	$4.84	$66.71	$ 46.19	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	$15.25	$26.42	$4.90	$1.45	$1.17	$4.67	$51.69	$ 35.26	2.58
Forage Harvester, Self-Prop Pickup Head 12 Ft	400 HP SP Forage Harvester Base Unit	$30,500	4.07	815	$13.94	$32.18	$8.17	$0.60	$0.49	$2.27	$57.65	$ 40.99	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	$10.89	$22.01	$4.09	$0.30	$0.24	$1.13	$38.67	$ 27.74	1.84
Combine Platform 20 Ft	275 HP Combine	$33,000	5.94	1,188	$12.05	$35.18	$5.60	$0.73	$1.91	$1.01	$56.49	$ 49.71	2.04
Combine Platform 25 Ft	375 HP Combine	$40,000	7.42	1,485	$12.05	$32.39	$4.48	$0.71	$1.86	$0.96	$53.54	$ 47.26	2.04
Combine Platform 30 Ft	375 HP Combine	$47,500	8.91	1,782	$12.05	$26.99	$3.74	$0.70	$1.84	$0.94	$45.16	$ 39.78	2.04
Combine Corn Hd 6 Row-30, 15 Ft	275 HP Combine	$57,000	5.09	1,018	$11.82	$41.04	$6.54	$1.47	$3.86	$1.96	$68.92	$ 60.24	2.00

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	Tractor	Net Cost	--Estimated--				Labor	--Implement Cost/Acre--			Total	Use-related	Diesel
	Size	of a New	Work-Performed		-Power Cost/Acre[2]-		Cost		Deprec-		Cost	Cost	Fuel
Implement	(HP)	Implement[1]	Acres/hr	Acres/yr	Fuel	Other	Per Acre	Repairs	iation	Overhead[3]	Per Acre[4]	Per Acre[5]	Gal/Acre
Combine Corn Hd 8 Row-30, 20 Ft	275 HP Combine	$74,000	6.79	1,358	$11.82	$30.78	$4.90	$1.43	$3.76	$1.91	$53.33	$ 46.37	2.00
Combine Chopping Corn Hd 8 Row-30, 20 Ft	275 HP Combine	$100,000	6.79	1,358	$11.23	$30.78	$4.90	$6.66	$3.14	$3.09	$59.11	$ 50.98	1.90
Combine Corn Hd 12 Row-30, 30 Ft	375 HP Combine	$107,000	10.18	2,036	$11.82	$23.62	$3.27	$1.38	$3.62	$1.80	$43.27	$ 37.59	2.00
Combine Corn Hd 12 Row-22, 22 Ft	375 HP Combine	$113,000	7.47	1,493	$11.82	$32.20	$4.46	$1.98	$5.21	$2.59	$59.52	$ 51.64	2.00
Combine Chopping Corn Hd 12 Row-30, 30 Ft	440 HP Combine	$151,000	10.18	2,036	$11.23	$25.17	$3.27	$6.70	$3.16	$3.06	$51.16	$ 43.97	1.90
Combine Chopping Corn Hd 12 Row-22, 22 Ft	440 HP Combine	$149,000	7.47	1,493	$11.23	$34.33	$4.46	$9.02	$4.25	$4.12	$69.53	$ 59.78	1.90
Combine Belt Pickup Hd 23 Ft	275 HP Combine	$44,000	7.81	832	$9.17	$26.76	$4.26	$0.37	$3.52	$1.86	$45.95	$ 39.70	1.55
Grain Cart 30 Ft	225 HP MFWD	$104,000	6.87	1,375	$8.52	$11.76	$3.27	$4.15	$4.10	$2.78	$34.58	$ 26.42	1.44

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

[2]Power 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.

[3]Overhead per acre will vary with annual use.

[4]Total 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.

[5]Use-related cost/acre is included in the total cost/acre amount. Use-related cost/acre includes everything in total cost/acre EXCEPT that non-depreciation overhead costs (interest, insurance, and housing) are omitted. Depreciation is included in use-related cost under the assumption that extra use reduces trade-in value which increases annual depreciation. In other words, depreciation is considered here to be at least partially use-related even though it is commonly thought of as being mainly time-related.