



### **Ohio Farm Custom Rates 2020**

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Farming is a complex business and many Ohio farmers utilize outside assistance for specific farm-related work. This option is appealing for tasks requiring specialized equipment or technical expertise. Often, having someone else with specialized tools perform a task is more cost effective and saves time. Farm work completed by others is often referred to as “custom farm work” or more simply, “custom work”. A “custom rate” is the amount agreed upon by both parties to be paid by the custom work customer to the custom work provider.

### **Ohio Farm Custom Rates**

This publication reports custom rates based on a statewide survey of 377 farmers, custom operators, farm managers, and landowners conducted in 2020. These rates, except where noted, include the implement and tractor if required, all variable machinery costs such as fuel, oil, lube, twine, etc., and the labor for the operation.

Some custom rates published in this study vary widely, possibly influenced by:

- Type or size of equipment used (e.g. 20-shank chisel plow versus a 9-shank)
- Size and shape of fields,
- Condition of the crop (for harvesting operations)
- Skill level of labor
- Amount of labor needed in relation to the equipment capabilities
- Cost margin differences for full-time custom operators compared to farmers supplementing current income

Some custom rates reflect discounted rates as the parties involved have family relationships or are strengthening a relationship to help secure the custom farmed land in a cash or other rental agreement. Some providers charge differently because they are simply attempting to spread their fixed costs over more acreage to decrease fixed costs per acre and are willing to forgo complete cost recovery.

The measures shown in the following tables are the summary of the survey respondents. The measures are the average (or mean), range, median, minimum, and maximum. Average custom rates reported in this publication are a simple average of all the survey responses. Range identified in the tables consists of two numbers. The first is the average plus the standard deviation, which is the variability of the data from the average measure. The second number of the range is the average minus the standard deviation. The median represents the middle value in the survey responses. The minimum and maximum reported in the table are the minimum and maximum amounts reported from the survey data for a given custom operation.



Charges may be added if the custom provider considers a job abnormal such as distance from the operator's base location, difficulty of terrain, amount of product or labor involved with the operation, or other special requirements of the custom work customer.

As a custom provider, the average rates reported in this publication may not cover your total costs for performing the custom service. As a customer, you may not be able to hire a custom service for the average rate published in this factsheet.

Calculate your own costs carefully before determining the rate to charge or pay. It may be helpful to compare the custom rates reported in this fact sheet with machinery costs calculated by economic engineering models available by searching University of Minnesota farm machinery cost estimates. The data from this survey are intended to show a representative farming industry cost for specified machines and operations in Ohio. The following resources are available to help you calculate and consider the total costs of performing a given machinery operation. You may also consider using the data contained in multiple publications as a base for future custom rates. Suggested publications are:

Farm Machinery Cost Estimates, available by searching University of Minnesota.

Illinois Farm Management Handbook, available by searching University of Illinois farmdoc.

Estimating Farm Machinery Costs, available by searching Iowa State University agriculture decision maker and machinery management.

### **2020 Survey Responses**

Below are tables summarizing the results of the 2020 Ohio Farm Custom Rate Survey. Remember, fuel prices have an impact on custom rates and rates may fluctuate based on large movements in fuel prices. The average price of retail on-highway diesel in 2019 according the U.S. Energy Information Administration (EIA) was \$3.056 per gallon. The approximate price of diesel fuel at the beginning of the survey period was \$2.50 per gallon for off-road (farm) usage. The price of off-road (farm) usage diesel towards the end of the survey period was approximately \$2.00 per gallon. At the end of this fact sheet is a sample calculation of machinery rental based on custom rates reported in this survey.

Special note: Before entering into an agreement, discuss all of the details of the specific job with the other party.



**Ohio Farm Custom Rates 2020**

	Average	Median	Max	Min	St. Dev.	Range	
<b>Soil Preparation</b>							
Stalk Chopper Acre	\$13.20	\$12.00	\$25.00	\$5.00	\$6.18	\$19.39	\$7.04
Moldboard Plow /Acre	\$22.00	\$20.00	\$50.00	\$15.00	\$9.26	\$31.26	\$12.74
Chisel Plow / Acre	\$19.30	\$18.00	\$50.00	\$12.00	\$6.84	\$26.17	\$12.49
Disk Chisel / Acre	\$19.80	\$18.00	\$50.00	\$12.00	\$6.40	\$26.22	\$13.43
Disk-Tandem / Acre	\$17.00	\$15.00	\$35.00	\$8.00	\$5.83	\$22.82	\$11.17
Disk-Offset / Acre	\$19.20	\$19.50	\$25.00	\$12.00	\$4.52	\$23.71	\$14.66
Soil Finishing / Acre	\$17.20	\$15.00	\$50.00	\$5.00	\$8.03	\$25.25	\$9.20
Field Cultivator / Acre	\$14.50	\$14.00	\$35.00	\$7.00	\$4.93	\$19.45	\$9.58
Land Leveling / Acre	\$18.80	\$15.50	\$35.00	\$10.00	\$8.63	\$27.46	\$10.20
Subsoiling / Acre	\$21.90	\$20.00	\$32.00	\$12.00	\$4.92	\$26.84	\$17.00
V-Ripping / Acre	\$25.10	\$23.50	\$50.00	\$15.00	\$8.47	\$33.54	\$16.60
Strip Tillage / Acre	\$23.70	\$22.00	\$35.00	\$15.00	\$5.79	\$29.46	\$17.89
Strip w/ Fertilizer Injection / Acre	\$28.10	\$28.00	\$40.00	\$20.00	\$6.78	\$34.90	\$21.34
<b>Fertilizer Application - Ground</b>							
Dry Bulk / Acre	\$7.00	\$7.00	\$12.00	\$3.85	\$1.87	\$8.88	\$5.14
Liquid Knife/ Acre	\$11.30	\$10.50	\$18.00	\$7.00	\$3.22	\$14.47	\$8.03
Liquid Spray / Acre	\$7.60	\$7.00	\$12.00	\$4.50	\$1.73	\$9.32	\$5.87
Annhydrous / Acre	\$15.20	\$14.00	\$26.00	\$7.00	\$4.80	\$20.04	\$10.43
Late Season Nitrogen Application - Coulters /Acre	\$13.20	\$14.00	\$19.50	\$7.00	\$3.51	\$16.73	\$9.71
Late Season Nitrogen Application - Drops /Acre	\$11.60	\$12.00	\$17.00	\$7.00	\$2.87	\$14.51	\$8.76
Lime / Acre	\$7.90	\$7.00	\$12.00	\$2.25	\$3.04	\$10.89	\$4.82
Lime / Ton	\$7.90	\$8.00	\$12.00	\$5.00	\$2.22	\$10.16	\$5.73
Variable Rate Fertilizer / Acre	\$8.10	\$7.75	\$15.00	\$5.00	\$2.31	\$10.43	\$5.81
Number of Products Applied	1.90	2.00	4.00	1.00	0.68	2.56	\$1.21
<b>Chemical Control of Weeds or Insects</b>							
	Average	Median	Max	Min	St. Dev.	Range	
Spraying - self propelled / Acre	\$7.70	\$7.50	\$12.00	\$4.50	\$1.52	\$9.16	\$6.13
Spraying - pull type / Acre	\$7.10	\$7.00	\$12.00	\$5.00	\$1.73	\$8.84	\$5.38
Highboy spraying / Acre	\$9.10	\$8.00	\$15.00	\$6.00	\$2.76	\$11.89	\$6.36
<b>Mechanical Weed Control</b>							
Rotary Hoeing / Acre	\$8.70	\$10.00	\$10.00	\$5.00	\$1.97	\$10.64	\$6.69
Conventional Cultivation / Acre	\$11.30	\$11.00	\$15.00	\$8.00	\$2.59	\$13.84	\$8.66
<b>Aerial Application</b>							
Chemicals / Acre	\$12.90	\$12.50	\$20.00	\$7.00	\$3.01	\$15.87	\$9.86
Seed / Acre	\$15.20	\$15.00	\$20.00	\$11.00	\$2.90	\$18.08	\$12.28
Fertilizer / Acre	\$13.60	\$14.00	\$20.00	\$7.00	\$4.14	\$17.76	\$9.47

Max = Maximum, Min = Minimum, St. Dev. = Standard deviation

Range = Average +/- 1 Standard Deviation,

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**Ohio Farm Custom Rates 2020**

**Planting Operations**

**Conventional Till**

	Average	Median	Max	Min	St. Dev.	Range	
Plant Corn 30" Rows / Acre	\$20.00	\$20.00	\$50.00	\$10.00	\$5.82	\$25.82	\$14.19
Plant Corn w/ Starter Fertilizer 30" Rows / Acre	\$21.10	\$20.00	\$50.00	\$10.00	\$5.91	\$27.06	\$15.23
Variable rate corn planting / Acre	\$22.00	\$20.00	\$38.00	\$14.00	\$5.93	\$27.93	\$16.07
Plant Soybeans 15" or 30" Rows / Acre	\$20.10	\$20.00	\$50.00	\$6.00	\$6.19	\$26.28	\$13.90
Variable rate soybean planting / Acre	\$20.20	\$20.00	\$35.00	\$14.00	\$4.87	\$25.02	\$15.28
Drill Soybeans / Acre	\$18.00	\$17.25	\$40.00	\$8.00	\$5.28	\$23.30	\$12.74
Drill Small Grains / Acre	\$17.30	\$17.25	\$27.00	\$8.00	\$3.99	\$21.31	\$13.33

**No-Till**

Plant Corn 30" Rows / Acre	\$20.10	\$20.00	\$50.00	\$10.00	\$6.19	\$26.25	\$13.88
Plant Corn w/ Starter Fertilizer 30" Rows / Acre	\$21.20	\$20.00	\$50.00	\$10.00	\$6.68	\$27.88	\$14.52
Variable rate corn planting / Acre	\$22.30	\$20.00	\$38.00	\$14.00	\$6.29	\$28.60	\$16.02
Plant Soybeans 15" or 30" Rows / Acre	\$20.10	\$20.00	\$50.00	\$6.00	\$6.46	\$26.53	\$13.61
Variable rate soybean planting / Acre	\$20.50	\$20.00	\$28.00	\$14.00	\$4.13	\$24.63	\$16.37
Drill Soybeans / Acre	\$18.00	\$16.85	\$30.00	\$8.00	\$5.35	\$23.38	\$12.68
Drill Small Grains / Acre	\$17.60	\$17.00	\$30.00	\$8.00	\$4.72	\$22.29	\$12.86

**Grass/Legume/Pasture Seeding**

Broadcast / Acre	\$9.20	\$8.00	\$15.00	\$5.00	\$3.14	\$12.31	\$6.02
Grain drill / Acre	\$16.70	\$17.50	\$25.00	\$8.00	\$4.63	\$21.32	\$12.07

**Grain Harvest**

	Average	Median	Max	Min	St. Dev.	Range	
Harvest Corn / (combine, grain cart, haul local to farm) / Acre	\$33.90	\$34.50	\$55.00	\$22.00	\$5.94	\$39.83	\$27.94
Harvest Soybeans / (combine, grain cart, haul local to farm) / Acre	\$31.50	\$30.00	\$50.00	\$16.00	\$6.02	\$37.46	\$25.43
Harvest Wheat / (combine, grain cart, haul local to farm) / Acre	\$31.50	\$30.00	\$50.00	\$22.00	\$5.39	\$36.84	\$26.06
Added Charge GPS Mapping	\$1.40	\$1.00	\$5.00	\$0.00	\$1.46	\$2.83	-\$0.08
Combine Corn / Acre	\$29.00	\$30.00	\$40.00	\$15.00	\$4.73	\$33.75	\$24.29
Combine Soybeans / Acre	\$27.80	\$28.00	\$40.00	\$15.00	\$4.83	\$32.58	\$22.93
Combine Small Grains / Acre	\$28.40	\$28.25	\$40.00	\$15.00	\$4.92	\$33.27	\$23.43
Pick Ear Corn / Acre	\$30.00	\$30.00	\$40.00	\$20.00	\$7.91	\$37.91	\$22.09
Grain Cart / Acre	\$5.30	\$5.00	\$10.00	\$2.00	\$2.00	\$7.29	\$3.28

**Grain Storage - On Farm**

	Average	Median	Max	Min	St. Dev.	Range	
Storage / Month / Bushel	\$0.047	\$0.050	\$0.12	\$0.02	\$0.02	\$0.065	\$0.03
Storage / Year / Bushel	\$0.19	\$0.16	\$0.60	\$0.06	\$0.12	\$0.32	\$0.07

**Grain Drying**

Per Point of Moisture Removed / Bushel	\$0.039	\$0.040	\$0.07	\$0.02	\$0.01	\$0.052	\$0.026
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**Grain Hauling**

Farm to Market / Bushel	\$0.155	\$0.150	\$0.280	\$0.050	\$0.061	\$0.216	\$0.094
Average Miles - Farm to Market	25.2	22.0	63.0	3.0	16.5	41.7	8.7
Field to Farm / Bushel	\$0.102	\$0.100	\$0.150	\$0.050	\$0.036	\$0.138	\$0.066
Average Miles - Field to Farm	13.3	10.0	50.0	5.0	9.6	22.9	3.7

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**Ohio Farm Custom Rates 2020**

**Custom Farming (All machinery operations for tillage, planting, spraying, tending & harvesting)**

	Average	Median	Max	Min	St. Dev.	Range	
Corn / Acre	\$118	\$127.50	\$190.00	\$60.00	\$34.14	\$151.86	\$83.58
Soybeans /Acre	\$103	\$87.50	\$190.00	\$60.00	\$36.13	\$139.10	\$66.83
Small Grains / Acre	\$108	\$115.00	\$170.00	\$60.00	\$32.64	\$140.27	\$75.00

**Silage Harvest**

Chop Corn Silage / Ton	\$6.50	\$7.00	\$7.50	\$4.50	\$1.17	\$7.67	\$5.33
Chop, Haul, Fill Corn Silage / Ton	\$10.10	\$10.00	\$13.00	\$8.00	\$1.89	\$12.00	\$8.22

**Hay / Straw Harvest**

	Average	Median	Max	Min	St. Dev.	Range	
Mowing / Acre	\$11.40	\$11.00	\$15.00	\$7.50	\$2.56	\$13.94	\$8.82
Mowing/Conditioning / Acre	\$13.10	\$14.40	\$20.00	\$6.00	\$3.28	\$16.35	\$9.79
Raking / Acre	\$7.10	\$7.00	\$15.00	\$4.00	\$2.47	\$9.59	\$4.65
Tedding / Acre	\$6.20	\$5.75	\$10.00	\$4.00	\$1.68	\$7.87	\$4.51

**Baling: Small Square Bales**

Baled / Dropped in Field /Bale	\$0.90	\$0.78	\$2.00	\$0.40	\$0.42	\$1.31	\$0.47
Baled and Loaded on Wagon / Bale	\$1.00	\$1.00	\$2.00	\$0.35	\$0.40	\$1.42	\$0.62
Haul & Store / Bale	\$0.50	\$0.50	\$0.50	\$0.25	\$0.09	\$0.55	\$0.37
Baled, Loaded, Hauled and Stored / Bale	\$1.40	\$1.50	\$2.00	\$0.75	\$0.39	\$1.77	\$0.99

**Baling: Large Round Bales ~ 600-1000#**

Baled and Dropped in Field / Bale	\$9.60	\$10.00	\$12.50	\$7.00	\$1.34	\$10.89	\$8.21
Baled, Net Wrapped and Left in Field / Bale	\$10.10	\$9.00	\$15.00	\$7.00	\$2.47	\$12.56	\$7.62
Baled and Wrapped Dry in Plastic (Plastic Included) / Bale	\$16.20	\$15.00	\$20.00	\$13.00	\$2.79	\$18.99	\$13.41
Baled and Wrapped Wet in Plastic (Plastic Included) / Bale	\$16.20	\$17.00	\$20.00	\$12.00	\$2.86	\$19.06	\$13.34

**Baling: Large Square Bales**

Baled and Dropped in Field / Bale	\$10.20	\$9.75	\$20.00	\$7.50	\$3.62	\$13.82	\$6.57
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**Complete Hay Harvest**

Cost per Ton	\$17.70	\$15.00	\$28.00	\$14.00	\$4.89	\$22.55	\$12.78
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**Complete Hay Harvest - Shares**

% of Crop to Custom Provider	53	50.0	66.0	33.0	8.0	60.6	44.5
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**Ohio Farm Custom Rates 2020**

<b>Manure Application</b>	Average	Median	Max	Min	St. Dev.	Range	
Spread Manure / Acre	\$13.00	\$9.50	\$30.00	\$6.00	\$8.08	\$21.08	\$4.92
Hauling Liquid Manure / Without Frak Tank / Hour	\$100.00	\$100.00	\$125.00	\$60.00	\$19.46	\$119.46	\$80.54
Pump & Spread / Tank / Gallon	\$0.00833	\$0.00800	\$0.01000	\$0.00700	\$0.00125	\$0.00958	\$0.00709
Pump & Spread / Dragline / Gallon	\$0.00839	\$0.00800	\$0.01100	\$0.00650	\$0.00123	\$0.00962	\$0.00717
Pump, Spread & Incorporate / Dragline / Gallon	\$0.00958	\$0.00875	\$0.01400	\$0.00800	\$0.00213	\$0.01171	\$0.00745
Pump & Inject/Sidedress / Dragline / Gallon	\$0.00925	\$0.00900	\$0.01100	\$0.00800	\$0.00090	\$0.01015	\$0.00835
Extra Hose Charge - Over 1 mile From Lagoon/Pit / Gallon	\$0.00131	\$0.00100	\$0.00250	\$0.00050	\$0.00061	\$0.00192	\$0.00070
Additional Charge For Sand Bedding / Gallon	\$0.00084	\$0.00100	\$0.00150	\$0.00000	\$0.00044	\$0.00127	\$0.00040
Agitator - Charge / Gallon	\$0.00083	\$0.00085	\$0.00150	\$0.00035	\$0.00040	\$0.00122	\$0.00043
Agitation Boat / Hour	\$250.00	\$250.00	\$300.00	\$200.00	\$40.82	\$290.82	\$209.18
<b>Drainage and Tile Installation</b>							
<b>Drain Plow - without materials</b>							
4" Plastic / Foot	\$0.33	\$0.28	\$0.75	\$0.16	\$0.18	\$0.51	\$0.16
<b>Drain Plow - with materials</b>							
4" Plastic / Foot	\$0.64	\$0.60	\$1.25	\$0.48	\$0.18	\$0.82	\$0.46
Typical Depth Tile Installation / Inches	34.4	36.0	42.0	24.0	5.0	39.4	29.5
Typical Lateral Spacing Tile Installation / Feet	31.7	30.0	40.0	20.0	6.9	38.5	24.8
<b>Miscellaneous</b>							
	Average	Median	Max	Min	St. Dev.	Range	
Bush Hogging / Acre	\$14.50	\$15.00	\$20.00	\$9.00	\$3.77	\$18.27	\$10.73
Bush Hogging / Hour	\$52.00	\$45.00	\$115.00	\$20.00	\$25.24	\$77.24	\$26.76
Income Tax Preparation / Hour	\$157.50	\$125.00	\$350.00	\$70.00	\$97.20	\$254.70	\$60.30
Income Tax Preparation / Return	\$502.70	\$420.00	\$2,500.00	\$70.00	\$461.03	\$963.72	\$41.66
Track Hoe / Hour	\$117.20	\$122.50	\$200.00	\$65.00	\$34.45	\$151.67	\$82.77
Bulldozing per Foot of Blade / Hour	\$12.30	\$10.69	\$23.53	\$5.00	\$5.86	\$18.15	\$6.44
Clearing Land / Hour	\$144.00	\$130.00	\$300.00	\$65.00	\$71.37	\$215.37	\$72.63
Snow Removal : Loader / Hour	\$72.10	\$65.00	\$120.00	\$40.00	\$29.38	\$101.52	\$42.76
Snow Removal : Blade / Hour	\$51.80	\$32.50	\$120.00	\$22.00	\$39.68	\$91.43	\$12.07
Grinding Feed / Cwt.	\$1.00	\$0.95	\$1.25	\$0.85	\$0.15	\$1.15	\$0.85
Hauling Livestock / Mile	\$2.30	\$2.38	\$3.00	\$1.50	\$0.60	\$2.88	\$1.67
Scouting Crops / Acre	\$4.80	\$5.00	\$9.00	\$1.00	\$2.35	\$7.13	\$2.43
Soil Testing / Sample	\$9.40	\$10.00	\$13.50	\$3.00	\$3.08	\$12.51	\$6.36
Soil Testing / Acre	\$4.80	\$6.00	\$7.50	\$1.50	\$2.10	\$6.87	\$2.68
Grid Soil Testing / Acre	\$8.00	\$8.25	\$15.00	\$2.50	\$3.31	\$11.32	\$4.70
Average Grid Size	6.4	4.0	20.0	2.5	5.2	11.6	1.3
Power Washing / Hour	\$41.60	\$42.50	\$70.00	\$25.00	\$13.28	\$54.85	\$28.28

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**Ohio Farm Custom Rates 2020**

	Average	Median	Max	Min	St. Dev.	Range	
<b>Machinery Rental</b>							
Tractor / \$ per Horsepower / Hour	\$0.31	\$0.25	\$1.33	\$0.07	\$0.29	\$0.59	\$0.02
Combine / Separator Hour	\$218.70	\$200.00	\$266.00	\$190.00	\$33.72	\$252.38	\$184.95
Combine / Acre	\$28.00	\$27.50	\$35.00	\$22.00	\$4.95	\$32.95	\$23.05
Grain Drill: Conventional / Acre	\$15.00	\$15.00	\$25.00	\$7.00	\$6.29	\$21.29	\$8.71
Average Width in Feet	21.3	15.0	40.0	15.0	10.8	32.1	10.4
Grain Drill: No-till / Acre	\$13.70	\$12.00	\$25.00	\$7.00	\$5.47	\$19.16	\$8.22
Average Width in Feet	19.2	15.0	40.0	10.0	8.6	27.8	10.5
Bobcat or Skidsteer Loader / Day	\$162.50	\$155.00	\$300.00	\$90.00	\$68.78	\$231.28	\$93.72
Dry Bulk Fert Applicator / Acre	\$5.40	\$5.25	\$8.00	\$3.00	\$1.84	\$7.25	\$3.58
Liquid Fertilizer Applicator / Acre	\$5.60	\$4.75	\$8.00	\$4.00	\$1.49	\$7.12	\$4.13
Anhydrous Ammonia Applicator / Acre	\$6.50	\$6.50	\$8.00	\$5.00	\$1.50	\$8.00	\$5.00
<b>Hired Labor</b>							
General Farm Labor	\$15.70	\$15.00	\$101.00	\$10.00	\$10.54	\$26.21	\$5.13
Machine Operation / Hour	\$16.50	\$15.00	\$25.00	\$10.00	\$3.35	\$19.88	\$13.18
General Farm Labor Including Value of Benefits / Month	\$3,820	\$3,465	\$7,083	\$2,700	\$1,430	\$5,254	\$2,394
Hours Worked Per Week / Average	49	50	60	20	11	59	38

Max = Maximum, Min = Minimum, St. Dev. = Standard deviation

Range = Average +/- 1 Standard Deviation,

<sup>1</sup> Standard deviation is a measure of the variability of the survey responses. One "standard deviation" both above and below the average (mean) includes approximately two-thirds of all survey responses.



### Estimating Machinery Rental Rate from Custom Rates

Below are the calculations for you to estimate machinery rental rate from the custom rate tables in the preceding pages of this fact sheet. The examples shown will be for a field cultivator.

1. Multiply the custom charge (includes labor, fuel, tractor) by the percent\* of the custom charge for other associated costs such as interest, insurance, depreciation, and repairs.

$$\text{custom charge} \times \text{percent of custom charge} = \text{machinery rental rate}$$

*\* For the percent of custom charge, use:  
70% for tillage or 80% for planting and harvesting*

*Example:* From the 2020 custom rate tables above, the rate for a field cultivator (with tractor) is \$14.50/acre. The percent of custom charge for other associated costs is 70% for tillage.

$$\text{custom charge} \times \text{percent of custom charge} = \text{machinery rental rate}$$

$$\$14.50/\text{acre} \times 70\% = \$10.15/\text{acre}$$

2. Calculate the tractor rental value if the tractor is not included in the estimate from a custom operator. Multiply the amount of horse power(HP) by the rental rate per horse-power hour (HP-hour). Divide the product by the acres covered per hour.

$$(\text{HP} \times \text{per HP-hour rental rate}) \div \text{acres/hour} = \text{tractor rental rate}$$

*Example:* A 310 HP tractor with a \$0.31 per HP-hour rental rate taken from the above 2020 custom rate tables. The tractor (w/field cultivator) will cover 33 acres per hour.

$$\begin{aligned} (\text{HP} \times \text{per HP-hour rental rate}) \div \text{acres/hour} &= \text{tractor rental rate} \\ (310 \text{ HP} \times \$0.31) \div 33 \text{ acres/hour} &= \$2.91/\text{acre} \end{aligned}$$

3. From the machinery rental rate, subtract the tractor rental rate (#1 minus #2):

$$\text{machinery rental rate} - \text{tractor rental rate} = \text{implement rental value}$$

$$\$10.15/\text{acre} - \$2.91/\text{acre} = \$7.24/\text{acre}$$