

Department of Agricultural and Consumer Economics • College of Agricultural, Consumer and Environmental Sciences  
University of Illinois at Urbana-Champaign

### MACHINERY COST ESTIMATES: SUMMARY

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More details on costs in this publication are given in four publications available in the management section of *farmdoc* ([www.farmdoc.uiuc.edu](http://www.farmdoc.uiuc.edu)) within the machinery cost section.

**Table 1. List Prices and Estimated Costs Per Hour for Tractors of Different Sizes.**

Tractor <sup>1</sup>	List Price <sup>2</sup>	----- Costs -----			Fuel Use Per Hour
		Total	= Overhead	+ Fuel + Labor	
	\$/tractor	----- \$ per hour -----			gal.
85 PTO Hp Tractor	102,010	<b>59.70</b>	29.70	11.30 18.70	3.7
95 PTO Hp Tractor	107,970	<b>62.70</b>	31.40	12.60 18.70	4.2
110 PTO Hp Tractor	132,333	<b>71.80</b>	38.50	14.60 18.70	4.8
120 PTO Hp Tractor	137,717	<b>74.60</b>	40.00	15.90 18.70	5.3
140 PTO Hp Tractor	158,044	<b>83.10</b>	45.90	18.50 18.70	6.1
155 PTO Hp Tractor	166,954	<b>87.70</b>	48.50	20.50 18.70	6.8
175 PTO Hp Tractor	175,833	<b>93.00</b>	51.10	23.20 18.70	7.7
190 PTO Hp Tractor	216,382	<b>106.80</b>	62.90	25.20 18.70	8.3
225 PTO Hp Tractor, FWA	245,388	<b>119.80</b>	71.30	29.80 18.70	9.9
240 PTO Hp Tractor, FWA	255,371	<b>124.70</b>	74.20	31.80 18.70	10.5
270 PTO Hp Tractor, FWA	317,613	<b>146.80</b>	92.30	35.80 18.70	11.8
290 PTO Hp Tractor, FWA	347,530	<b>158.10</b>	101.00	38.40 18.70	12.7
310 PTO Hp Tractor, FWA	364,435	<b>165.70</b>	105.90	41.10 18.70	13.6
360 PTO Hp Tractor, 4WD	280,427	<b>147.90</b>	81.50	47.70 18.70	15.8
410 PTO Hp Tractor, 4WD	310,609	<b>163.30</b>	90.30	54.30 18.70	18.0
460 PTO Hp Tractor, 4WD	337,031	<b>177.60</b>	98.00	60.90 18.70	20.1
560 PTO Hp Tractor, 4WD	406,839	<b>211.20</b>	118.30	74.20 18.70	24.5

<sup>1</sup> "FWA" indicates a front wheel assist tractor. "4WD" indicates a four wheel drive tractor.

<sup>2</sup> List prices for 2015. Purchase price is assumed to be 85% of the list price.

<sup>3</sup> Sum of overhead, fuel, and labor costs.

<sup>4</sup> Includes depreciation, interest, insurance, housing, and repair costs. These per hour charges are appropriate for calculating rental costs when the person renting the tractor provides fuel and labor.

<sup>5</sup> Fuel costs are based on a price of \$2.50 per gallon for diesel fuel. Fuel costs vary depending on fuel use. Use varies with load on the tractor.

<sup>6</sup> Labor costs are based on a \$17.00 per hour labor charge. Labor time is assumed to be ten percent higher than tractor hours.

**Table 2. Per Acre Field Operation Costs.**

Operation	Total =	Tractor Overhead +	Implement Overhead +	Fuel & Lube +	Labor	Fuel Use
	----- \$ per acre -----					gal
<b>Primary tillage</b>						
Chisel plow	<b>15.40</b>	6.40	5.20	2.50	1.30	0.8
Horizontal disk, drag, rolling basket	<b>15.40</b>	5.20	6.70	2.20	1.30	0.7
Moldboard plow	<b>36.40</b>	15.10	11.00	6.30	4.00	2.0
Mulch tiller (disk, chisel)	<b>21.40</b>	9.50	6.50	3.60	1.80	1.2
Offset disk	<b>16.30</b>	6.30	4.80	2.60	2.60	0.7
Strip tillage	<b>23.20</b>	5.80	5.80	5.80	5.80	0.8
V-ripper (shanks only)	<b>18.30</b>	8.60	2.30	3.20	4.20	1.5
<b>Secondary tillage</b>						
Field cultivator	<b>10.10</b>	3.70	3.90	1.60	0.90	0.6
Mulch finisher (disk, chisel, drag)	<b>20.10</b>	6.80	8.70	2.80	1.80	1.0
Tandem disk	<b>12.10</b>	3.70	5.90	1.60	0.90	0.5
<b>Planting</b>						
Broadcast seeding	<b>8.00</b>	3.70	0.60	1.40	2.30	0.4
Conventional planter	<b>13.90</b>	2.40	9.60	1.00	0.90	0.3
Split-row planter <sup>1</sup>	<b>12.30</b>	2.50	7.80	1.10	0.90	0.4
No-till planter	<b>14.00</b>	3.50	3.50	3.50	3.50	0.5
Grain drill	<b>13.10</b>	3.90	6.00	1.60	1.60	0.5
No-till drill	<b>19.60</b>	4.90	4.90	4.90	4.90	0.6
Air Seeder	<b>15.10</b>	4.70	7.80	1.80	0.80	0.6
<b>Crop care</b>						
Rotary hoe	<b>5.50</b>	1.50	2.80	0.60	0.60	0.2
Row cultivating	<b>10.60</b>	3.90	4.10	1.60	1.00	0.5
<b>Spraying and ammonia application</b>						
Self-propelled	<b>3.80</b>		3.50	0.10	0.20	0.1
Pull-type	<b>3.70</b>	0.60	2.40	0.30	0.40	0.2
Anhydrous ammonia	<b>13.30</b>	3.20	7.50	1.90	0.70	0.6
<b>Mowing<sup>2</sup></b>	<b>31.50</b>	7.80	7.90	7.90	7.90	7.90

<sup>1</sup> Cost applies to soybean acres only.

<sup>2</sup> Mowing costs are \$126.30 per hour

**Table 3. Summary of Harvesting Costs.**

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<b>Combining<sup>1</sup></b>	
Corn	\$35.20 per acre
Soybean	\$31.10 per acre
<b>Grain Cart<sup>2</sup></b>	
Corn	\$12.50 per acre
Soybean	\$6.60 per acre
<b>Grain Hauling<sup>3</sup></b>	
	\$0.10 per bu.

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<sup>1</sup> Based on a 320 HP combine used on 1,900 acres.

<sup>2</sup> Based on a \$37,500 grain cart used on 1,900 acres.

<sup>3</sup> Hauling costs from field to storage will vary depending on distance to storage, unloading time, and other factors.

**Table 4. Costs of Forage Operations.**

Operation	Total =	Tractor Overhead +	Implement Overhead +	Fuel & Lube +	Labor
----- \$ per acre -----					
<b>Cutting and conditioning hay</b>					
Sickle bar mower	<b>18.70</b>	5.70	3.30	4.20	5.50
Rotary mower	<b>12.50</b>	3.00	4.20	2.30	3.00
Pull-type mower/conditioner	<b>18.60</b>	5.60	6.60	4.10	2.30
Self-propelled mower/conditioner	<b>28.80</b>	--	21.40	5.60	1.80
Rake (side delivery)	<b>7.90</b>	1.70	3.30	1.30	1.60
Rake (wheeled)	<b>5.20</b>	1.50	1.10	1.10	1.50
Tedder	<b>11.80</b>	6.80	1.90	1.70	1.40
<b>Baling hay</b>					
Small square baler	<b>26.60</b>	6.80	7.20	6.90	5.70
1,000 lb. square baler	<b>25.90</b>	5.30	14.30	4.20	2.10
Round baler	<b>24.00</b>	6.20	6.20	6.30	5.30
<b>Forage harvesting as silage</b>					
Pull-type forage harvester					
First cut hay	<b>22.40</b>	9.80	6.50	2.40	3.70
Remaining cuts	<b>17.60</b>	7.20	6.10	2.30	2.00
Corn silage	<b>86.80</b>	38.00	33.70	4.70	10.40
Self-propelled forage harvester					
First cut hay	<b>22.80</b>	--	12.90	8.30	1.60
Remaining cuts	<b>24.70</b>	--	21.30	2.00	1.40
Corn silage	<b>125.60</b>	--	114.50	7.00	4.10

From *Machinery Cost Estimates: Field Operations* and *Machinery Cost Estimates: Forage Field Operations* available on *farmdoc* ([www.farmdoc.uiuc.edu](http://www.farmdoc.uiuc.edu)).