



# 2024-25 Farm Machinery Custom and Rental Rate Guide

This guide has been established to provide approximate costs for renting equipment or obtaining custom farming operations from another farmer. It is not intended for establishing rates for individuals or companies that rent equipment or contract custom farming operations as a business.



# Table of Contents

Introduction .....	3
New Information for 2024-25 Guide .....	3
Caution .....	3
Methodology.....	3
Assumptions.....	4
Using the Guide.....	5
Additional Information .....	6
Factors to Consider When Custom Hiring.....	6
Summary .....	7
Power Units .....	8
Two Wheel Drive Tractors.....	8
Front Wheel Assist Tractors.....	8
Four Wheel Drive Tractors.....	8
Tracked Tractors.....	8
Harvesting Grain.....	9
Self-Propelled Combines.....	9
Combine Headers .....	9
Swathers.....	9
Grain Cart.....	10
Powered Auger .....	10
Grain Auger (PTO) .....	10
Grain Vac .....	10
Grain Dryers .....	11
Harvesting Hay.....	11
Self-Propelled (SP) Forage Harvester.....	11
Headers for SP Forage Harvester.....	11
SP Mowers/Conditioners.....	11
Pull-Type (PT) Mower/Conditioners .....	12
Hay Rakes (Wheel) .....	12
Balers .....	12
PT Bale Movers (Self Load/Unload) .....	13
SP Bale Mover.....	13
Seeding.....	14
Air Drills with Independent Openers.....	14
Air Hoe Drills.....	14
Air Disc Drills.....	14
Air Seeders .....	14
Other Row Crop Planters.....	15
Soil Preparation.....	15
Cultivators .....	15
Harrows .....	15
Vertical Tillage Tools.....	16
Land Roller .....	16

Land Scraper .....	16
Sprayers .....	16
High Clearance Sprayer .....	16
Miscellaneous .....	17
Post Pounders .....	17
Vertical Feed Mixer .....	17
Grinder Mixers, Feed Mixers and Bale Processors .....	17
Manure Spreader (Solid).....	17
Appendix A: Cost of Hauling Grain from Field to Yard .....	18
Appendix B: Rental Rates for Farm Buildings and Bins .....	19
Appendix C: Combine Classifications .....	19
Appendix D: Assumptions for Machinery Cost Calculations .....	20
Appendix E: Fuel Consumption Based on Engine Size .....	21
Appendix F: Conversion Tables .....	22

# Introduction

This guide provides approximate costs for renting equipment or obtaining custom farming operations from another farmer. It is updated every two years.

The guide is applicable to two different situations.

One is to suggest a fair price when one farmer either rents a piece of equipment from another farmer or hires the other to do a farming operation (e.g., seeding, spraying, harvesting). This situation is different than obtaining the services of someone who rents equipment or does custom operations as a business. In those cases, prices will be set by the business and those in need of the services are encouraged to obtain quotes to compare options. The rates in this guide are to be used as a guideline for cost recovery of equipment from farmer to farmer. These are not calculations for costing a business. Commercial custom operations will have additional business costs, such as extra liability insurance, overhead, skilled labour, etc.

The other situation this guide can be used for is when farmers share equipment and need to establish the value that each farm is receiving.

## New Information in the 2024-25 Guide

The assumptions and calculations for the 2024-2025 guide are generally the same as those used in the previous guide, with the following exceptions based on the current market and industry practices:

- Diesel fuel price updated to \$1.417/L.
- Labour rate increased from \$27.00/hr. to \$28.00/hr

## Caution

Nearly every situation has unique circumstances and conditions which this guide does not address. Individuals must make suitable adjustments to cover their unique situation. The assumptions in this guide can have an impact on the suggested rental and custom rates (e.g., annual hours of use, financing costs). It is the responsibility of both parties to agree to acceptable terms before entering into a contract.

The equipment prices used in this guide are manufacturer's suggested retail price (MSRP). All custom and rental rates are derived using the MSRP. However, purchasers may pay different prices for equipment depending on specific negotiations and dealer incentives. It is possible that the final price paid may be below the MSRP. Users are encouraged to use actual purchase prices when determining their rates.

## Methodology

A critical step in establishing a rental rate is defining the cost of equipment ownership and the cost of operating and maintaining equipment. A brief description on the methodology used in calculating ownership and operating cost is below.

**Operating Costs** include repair and maintenance (broken and worn parts, oil, filters, and labour for repair and service) and fuel use. In addition, labour costs and a 15 per cent margin to cover unexpected incidentals that affect operating costs are also included.

## Assumptions

In all cases, it is reasonable to assume that rented machinery is in good repair and can perform the intended task in the same manner and at the same productive rate as similar machines of equal specification, ratings or category, regardless of age.

## Cost of Ownership

Includes the cost of depreciation of the equipment due to use and years in service. Cost of ownership also includes an investment cost (i.e., the cost to borrow money to purchase the equipment and/or the lost interest revenue if that money had been invested) as well as housing and insurance costs. The cost of ownership also includes a 15 per cent margin to cover unexpected incidentals or fluctuations in equipment costs. To generate a suggested rental rate on a \$/hour basis, the cost of ownership was tallied for the life of the equipment, then the total hours of use over the life of the equipment was estimated to generate a rental rate on a \$/hour basis.

**Equipment Depreciation:** The cost of equipment depreciation accounts for purchase price, salvage value and years of service (also called optimal life). In this guide, the purchase price is based on the average of the base list price and the list price for that machine with all available options. For each piece of equipment and size category listed, efforts were made to gather information from a minimum of two manufacturers. Please note that equipment prices used are manufacturer's suggested retail prices.

The optimal life of an equipment is the number of years of service before the equipment value declines to one third of its original value. The salvage value is therefore assumed to always be 33 per cent of the original purchase price, but the years of service varies for each piece of equipment. Appendix D lists the optimal life and estimated annual hours of use for all equipment used in this guide. The depreciated value (purchase price minus salvage value) is split equally among the years of service of the equipment. This is because after the first year of use, most machinery depreciates at a consistent rate over the next 10–15 years with typical use.

This method of depreciation is different than what is often used for tax purposes (capital cost allowance). While the capital cost allowance method may be preferable for estimating depreciation for capital recovery purposes, the method used in this guide allows for the calculation of consistent custom and rental rates regardless of the age and value of the equipment. The assumption is that the depreciated value will be split evenly over the years the equipment can be rented.

**Financing Cost:** It is assumed that 25 per cent of the initial price is covered by the value of a trade-in and/or a cash payment, with the remaining 75 per cent financed. It is also assumed the loan will be paid back through equal biannual installments over seven years. The cost to borrow 75 per cent of the purchase price was based on an average interest rate for equipment loans with a seven-year amortization. This annual borrowing rate is set at 8.5 per cent. The financing cost also includes an opportunity cost on the interest which could be earned if the down payment was invested in the markets rather than equipment. The opportunity rate is set at 1.5 per cent annually and is compounded monthly. Many producers are able to secure lower interest rates or have different payback schedules. These parameters can be accommodated in the online calculator that allows producers to enter user-specific information to generate more accurate rental and custom rates. Visit [saskatchewan.ca](http://saskatchewan.ca) and search "Custom Rate and Rental Guide" to access the calculator.

**Insurance and Housing:** It is reasonable to expect that equipment owners will carry suitable insurance against accidental damage and for liability. Suitable housing (equipment storage) also helps maintain equipment value and performance. These annual costs have been set at one per cent of the original purchase price of the machine.

## Operating Costs

**Repair and Maintenance:** Each machine's annual usage is typically measured in hours. Routine maintenance, such as oil, lubricants and filters, as well as component wear or damage, is associated with hours of use regardless of when they occur over the machine's life. Averaging the lifetime maintenance costs on a per hour basis provides a fair distribution of the repair costs. The average yearly basic maintenance and repairs have been added to what would be considered one major repair during the equipment's optimal life. These repair costs are represented as a rate (percentage) of purchase price. This repair rate is then divided by the hours accumulated over its optimal life to represent these costs on a \$/hour basis.

Note that average repair and maintenance costs do not include extraordinary events brought about by extreme conditions, abuse or accident leading to large equipment damage.

**Fuel Costs:** Fuel cost is dependent upon fuel market price and can fluctuate dramatically. In this guide, the diesel fuel price is set to \$1.417/L based on current market prices and the removal of the five per cent Goods and Services Tax (GST) as this is an allowable business deduction. This fuel cost accounts for the removal of a portion of the provincial fuel tax, for which farmers and custom operators are both eligible as a fuel permit exemption holder. Fuel costs do not include a carbon tax because most activities in the guide would be considered exempt. Any power unit's fuel use is highly dependent upon the load (percentage of available power being used) and duty cycle (percentage of time at particular loads). To determine the cost based on average fuel efficiency, a 75 per cent load is assumed.

For alternative loads, fuel usage can be determined by using the charts in Appendix E.

The type of power unit and the operating conditions (yield, moisture, soil type, terrain, etc.) will also affect fuel use. For similar tasks, there can be a wide variation in fuel cost. For this reason, it is fair if the renter supplies or purchases fuel separately from the rental rate. A fuel cost estimate has been included based upon typical use and should be used only as a ballpark indication of what fuel cost might be.

**Labour Rate:** The labour rate has been set at \$28 per hour based on the labour market in the agricultural sector in western Canada. This rate will vary depending upon availability and the individual's experience and skills. If more accurate labour costs are needed to reflect the skill levels required for different operations, producers can use the online calculator to input their own values.

**Margin:** When performing custom farming operations, conditions can be unpredictable. To account for unexpected cost increases brought about by difficult situations, a margin (or cushion) is included in the estimated custom rate. This margin has been set at 15 per cent to coincide with typical industry practices. For machinery rental, the margin is applied to both the ownership and repair and maintenance costs. For custom rates, the margin is also applied to labour and fuel costs. Note this margin does not cover overhead costs or other costs associated with business endeavors, nor does it cover the costs of a catastrophic breakdown.

**Work Rate:** Instantaneous work rates are calculated based upon the implement's working width and its travel speed. However, in all field operations, there is a difference between the instantaneous work rate and the average work rate accomplished over several hours. This is referred to as field efficiency. Field efficiency can vary greatly depending upon working conditions (field size and topography, soil or crop conditions, suitability of the equipment for the task and availability of support equipment). For this guide, a field efficiency of 80 per cent has been applied to all tasks.

## Using the Guide

**Per Acre Rate:** Equipment rental or custom hourly rate is determined by adding all yearly costs together and then dividing the result by the estimated annual hours of use. The hourly rate (\$/hr.) is then divided by the work rate (acre/hr.) to calculate a cost per acre rate. The \$/acre rate is often used because it fixes the renter's cost and allows the owner/operator to adjust the operation to the conditions.

**Hours of Use Impact:** When machinery is shared between cooperating farmers, a cost often needs to be assigned for the usage of each machine to define the value of its contribution. The annual hours of use will greatly influence the \$/hr. rate. When yearly costs are divided by low hours of use, the \$/hr. increases significantly. High hours of use will reduce the \$/hr. This method tends to exaggerate the difference because it does not consider the effect on retained value, which is often determined by the machine's total hours. To achieve a fair evaluation, the effect of varying annual hours of use on the salvage value must be considered.

## Additional Information

A downloadable copy of this guide can be found on [saskatchewan.ca/agriculture](http://saskatchewan.ca/agriculture). Copies can also be requested from the Agriculture Knowledge Centre at 1-866-457-2377, or from your nearest Saskatchewan Agriculture Regional Office.

**Online Calculator:** An online calculator is also available on [saskatchewan.ca/agriculture](http://saskatchewan.ca/agriculture). The online calculator allows producers to enter user-specific information that may have a large impact on the rental or custom rate (e.g. interest rate, purchase price, annual hours of use, labour rate, etc.). The calculator can be used for any piece of equipment (not just those listed in the guide or in the drop-down menus), as long as the user has values for purchase price, salvage value, annual hours of use, etc.

## Factors to Consider When Custom Hiring

Custom hiring is a business arrangement. The terms of the arrangement should be written in a formal agreement. If unwritten, the terms are more likely to be misunderstood, which may lead to a dispute. The following factors should be considered in a custom hiring agreement.

**Timeliness:** Significant loss can occur if an operation is not started or completed on time. To facilitate planning, a custom hiring agreement should include a schedule of operations for both parties. For example, when the custom combiner is picking up swathed grain, the schedule would outline time periods for swathing by the owner and time period for combining by the custom operator. Such a schedule would be subject to weather conditions and crop maturity.

**Operations:** The parties should write into the agreement the exact operations to be performed by each party and the machine, materials and labour to be supplied by each.

**Rate Schedule:** The custom operator should stipulate the rate for each operation to be performed on the basis of acreage, time (hour, day and week), or total operation performed.

**Management:** A custom hiring agreement should ensure that the custom operator will employ acceptable management practices in their operations.

**Terms Of Payment:** A custom hiring agreement should stipulate terms of payment. As well, the custom operator should bill the client upon the completion of each custom operation. The bill should indicate actual units completed (e.g. hours, acres, etc.), the rate charged per unit, the total charge and payment due date.

**Termination:** A minimum period for notice of termination should be included in a custom hiring agreement. A penalty should be stipulated for unjustified termination within the term of the agreement.

**Insurance:** A custom operator may be considered differently than a farmer when insuring. It is advised this point be clarified with an insurance company if a farmer considers doing custom work or renting equipment.

# Summary

Equipment	Description	Rental Rate (\$ per hour)			Custom Rate (\$ per hour)			Custom Rate* (\$ per acre or bale)		
Tractors	Two wheel drive Front wheel assist Four wheel drive Tracked	\$40.29 \$65.27 \$133.60 \$153.77	to to to to	\$50.51 \$120.48 \$173.96 \$248.06	\$111.60 \$139.84 \$268.46 \$264.19	to to to to	\$128.34 \$230.90 \$349.56 \$467.66			
Combine Combine Header Swather Grain Cart Grain Auger Grain Auger Grain Vac Grain Dryer	Rotary   Powered PTO	\$262.23 \$15.56 \$122.46 \$36.22 \$19.45 \$9.42 \$97.97 \$80.12	to to to to to to to to	\$530.33 \$284.43 \$163.28 \$112.29 \$32.14 \$98.10 \$141.51 \$295.51	\$364.50  \$190.51 \$304.68 \$149.26 \$209.56	to to to to to to to	\$709.19  \$254.14 \$461.84 \$268.17 \$269.85	\$33.77  \$12.10	to to	\$48.94  \$14.65
SP Forage Harvester SP Forage Header Mower Conditioner Mower Conditioner Hay Rakes Baler  Baler Bale Mover Bale Mover	Self Propelled Pull Type  Small Square Large Square Round Pull Type Self Propelled	\$382.42 \$32.69 \$209.68 \$21.77 \$26.82 \$31.39 \$144.60 \$49.38 \$36.22	to to to to to to to to to	\$516.98 \$122.57 \$370.03 \$49.81 \$80.46 \$40.02 \$192.33 \$92.59 \$80.46	\$543.36  \$294.03 \$133.37 \$138.42 \$142.99 \$284.44 \$160.97 \$176.06	to to to to to to to to	\$746.36  \$506.52 \$161.41 \$192.06 \$151.62 \$362.40 \$204.18 \$250.53	\$33.88  \$22.02 \$13.45 \$9.60 \$0.82 \$7.11 \$9.47	to to to to to to to	\$93.52  \$32.67 \$33.34 \$13.84 \$0.87 \$9.06 \$17.02
Air Drills Air Hoe Drills Air Disc Drills Air Seeders Row Crop Planters		\$254.05 \$181.39 \$362.78 \$255.76 \$288.33	to to to to to	\$603.36 \$453.48 \$574.41 \$483.11 \$712.34	\$522.50 \$449.85 \$669.54 \$524.22 \$428.17	to to to to to	\$952.92 \$803.04 \$923.96 \$789.86 \$943.24	\$31.76 \$28.12 \$33.00 \$26.33 \$32.94		\$37.32 \$33.46 \$35.24 \$34.95 \$37.94
Cultivators Cultivators Harrows Harrows Vertical Tillage Tools Vertical Tillage Tools Land Roller Land Scraper	Field Heavy duty Mid, Heavy Packers Compact, high speed Heavy duty	\$42.29 \$52.86 \$93.22  \$108.72 \$157.65 \$31.39 \$142.08	to to to  to to to to	\$74.00 \$84.57 \$105.72 \$15.38 \$163.08 \$271.81 \$115.10 \$284.16	\$273.19 \$321.31 \$361.67 \$185.45 \$377.18 \$464.40 \$171.23 \$410.54	to to to to to to to to	\$380.76 \$434.13 \$455.27 \$185.45 \$512.64 \$621.36 \$383.56 \$633.71	\$14.10 \$16.08 \$7.09  \$16.54 \$23.90 \$10.09		\$18.21 \$21.42 \$8.93 \$5.80 \$23.57 \$33.17 \$19.03
Sprayers	High Clearance	\$523.00	to	\$767.58	\$622.01	to	\$913.85	\$8.89	to	\$9.53
Post Pounder Vertical Feed Mixers Grinder Mixer Feed Mixer Bale Processor Manure Spreaders	    Chain Unload Side Discharge Hydraulic Push	\$29.43 \$24.71 \$42.32  \$24.19 \$61.05 \$113.38 \$130.83	to to to  to to to to	\$56.60 \$57.47 \$54.42 \$39.30 \$41.12 \$97.68 \$165.71 \$165.71	\$136.50 \$164.56 \$182.17 \$179.14 \$164.03 \$200.89 \$253.22 \$270.67	to to to to to to to to	\$168.19 \$288.38 \$224.49 \$211.18 \$237.52 \$335.78 \$335.78			
Hauling grain from field to yard	\$0.33 per bushel for first 3 miles (please refer appendix A for details)									
Rental rates includes value of equipment only. Custom rates include value of equipment, power unit (if required), fuel and labor. *Exercise caution when using custom rate per acre as the combination of machinery and equipment used in this guide may not reflect actual situations. They should be used as a guideline only.										

# Power Units

## Two Wheel Drive Tractors

Machine Size	MSRP	Litre/Hour	Ownership Cost (\$/hr.)	Repair & Maintenance Cost (\$/hr.)	Margin on Ownership & R&M (\$/hr.)	Rental Rate (\$/hr.)	Fuel Cost (\$/hr.)	Labour Cost (\$/hr.)	Margin on labour & fuel (\$/hr.)	Custom Rate (\$/hr.)
100-119 hp.	\$130,000	24	25.02	10.01	5.25	40.29	34.01	28.00	9.30	111.60
120+ hp.	\$163,000	28	31.37	12.55	6.59	50.51	39.68	28.00	10.15	128.34

Annual hours of use: 300

Fuel type is diesel, with a 75% load assumption. To calculate fuel consumption with alternative load refer to **Appendix E**.

Power rating represents PTO power. If tractor rating is given in net engine power, multiply by 0.88 to get PTO power.

## Front Wheel Assist Tractors

Machine Size	MSRP	Litre/Hour	Ownership Cost (\$/hr.)	Repair & Maintenance Cost (\$/hr.)	Margin on Ownership and R&M (\$/hr.)	Rental Rate (\$/hr.)	Fuel Cost (\$/hr.)	Labour Cost (\$/hr.)	Margin on Labour and Fuel (\$/hr.)	Custom Rate (\$/hr.)
Small (average) 100-159 hp.	\$253,000	26	41.41	15.35	8.51	65.27	36.84	28.00	9.73	139.84
Medium (average) 160-224 hp.	\$307,000	36	50.25	18.62	10.33	79.20	51.01	28.00	11.85	170.07
Large (average) 225+ hp.	\$467,000	48	76.44	28.33	15.72	120.48	68.02	28.00	14.40	230.90

Annual hours of use: 450

Fuel type is diesel, with a 75% load assumption. To calculate fuel consumption with alternative load refer to **Appendix E**.

Power rating represents PTO power. If tractor rating is given in net engine power, multiply by 0.88 to get PTO power.

## Four Wheel Drive Tractors

Machine Size	MSRP	Litre/Hour	Ownership Cost (\$/hr.)	Repair & Maintenance Cost (\$/hr.)	Margin on Ownership and R&M (\$/hr.)	Rental Rate (\$/hr.)	Fuel Cost (\$/hr.)	Labour Cost (\$/hr.)	Margin on Labour and Fuel (\$/hr.)	Custom Rate (\$/hr.)
Small (average) 350-449 hp.	\$523,000	63	85.60	30.57	17.43	133.60	89.27	28.00	17.59	268.46
Medium (average) 450-549 hp.	\$590,000	76	96.57	34.48	19.66	150.71	107.69	28.00	20.35	306.76
Large (average) 550+ hp.	\$681,000	88	111.46	39.80	22.69	173.96	124.70	28.00	22.90	349.56

Annual hours of use: 450

Fuel type is diesel, with a 75% load assumption. To calculate fuel consumption with alternative load refer to **Appendix E**.

Power rating represents engine power.

## Tracked Tractors

Machine Size	MSRP	Litre/Hour	Ownership Cost (\$/hr.)	Repair & Maintenance Cost (\$/hr.)	Margin on Ownership and R&M (\$/hr.)	Rental Rate (\$/hr.)	Fuel Cost (\$/hr.)	Labour Cost (\$/hr.)	Margin on Labour and Fuel (\$/hr.)	Custom Rate (\$/hr.)
300-359 hp.	\$561,000	48	91.82	41.89	20.06	153.77	68.02	28.00	14.40	264.19
360-449 hp.	\$643,000	77	105.24	48.01	22.99	176.24	109.11	28.00	20.57	333.92
450-549 hp.	\$771,000	110	126.20	57.57	27.56	211.33	155.87	28.00	27.58	422.78
550-599 hp.	\$814,000	112	133.23	60.78	29.10	223.11	158.70	28.00	28.01	437.82
600+ hp.	\$905,000	115	148.13	67.57	32.36	248.06	162.96	28.00	28.64	467.66

Annual hours of use: 450

Fuel type is diesel, with a 75% load assumption. To calculate fuel consumption with alternative load refer to **Appendix E**.

Power rating represents engine power.

# Harvesting Grain

## Self Propelled Combines

Machine Size	MSRP	Litre/Hour	Ownership Cost (\$/hr.)	Repair & Maintenance Cost (\$/hr.)	Margin on Ownership and R&M (\$/hr.)	Rental Rate (\$/hr.)	Fuel Cost (\$/hr.)	Labour Cost (\$/hr.)	Margin on Labour and Fuel (\$/hr.)	Custom Rate (\$/hr.)	Work Rate (acre/hr.)
Class 5 Rotary ≤ 300 hp.	\$492,000	43	176.27	51.76	34.20	262.23	60.93	28.00	13.34	364.50	8
Class 6 Rotary 301 - 360 hp.	\$679,000	51	243.27	71.43	47.20	361.90	72.27	28.00	15.04	477.21	10
Class 7 Rotary 361 - 420 hp.	\$781,000	55	279.81	82.16	54.30	416.27	77.94	28.00	15.89	538.10	12
Class 8 Rotary 421 - 500 hp.	\$868,000	71	310.98	91.31	60.34	462.64	100.61	28.00	19.29	610.54	15
Class 9 Rotary 501 - 560 hp.	\$914,000	82	327.46	96.15	63.54	487.16	116.19	28.00	21.63	652.98	17
Class 10 Rotary 561+ hp.	\$995,000	90	356.48	104.67	69.17	530.33	127.53	28.00	23.33	709.19	21

Rotary annual hours of use (based on separator annual hours of usage): 250  
Fuel type is diesel, with a 75% load assumption. To calculate fuel consumption with alternative load refer to Appendix E.

## Combine Headers

Machine Size	MSRP	Ownership Cost (\$/hr.)	Repair & Maintenance Cost (\$/hr.)	Margin on Ownership and R&M (\$/hr.)	Rental Rate (\$/hr.)
<b>Pickup Headers</b>					
12 ft.	\$46,000	10.62	2.91	2.03	15.56
15 ft.	\$48,000	11.09	3.03	2.12	16.24
<b>Rigid Headers</b>					
20-25 ft.	\$56,000	12.93	4.70	2.65	20.28
30-35 ft.	\$77,000	17.78	6.47	3.64	27.89
<b>Flex Headers</b>					
20 ft.	\$51,000	15.03	5.37	3.06	23.45
25 ft.	\$59,000	17.38	6.21	3.54	27.13
30 ft.	\$72,000	21.21	7.57	4.32	33.11
35 ft.	\$82,000	24.16	8.63	4.92	37.70
<b>Draper Headers</b>					
25 ft.	\$105,000	30.94	12.35	6.49	49.78
30 ft.	\$127,000	37.42	14.94	7.85	60.20
35 ft.	\$133,000	39.18	15.64	8.22	63.05
40-45 ft.	\$141,000	41.54	16.58	8.72	66.84
<b>Corn Header</b>					
6 row, 30" spacing	\$84,000	61.87	24.70	12.98	99.55
8 row, 30" spacing	\$111,000	81.76	32.63	17.16	131.55
12 row, 30" spacing	\$173,000	127.42	50.86	26.74	205.03
16-18 row, 20-30" spacing	\$240,000	176.77	70.56	37.10	284.43

Pick-up header annual hours of use: 250  
Rigid header annual hours of use: 250  
Flex header annual hours of use: 250  
Draper header annual hours of use: 250  
Corn header annual hours of use: 100  
  
Rigid, flex and draper headers include pickup reels.  
  
Calculation to determine the custom rate (\$/acre) for a combine using a specific combine header:  
  
$$\text{Custom Rate (\$/acre)} = \frac{\text{Combine Custom Rate (\$/hr)} + \text{Header Rental Rate (\$/hr)}}{\text{Work Rate (acre/hr)}}$$
  
  
Example: For a Class 8 Rotary combine with a 30 ft. flex header:  
  
$$\text{Custom Rate (\$/acre)} = \frac{\$610.54 + \$33.11}{15} = \$42.91/\text{acre}$$

## Swathers

Machine Size	MSRP	Litre/Hour	Ownership Cost (\$/hr.)	Repair & Maintenance Cost (\$/hr.)	Margin on Ownership and R&M (\$/hr.)	Rental Rate (\$/hr.)	Fuel Cost (\$/hr.)	Labour Cost (\$/hr.)	Margin on Labour and Fuel (\$/hr.)	Custom Rate (\$/hr.)	Work Rate (acre/hr.)	Custom Rate (\$/acre)
<b>SP Swathers - Draper Header</b>												
25 ft.	\$225,000	22	82.86	23.63	15.97	122.46	31.17	28.00	8.88	190.51	13	14.65
30 ft.	\$265,000	32	97.59	27.83	18.81	144.23	45.34	28.00	11.00	228.58	16	14.29
35 ft.	\$295,000	36	108.64	30.98	20.94	160.56	51.01	28.00	11.85	251.42	19	13.23
40 ft.	\$300,000	36	110.48	31.50	21.30	163.28	51.01	28.00	11.85	254.14	21	12.10

Annual hours of use: 200  
Fuel type is diesel, with a 75% load assumption. To calculate fuel consumption with alternative load refer to Appendix E.  
Fuel efficiency is based on 126 hp (18-22' swather), 126 hp (25' swather), 190 hp (30' swather), and 226 hp (35' and higher swather).

# Harvesting Grain cont'd

## Grain Cart

Machine Size	MSRP	Ownership Cost (\$/hr.)	Repair & Maintenance Cost (\$/hr.)	Margin on Ownership and R&M (\$/hr.)	Rental Rate (\$/hr.)	Power Unit Cost (\$/hr.)	Custom Rate (\$/hr.)
Small 500-1000 bu.	\$100,000	23.10	8.40	4.72	36.22	350 hp. 268.46	304.68
Medium 1050-1600 bu.	\$220,000	50.81	18.48	10.39	79.69	450 hp. 306.76	386.44
Large 2000 bu.	\$310,000	71.60	26.04	14.65	112.29	550+ hp. 349.56	461.84

Annual hours of use: 250

Power unit cost includes fuel, labour and margin. The power unit for small, medium and large grain carts is a 4WD tractor.

To obtain a total cost for grain cart, power unit, and fuel (but not labour), subtract \$32.20 from the Custom Rate (\$28/hr labour plus 15% margin).

## Powered Auger

Machine Size	MSRP	Ownership Cost (\$/hr.)	Repair & Maintenance Cost (\$/hr.)	Margin on Ownership and R&M (\$/hr.)	Rental Rate (\$/hr.)
8" 30-39 ft., 20 hp. engine	\$23,000	13.28	3.63	2.54	19.45
8" 40-49 ft., 20 hp. engine	\$24,000	13.86	3.79	2.65	20.30
8" 50-59 ft., 25 hp. engine	\$25,000	14.44	3.95	2.76	21.14
10" 40-49 ft., 35 hp. engine	\$27,000	15.59	4.27	2.98	22.83
10" 50-59 ft., 38 hp. engine	\$31,000	17.90	4.90	3.42	26.22
12-13" 39-40 ft., 38-50 hp. engine	\$38,000	21.94	6.00	4.19	32.14

Annual hours of use: 100

Value of engine is included in rental rate. Rate does not include fuel or maintenance costs for engine.

## Grain Auger (PTO)

Machine Size	MSRP	Ownership Cost (\$/hr.)	Repair & Maintenance Cost (\$/hr.)	Margin on Ownership and R&M (\$/hr.)	Rental Rate (\$/hr.)	Power Unit Cost (\$/hr.)	Custom Rate (\$/hr.)
8" 30-69 ft. 2,700-3,200 bu./hr.	\$12,000	6.93	1.26	1.23	9.42	50 hp. 139.84	149.26
10" 40-89 ft. 5,400 bu./hr.	\$25,000	14.44	2.63	2.56	19.62	75 hp. 139.84	159.46
13" 70-100 ft. 9,700 bu./hr.	\$55,000	31.76	5.78	5.63	43.16	100 hp. 139.84	183.00
16" 80-100 ft. 21,000 bu./hr.	\$90,000	51.97	9.45	9.21	70.63	200 hp. 170.07	240.70
16" 100+ ft. 21,000 bu./hr.	\$125,000	72.18	13.13	12.80	98.10	200 hp. 170.07	268.17

Annual hours of use: 100

The power units for all PTO augers are front wheel assist tractors. Note that the smallest front wheel assist tractor available in this guide is 100 hp., so the power unit cost for equipment that requires a smaller power unit may be over-estimated. Power unit cost includes fuel, labour and margin. To obtain a total cost for auger, power unit, and fuel (but not labour), subtract \$32.20 from the Custom Rate (\$28/hr labour plus 15% margin).

## Grain Vac

Machine Size	MSRP	Ownership Cost (\$/hr.)	Repair & Maintenance Cost (\$/hr.)	Margin on Ownership and R&M (\$/hr.)	Rental Rate (\$/hr.)	Power Unit Cost (\$/hr.)	Custom Rate (\$/hr.)
2400-5000 bu./hr.	\$45,000	66.29	18.90	12.78	97.97	70 hp. 111.60	209.56
6000-10,000 bu./hr.	\$65,000	95.75	27.30	18.46	141.51	120 hp. 128.34	269.85

Annual hours of use: 50

The power units for all grain vacs are two wheel drive tractors. Note that the smallest two wheel drive tractor available in this guide is 100 hp, so the power unit cost for equipment that requires a smaller power unit may be over-estimated. Power unit cost includes fuel, labour and margin. To obtain a total cost for auger, power unit, and fuel (but not labour), subtract \$32.20 from the Custom Rate (\$28/hr labour plus 15% margin).

# Harvesting Grain cont'd

Harvesting Grain Grain Dryers					
Machine Size	MSRP	Ownership Cost (\$/hr.)	Repair & Maintenance Cost (\$/hr.)	Margin on Ownership & R&M (\$/hr.)	Rental Rate (\$/hr.)
275-370 bu./hr.	\$122,000	59.91	9.76	10.45	80.12
420-610 bu./hr.	\$144,000	70.71	11.52	12.33	94.56
710-910 bu./hr.	\$193,000	94.77	15.44	16.53	126.74
1060-1180 bu./hr.	\$280,000	137.49	22.40	23.98	183.87
1440-2380 bu./hr.	\$350,000	171.86	28.00	29.98	229.84
3000-4000 bu./hr.	\$450,000	220.97	36.00	38.54	295.51

Annual hours of use: 150

\*Rental rate refers to equipment only. Power and fuel (propane or natural gas) consumption is highly dependent on ambient temperature, grain type and required moisture reduction. Energy requirements require a separate calculation by specialized calculators that are not included in this guide.

# Harvesting Hay

## Self Propelled Forage Harvester

Machine Size	MSRP	Litre/Hour	Ownership Cost (\$/hr.)	Repair & Maintenance Cost (\$/hr.)	Margin on Ownership and R&M (\$/hr.)	Rental Rate (\$/hr.)	Fuel Cost (\$/hr.)	Labour Cost (\$/hr.)	Margin on Labour and Fuel (\$/hr.)	Custom Rate (\$/hr.)
Small 400-599 hp.	\$702,000	79	185.12	147.42	49.88	382.42	111.94	28.00	20.99	543.36
Medium 600-799 hp.	\$835,000	103	220.19	175.35	59.33	454.88	145.95	28.00	26.09	654.92
Large 800-899 hp.	\$949,000	121	250.26	199.29	67.43	516.98	171.46	28.00	29.92	746.36

Annual hours of use: 400

Fuel type is diesel, with a 75% load assumption. To calculate fuel consumption with alternative load refer to Appendix E.

## Headers for Self Propelled Forage Harvester

Machine Size	MSRP	Ownership Cost (\$/hr.)	Repair & Maintenance Cost (\$/hr.)	Margin on Ownership and R&M (\$/hr.)	Rental Rate (\$/hr.)	Work Rate (acre/hr.)	Rental Rate (\$/acre)
Windrow Pickup, 12-17 ft. width	\$60,000	15.82	12.60	4.26	32.69	17	1.92
Corn, 14-20 ft. width	\$175,000	46.15	36.75	12.43	95.33	9	10.59
Corn, 21-30 ft. width	\$225,000	59.33	47.25	15.99	122.57	13	9.43

Annual hours of use: 400

Calculation to determine the custom rate (\$/acre) for a SP or PT forage harvester using a specific header:

Custom Rate (\$/acre) =  $\frac{\text{Forage Harvester Custom Rate (\$/hr)} + \text{Header Rental Rate (\$/hr)}}{\text{Work Rate (acre/hr.)}}$

Example: For a 500 hp SP Forage Harvester with a 15 FT windrow pickup header:

Custom Rate (\$/acre) =  $\frac{\$543.36 + \$32.69}{17}$

Custom Rate (\$/acre) = \$33.88

## Self Propelled Mower/Conditioners

Machine Size	MSRP	Litre/Hour	Ownership Cost (\$/hr.)	Repair & Maintenance Cost (\$/hr.)	Margin on Ownership and R&M (\$/hr.)	Rental Rate (\$/hr.)	Fuel Cost (\$/hr.)	Labour Cost (\$/hr.)	Margin on Labour and Fuel (\$/hr.)	Custom Rate (\$/hr.)	Work Rate (acre/hr.)	Custom Rate (\$/acre)
Disc Mower Conditioner 13-19 ft.	\$292,000	36	143.38	65.41	31.32	240.11	51.01	28.00	11.85	330.97	12	27.58
Disc Mower Conditioner 30 ft.	\$450,000	64	220.97	100.80	48.26	370.03	90.69	28.00	17.80	506.52	23	22.02
Sickle Mower Conditioner 14-18 ft.	\$255,000	32	125.21	57.12	27.35	209.68	45.34	28.00	11.00	294.03	9	32.67

Annual hours of use: 150

Fuel type is diesel, with a 75% load assumption. To calculate fuel consumption with alternative load refer to Appendix E.

Fuel efficiency is based on 226 hp (16' disc), 400 hp (30' disc), and 190 hp (18' sickle).

# Harvesting Hay cont'd

## Pull Type Mower/Conditioners

Machine Size	MSRP	Ownership Cost (\$/hr.)	Repair & Maintenance Cost (\$/hr.)	Margin on Ownership and R&M (\$/hr.)	Rental Rate (\$/hr.)	Power Unit Cost (\$/hr.)	Custom Rate (\$/hr.)	Work Rate (acre/hr.)	Custom Rate (\$/acre)
<b>Sickle</b> 9-10 ft.	\$30,000	14.73	4.20	2.84	21.77	50 hp. 111.60	133.37	4	33.34
14-16 ft.	\$55,000	27.01	7.70	5.21	39.91	100 hp. 111.60	151.51	8	18.94
<b>Disc</b> 7-9 ft. side pull	\$40,000	19.64	7.01	4.00	30.65	60 hp. 111.60	142.25	7	20.32
14 ft.	\$55,000	27.01	9.64	5.50	42.15	90 hp. 111.60	153.74	9	17.08
16-18 ft.	\$65,000	31.92	11.40	6.50	49.81	100 hp. 111.60	161.41	12	13.45

Sickle annual hours of use: 150

Disc annual hours of use: 150

The power units for all Pull Type mower/conditioners are two wheel drive tractors. Note that the smallest two wheel drive tractor available in this guide is 100 hp., so the power unit cost for equipment that requires a smaller power unit may be over-estimated. Power unit cost includes fuel, labour and margin for tractor.

## Hay Rakes (Wheel)

Machine Size	MSRP	Ownership Cost (\$/hr.)	Repair & Maintenance Cost (\$/hr.)	Margin on Ownership and R&M (\$/hr.)	Rental Rate (\$/hr.)	Power Unit Cost (\$/hr.)	Custom Rate (\$/hr.)	Work Rate (acre/hr.)	Custom Rate (\$/acre)
16-20 ft. wheel	\$15,000	17.32	6.00	3.50	26.82	50 hp. 111.60	138.42	10.0	13.84
21-30 ft. wheel	\$30,000	34.64	12.00	7.00	53.64	50 hp. 111.60	165.24	13.0	12.71
31-40 ft. wheel	\$45,000	51.97	18.00	10.50	80.46	50 hp. 111.60	192.06	20.0	9.60

Annual hours of use: 50

The power units for all PT mower/conditioners are two wheel drive tractors. Note that the smallest two wheel drive tractor available in this guide is 100 hp, so the power unit cost for equipment that requires a smaller power unit may be over-estimated. Power unit cost includes fuel, labour and margin for tractor.

## Balers

Machine Size	MSRP	Ownership Cost (\$/hr.)	Repair & Maintenance Cost (\$/hr.)	Margin on Ownership and R&M (\$/hr.)	Rental Rate (\$/hr.)	Power Unit Cost (\$/hr.)	Custom Rate (\$/hr.)	Work Rate (bale/hr.)	Custom Rate (\$/bale)
<b>Large Round Balers</b> 4x4 ft. bales	\$48,000	35.35	7.58	6.44	49.38	50 hp. 111.60	160.97	17	9.47
4x5 ft. bales	\$58,000	42.72	9.16	7.78	59.67	60 hp. 111.60	171.26	15	11.42
4x6 ft. bales	\$71,000	52.30	11.22	9.53	73.04	70 hp. 111.60	184.64	15	12.31
5x5 ft. bales	\$50,000	36.83	7.90	6.71	51.44	70 hp. 111.60	163.03	12	13.59
5x6 ft. bales	\$90,000	66.29	14.22	12.08	92.59	80 hp. 111.60	204.18	12	17.02
<b>Large Square Balers</b> Small (35x31x108")	\$206,000	101.15	24.58	18.86	144.60	145 hp. 139.84	284.44	40	7.11
Medium (35x47x108")	\$250,000	122.76	29.83	22.89	175.48	145 hp. 139.84	315.32	40	7.88
Large (50x47x108")	\$274,000	134.54	32.70	25.09	192.33	180 hp. 170.07	362.40	40	9.06
<b>Small Square Baler</b> 14x18x52" bales	\$40,000	23.10	4.20	4.09	31.39	50 hp. 111.60	142.99	175	0.82
16x18x52" bales	\$51,000	29.45	5.36	5.22	40.02	50 hp. 111.60	151.62	175	0.87

Large Round Balers annual hours of use: 100

Large Square Balers annual hours of use: 150

Small Square Balers annual hours of use: 100

Cost of twine is not included in above rates. For the cost of twine add \$0.50/bale for 4' diameter, \$0.80/bale for 5' diameter and \$1.00/bale for 6' diameter. Add \$1.00/bale for large square and \$0.10/bale for small square. For the cost of mesh add \$1.75 to \$2.00/bale.

Power units for round and small square balers are two wheel drive tractors and power units for large square balers are front wheel assist tractors. Note that the smallest two wheel drive tractor available in this guide is 100 hp, so the power unit cost for equipment that requires a smaller power unit may be over-estimated. Power unit cost includes fuel, labour and margin for tractor.

# Harvesting Hay cont'd

## Pull Type Mower/Conditioners

Machine Size	MSRP	Ownership Cost (\$/hr.)	Repair & Maintenance Cost (\$/hr.)	Margin on Ownership and R&M (\$/hr.)	Rental Rate (\$/hr.)	Power Unit Cost (\$/hr.)	Custom Rate (\$/hr.)	Work Rate (acre/hr.)	Custom Rate (\$/acre)
<b>Sickle</b> 9-10 ft.	\$30,000	14.73	4.20	2.84	21.77	50 hp. 111.60	133.37	4	33.34
14-16 ft.	\$55,000	27.01	7.70	5.21	39.91	100 hp. 111.60	151.51	8	18.94
<b>Disc</b> 7-9 ft. side pull	\$40,000	19.64	7.01	4.00	30.65	60 hp. 111.60	142.25	7	20.32
14 ft.	\$55,000	27.01	9.64	5.50	42.15	90 hp. 111.60	153.74	9	17.08
16-18 ft.	\$65,000	31.92	11.40	6.50	49.81	100 hp. 111.60	161.41	12	13.45

Sickle annual hours of use: 150

Disc annual hours of use: 150

The power units for all Pull Type mower/conditioners are two wheel drive tractors. Note that the smallest two wheel drive tractor available in this guide is 100 hp., so the power unit cost for equipment that requires a smaller power unit may be over-estimated. Power unit cost includes fuel, labour and margin for tractor.

## Self Propelled Bale Mover

Machine Size	MSRP	Litre/Hour	Ownership Cost (\$/hr.)	Repair & Maintenance Cost (\$/hr.)	Margin on Ownership and R&M (\$/hr.)	Rental Rate (\$/hr.)	Fuel Cost (\$/hr.)	Labour Cost (\$/hr.)	Margin on Labour and Fuel (\$/hr.)	Custom Rate (\$/hr.)
Self propelled small square bale wagon	\$345,000	28	169.41	60.49	34.48	264.38	39.68	28.00	10.15	342.21

Annual hours of use: 150

Fuel type is diesel, with a 75% load assumption. To calculate fuel consumption with alternative load refer to Appendix E.

**Air Drills with Independent Openers**

Machine Size	MSRP	Ownership Cost (\$/hr.)	Repair & Maintenance Cost (\$/hr.)	Margin on Ownership and R&M (\$/hr.)	Rental Rate (\$/hr.)	Power Unit Cost (\$/hr.)	Custom Rate (\$/hr.)	Work Rate (acre/hr.)	Custom Rate (\$/acre)
Small 25-45 ft.	\$400,000	147.31	73.60	33.14	254.05	400 hp. 268.46	522.50	14	37.32
Medium 46-65 ft.	\$750,000	276.21	138.00	62.13	476.34	500 hp. 306.76	783.09	23	34.05
Large 66-86 ft.	\$950,000	349.86	174.80	78.70	603.36	550+ hp. 349.56	952.92	30	31.76

Annual hours of use: 200

Includes appropriately sized air tank (<550 bu. for small, 550 bu. for medium and >550 bu. for large drills). Approximately 10 bushels of air cart capacity to 1 ft. of air drill (i.e. 40 ft. wide air drill would require about a 400 bushel capacity air cart).

The power units for all air drills with independent openers are four-wheel drive tractors. Power unit cost includes fuel, labour and margin for tractor. Power unit size (horsepower and hydraulic pressure requirements) will vary for each condition (e.g. soil type, implement type, etc.), so ensure that the power unit size and cost is appropriate.

**Air Hoe Drills**

Machine Size	MSRP	Ownership Cost (\$/hr.)	Repair & Maintenance Cost (\$/hr.)	Margin on Ownership and R&M (\$/hr.)	Rental Rate (\$/hr.)	Power Unit Cost (\$/hr.)	Custom Rate (\$/hr.)	Work Rate (acre/hr.)	Custom Rate (\$/acre)
Small 27-50 ft.	\$300,000	110.48	47.25	23.66	181.39	350 hp. 268.46	449.85	16	28.12
Large 51-72 ft.	\$750,000	276.21	118.13	59.15	453.48	550+ hp. 349.56	803.04	24	33.46

Annual hours of use: 200

Includes appropriately sized air tank (<550 bu. for small and >550 bu. for large drills). The power units for all air hoe drills are four wheel drive tractors. Power unit cost includes fuel, labour and margin for tractor. Power unit size (horsepower and hydraulic pressure requirements) will vary for each condition (soil type, implement type, etc.), so ensure that the power unit size and cost is appropriate.

**Air Disc Drills**

Machine Size	MSRP	Ownership Cost (\$/hr.)	Repair & Maintenance Cost (\$/hr.)	Margin on Ownership and R&M (\$/hr.)	Rental Rate (\$/hr.)	Power Unit Cost (\$/hr.)	Custom Rate (\$/hr.)	Work Rate (acre/hr.)	Custom Rate (\$/acre)
Small 30 - 49 ft.	\$600,000	220.97	94.50	47.32	362.78	450 hp. 306.76	669.54	19	35.24
Large 50-70 ft.	\$950,000	349.86	149.63	74.92	574.41	550+ hp. 349.56	923.96	28	33.00

Annual hours of use: 200

Includes appropriately sized air tank (<400 bu. for small and >600 bu. for large drills).

The power units for all air disc drills are four wheel drive tractors. Power unit cost includes fuel, labour and margin for tractor. Power unit size (horsepower and hydraulic pressure requirements) will vary for each condition (soil type, implement type, etc.), so ensure that the power unit size and cost is appropriate.

**Air Seeders**

Machine Size	MSRP	Ownership Cost (\$/hr.)	Repair & Maintenance Cost (\$/hr.)	Margin on Ownership and R&M (\$/hr.)	Rental Rate (\$/hr.)	Power Unit Cost (\$/hr.)	Custom Rate (\$/hr.)	Work Rate (acre/hr.)	Custom Rate (\$/acre)
Small 25-40 ft.	\$423,000	155.78	66.62	33.36	255.76	275 hp. 268.46	524.22	15	34.95
Medium 41-59ft.	\$672,000	247.48	105.84	53.00	406.32	400 hp. 268.46	674.78	23	29.34
Large 60-70 ft.	\$799,000	294.25	125.84	63.01	483.11	450+ hp. 306.76	789.86	30	26.33

Annual hours of use: 200

Includes appropriately sized air tank (<550 bu. for small, 550 bu. for medium and >550 bu. for large seeders). The power units for all air seeders are four wheel drive tractors. Note the smallest four wheel drive tractor available in this guide is 350 hp., so the power unit cost for equipment that requires a smaller power unit may be over-estimated. Power unit cost includes fuel, labour and margin for tractor.

## Other Row Crop Planters

Machine Size	MSRP	Ownership Cost (\$/hr.)	Repair & Maintenance Cost (\$/hr.)	Margin on Ownership and R&M (\$/hr.)	Rental Rate (\$/hr.)	Power Unit Cost (\$/hr.)	Custom Rate (\$/hr.)	Work Rate (acre/hr.)	Custom Rate (\$/acre)
12 row planter	\$170,000	179.32	71.40	37.61	288.33	150 hp. 139.84	428.17	13	32.94
16 row planter	\$280,000	295.35	117.60	61.94	474.89	180 hp. 170.07	644.96	17	37.94
24 row planter	\$420,000	443.03	176.40	92.91	712.34	230 hp. 230.90	943.24	25	37.73
12/24 split row planter	\$320,000	337.54	134.40	70.79	542.74	210 hp. 170.07	712.80	19	37.52
16/32 split row planter	\$390,000	411.38	163.80	86.28	661.46	250 hp. 230.90	892.36	25	35.69

Annual hours of use: 100

The power units for all row crop planters are front wheel assist tractors. Power unit cost includes fuel, labour and margin for tractor.

## Soil Preparation

### Cultivators

Machine Size	MSRP	Ownership Cost (\$/hr.)	Repair & Maintenance Cost (\$/hr.)	Margin on Ownership and R&M (\$/hr.)	Rental Rate (\$/hr.)	Power Unit Cost (\$/hr.)	Custom Rate (\$/hr.)	Work Rate (acre/hr.)	Custom Rate (\$/acre)
<b>Cultivators, field (with tine harrows)</b>									
Small 24-35 ft.	\$100,000	28.87	7.90	5.52	42.29	225 hp. 230.90	273.19	15	18.21
Medium 36-49 ft.	\$130,000	37.53	10.27	7.17	54.97	400 hp. 268.46	323.43	21	15.40
Large 50-62 ft.	\$175,000	50.52	13.83	9.65	74.00	500 hp. 306.76	380.76	27	14.10
<b>Cultivators, heavy duty (with tine harrows)</b>									
Small 23-40 ft.	\$125,000	36.09	9.88	6.89	52.86	400 hp. 268.46	321.31	15	21.42
Medium 41-50 ft.	\$150,000	43.31	11.85	8.27	63.43	500 hp. 306.76	370.19	22	16.83
Large 51-62 ft.	\$200,000	57.74	15.80	11.03	84.57	550+ hp. 349.56	434.13	27	16.08

Annual hours of use: 200

Power units for cultivators are four wheel drive tractors except for small field cultivators where front wheel assist tractor is selected. Power unit cost includes fuel, labour and margin for tractor.

### Harrows

Machine Size	MSRP	Ownership Cost (\$/hr.)	Repair & Maintenance Cost (\$/hr.)	Margin on Ownership and R&M (\$/hr.)	Rental Rate (\$/hr.)	Power Unit Cost (\$/hr.)	Custom Rate (\$/hr.)	Work Rate (acre/hr.)	Custom Rate (\$/acre)
<b>Harrows, mid</b> 50-90 ft.	\$100,000	64.26	16.80	12.16	93.22	400 hp. 268.46	361.67	51	7.09
<b>Harrows, heavy</b> 40-84 ft.	\$125,000	72.18	19.75	13.79	105.72	550+ hp. 349.56	455.27	51	8.93
<b>Harrow packers</b> 25-62 ft.	\$50,000	12.05	1.33	2.01	15.38	175 hp. 170.07	185.45	32	5.80

Mid harrows annual hours of use: 75

Heavy harrows annual hours of use: 100

Packer harrows annual hours of use: 200

The power units for packer harrows is a front wheel assist tractor. The power unit for mid and heavy harrows are four wheel drive tractors.

Power unit cost includes fuel, labour and margin for tractor.

# Soil Preparation cont'd

## Vertical Tillage Tools

Machine Size	MSRP	Ownership Cost (\$/hr.)	Repair & Maintenance Cost (\$/hr.)	Margin on Ownership and R&M (\$/hr.)	Rental Rate (\$/hr.)	Power Unit Cost (\$/hr.)	Custom Rate (\$/hr.)	Work Rate (acre/hr.)	Custom Rate (\$/acre)
<b>Compact, high-speed disk</b> Small 10-30 ft.	\$100,000	57.74	36.80	14.18	108.72	400 hp. 268.46	377.18	16	23.57
						550+ hp. 349.56	512.64	31	16.54
<b>Heavy duty, compact high-speed disk</b> Small 10-25 ft.	\$145,000	83.72	53.36	20.56	157.65	500 hp. 306.76	464.40	14	33.17
						550+ hp. 349.56	621.36	26	23.90

Compact annual hours of use: 100  
Heavy duty annual hours of use: 100  
Power units for compact and heavy duty disks are four wheel drive tractors. Power unit cost includes fuel, labour and margin for tractor.

## Land Roller

Machine Size	MSRP	Ownership Cost (\$/hr.)	Repair & Maintenance Cost (\$/hr.)	Margin on Ownership and R&M (\$/hr.)	Rental Rate (\$/hr.)	Power Unit Cost (\$/hr.)	Custom Rate (\$/hr.)	Work Rate (acre/hr.)	Custom Rate (\$/acre)
20 ft. fixed	\$30,000	23.10	4.20	4.09	31.39	100 hp. 139.84	171.23	9	19.03
40-50 ft. (3 roller sections)	\$75,000	57.74	10.50	10.24	78.48	225+ hp. 230.90	309.38	26	11.90
55-75 ft. (5 roller sections)	\$110,000	84.69	15.40	15.01	115.10	400 hp. 268.46	383.56	38	10.09

Annual hours of use: 75  
Power units for small and medium sized land rollers are front wheel assist tractors. Large land roller requires 4 wheel drive. Power unit cost includes fuel, labour and margin for tractor.

## Land Scraper

Machine Size	MSRP	Ownership Cost (\$/hr.)	Repair & Maintenance Cost (\$/hr.)	Margin on Ownership and R&M (\$/hr.)	Rental Rate (\$/hr.)	Power Unit Cost (\$/hr.)	Custom Rate (\$/hr.)
10.0-15.0 CU. yard	\$75,000	98.89	24.66	18.53	142.08	400 hp. 268.46	410.54
15.0+ CU. yard	\$125,000	164.82	41.09	30.89	236.80	550 hp. 349.56	586.35
Pull Dozer 15.0-20.0 CU. Yard	\$100,000	131.85	32.88	24.71	189.44	400 hp. 268.46	457.89
Pull Dozer 21.01+ CU. Yard	\$150,000	197.78	49.31	37.06	284.16	550 hp. 349.56	633.71
Rotary Ditcher	\$100,000	131.85	32.88	24.71	189.44	400 hp. 268.46	457.89

Annual hours of use: 80  
The power units for all land scrapers 4 wheel drive tractors. Power unit cost includes fuel, labour and margin for tractor.

# Sprayers

## High Clearance Sprayer

Machine Size	MSRP	Litre/Hour	Ownership Cost (\$/hr.)	Repair & Maintenance Cost (\$/hr.)	Margin on Ownership and R&M (\$/hr.)	Rental Rate (\$/hr.)	Fuel Cost (\$/hr.)	Labour Cost (\$/hr.)	Margin on Labour and Fuel (\$/hr.)	Custom Rate (\$/hr.)	Work Rate (acre/hr.)	Custom Rate (\$/acre)
800 U.S. gal, 90 ft. boom	\$479,000	41	354.06	100.73	68.22	523.00	58.10	28.00	12.91	622.01	70	8.89
1000 U.S. gal, 100 ft. boom	\$574,000	52	424.28	120.70	81.75	626.73	73.68	28.00	15.25	743.67	78	9.53
1200 U.S. gal, 120 ft. boom	\$686,000	61	507.06	144.26	97.70	749.02	86.44	28.00	17.17	880.62	93	9.47
1600 U.S. gal, 130 ft. boom	\$703,000	70	519.63	147.83	100.12	767.58	99.19	28.00	19.08	913.85	101	9.05

Annual hours of use: 175  
Fuel type is diesel, with a 75% load assumption. To calculate fuel consumption with alternative load refer to Appendix E.  
These rates are not intended to be compared to commercial custom spraying rates. Refer to the introduction of this guide for more information.

# Miscellaneous

## Post Pounders

Machine Size	MSRP	Ownership Cost (\$/hr.)	Repair & Maintenance Cost (\$/hr.)	Margin on Ownership and R&M (\$/hr.)	Rental Rate (\$/hr.)	Power Unit Cost (\$/hr.)	Custom Rate (\$/hr.)
Post pounder 3PT hitch mount	\$11,000	15.88	5.78	3.25	24.90	55 hp. 111.60	136.50
Post pounder trailer mounted with engine	\$25,000	36.09	13.13	7.38	56.60	55 hp. 111.60	168.19
Post pounder skid steer mounted	\$13,000	18.77	6.83	3.84	29.43	55 hp. 111.60	141.02

Annual hours of use: 40

The power units for all post pounders are two wheel drive tractors. Note that the smallest two wheel drive tractor available in this guide is 100 hp, so the power unit cost for equipment that requires a smaller power unit may be over-estimated. Power unit cost includes fuel, labour and margin for tractor.

## Vertical Feed Mixer

Machine Size	MSRP	Ownership Cost (\$/hr.)	Repair & Maintenance Cost (\$/hr.)	Margin on Ownership and R&M (\$/hr.)	Rental Rate (\$/hr.)	Power Unit Cost (\$/hr.)	Custom Rate (\$/hr.)
280-360 CU. ft.	\$43,000	15.84	5.65	3.22	24.71	110 hp. 139.84	164.56
500-750 CU. ft.	\$70,000	25.78	9.21	5.25	40.23	160 hp. 170.07	210.30
830-1150 CU. ft.	\$100,000	36.83	13.15	7.50	57.47	225+ hp. 230.90	288.38

Annual hours of use: 200

The power units for all vertical feed mixers are front wheel assist tractors. Power unit cost includes fuel, labour and margin for tractor.

## Grinder Mixers, Feed Mixers and Bale Processors

Machine Size	MSRP	Ownership Cost (\$/hr.)	Repair & Maintenance Cost (\$/hr.)	Margin on Ownership and R&M (\$/hr.)	Rental Rate (\$/hr.)	Power Unit Cost (\$/hr.)	Custom Rate (\$/hr.)
<b>Grinder Mixers</b>							
360-440 CU. ft.	\$70,000	25.78	11.03	5.52	42.32	120 hp. 139.84	182.17
550-750 CU. ft.	\$90,000	33.14	14.18	7.10	54.42	200 hp. 170.07	224.49
<b>Feed Mixers</b>							
Two 6 ft. Bale, 40 bu. grain	\$65,000	23.94	10.24	5.13	39.30	100 hp. 139.84	179.14
<b>Bale Processors</b>							
Two 6 ft. Round Bale	\$40,000	14.73	6.30	3.15	24.19	155 hp. 139.84	164.03
Six 6 ft. Round Bale	\$68,000	25.04	10.71	5.36	41.12	175 hp. 170.07	211.18

Annual Hours of Use: 200

The power units for all grinder mixers, feed mixers, and bale processors are front wheel assist tractors. Power unit cost includes fuel, labour and margin for tractor.

## Manure Spreader (Solid)

Machine Size	MSRP	Ownership Cost (\$/hr.)	Repair & Maintenance Cost (\$/hr.)	Margin on Ownership and R&M (\$/hr.)	Rental Rate (\$/hr.)	Power Unit Cost (\$/hr.)	Custom Rate (\$/hr.)
250-299 CU. ft. level chain unload	\$35,000	36.92	16.17	7.96	61.05	120 hp. 139.84	200.89
300-399 CU. ft. level chain unload	\$38,000	40.08	17.56	8.65	66.29	125 hp. 139.84	206.13
400-500 CU. ft. level chain unload	\$56,000	59.07	25.87	12.74	97.68	150 hp. 139.84	237.52
300-399 CU. ft. level side discharge	\$65,000	68.56	30.03	14.79	113.38	150 hp. 139.84	253.22
400-500 CU. ft. level side discharge	\$85,000	89.66	39.27	19.34	148.27	180 hp. 170.07	318.34
500+ CU. ft. level side discharge	\$95,000	100.21	43.89	21.61	165.71	200 hp. 170.07	335.78
250-300 CU. ft., hydraulic push, vertical beaters	\$75,000	79.11	34.65	17.06	130.83	150 hp. 139.84	270.67
400-500 CU. ft., hydraulic push, vertical beaters	\$95,000	100.21	43.89	21.61	165.71	200 hp. 170.07	335.78

Annual hours of use: 100

Power units for all manure spreaders are front wheel assist tractors. Power unit cost includes fuel, labour and margin for tractor.

# Appendix A: Cost of Hauling Grain from Field to Yard

**Truck cost:** excluding labour

\$157.79 /hour\*

**Auger cost:** 8 inch x 60' with gas engine (excluding labour)

\$21.14 /hour

**Labour cost:**

\$28.00 /hour

Distance from Field to Yard (miles)	0.5	1	1.5	2	3	4	6	10
<b>Time Use (minutes)</b>								
<b>(A)</b> Time unload twice from one combine or once from each of two combines	10	10	10	10	10	10	10	10
<b>(B)</b> Travel time to yard and return	4	6.5	8.5	10	12	15	21	33
<b>(C)</b> Time truck running during unload	4	4	4	4	4	4	4	4
<b>(D)</b> Truck running time per trip	18	20.5	22.5	24	26	29	35	47
<b>(E)</b> Total unload time at bin	7	7	7	7	7	7	7	7
<i>Wait Time in Field (truck not running)</i>								
<b>(F)</b> Hauling from one combine	47	44.5	42.5	41	39	36	30	18
<b>(G)</b> Hauling from two combines	11	8.5	6.5	5	3	0	0	0
<b>Total Time per Trip</b>								
<b>(H)</b> Hauling from one combine	68	68	68	68	68	68	68	68
<b>(I)</b> Hauling from two combines	32	32	32	32	32	32	38	50
<b>Component Costs Per Trip</b>								
<b>(J)</b> Truck costs per trip	\$47.34	\$53.91	\$59.17	\$63.12	\$68.38	\$76.27	\$92.04	\$123.60
<b>(K)</b> Auger costs per trip	\$2.47	\$2.47	\$2.47	\$2.47	\$2.47	\$2.47	\$2.47	\$2.47
<b>(L)</b> Labour costs per trip (one combine)	\$31.73	\$31.73	\$31.73	\$31.73	\$31.73	\$31.73	\$31.73	\$31.73
<b>(M)</b> Labour costs per trip (two combines)	\$14.93	\$14.93	\$14.93	\$14.93	\$14.93	\$14.93	\$17.73	\$23.33
<b>Custom Rate (\$/hr.) (includes 15% margin)</b>								
<b>(N)</b> Hauling from one combine	\$82.74	\$89.41	\$94.74	\$98.75	\$104.08	\$112.09	\$128.10	\$160.12
<b>(O)</b> Hauling from two combines	\$139.59	\$153.77	\$165.11	\$173.61	\$184.95	\$201.97	\$203.81	\$206.18
<b>Custom Rate (\$/bu.) (includes 15% margin)</b>								
<b>(P)</b> Hauling from one combine (bu./hr. = 300)	\$0.28	\$0.30	\$0.32	\$0.33	\$0.35	\$0.37	\$0.43	\$0.53
<b>(Q)</b> Hauling from two combines (bu./hr. = 600)	\$0.23	\$0.26	\$0.28	\$0.29	\$0.31	\$0.34	\$0.34	\$0.34

Calculations used to determine costs:

$$D = A + B + C$$

$$H = A + B + E + F$$

$$I = A + B + E + G$$

$$J = D / (60 \text{ min/hr}) * (\text{truck cost})$$

$$K = E / (60 \text{ min/hr}) * (\text{auger cost})$$

$$L = H / (60 \text{ min/hr}) * (\text{labour cost})$$

$$M = I / (60 \text{ min/hr}) * (\text{labour cost})$$

$$\# \text{ trips/hr one combine} = (60 \text{ min/hr}) / H$$

$$\# \text{ trips/hr two combines} = (60 \text{ min/hr}) / I$$

$$N = (J + K + L) * (60 \text{ min/hr}) / H * 1.15$$

$$O = (J + K + M) * (60 \text{ min/hr}) / I * 1.15$$

$$P = N / (300 \text{ bu/hr})$$

$$Q = O / (600 \text{ bu/hr})$$

\*Truck cost based on \$180,000.00 purchase price, 150 hours of annual usage, 2.5% repair and maintenance rate, \$1.417/L diesel, 27 L/hr. fuel usage, 15% fuel margin, and 15 year optimal life.

# Appendix B: Rental Rates for Farm Buildings and Bins

To determine the fair rental rate for farm buildings, consider:

	Your Value	Example
Replacement cost of building		\$20,000
Retained value of building (at end of years of service)		\$8,000
Interest rate (opportunity cost not included)		8.50%
Repair rate (% of replacement cost)*		0.50%
Annual insurance premium		\$60
Optimal life		30

Calculate:

## A. Depreciation:

(Replacement cost - Retained Value) / Optimal Life =

(\$20,000 - \$8,000) / 30 = \$400

## B. Interest Cost:

(Replacement cost) x (1.98 (Interest Rate) - 0.0054) / Years of Loan =  
Assumes 75% financing and 7 years loan payback period

\$465.43

## C. Insurance:

Annual insurance premiums =

\$60

## D. Repairs:

Annual repair rate x Replacement cost =

\$100

Total = A + B + C + D

\$1,025 per year / 3000 bu. = 0.34 per year bu.

Repair rates are difficult to estimate. Steel buildings (bins and quonsets) might be 0.5% of replacement cost per year. Aeration fans may be higher. Wood buildings might be 1 to 3% of the replacement cost.

For bins with aeration or natural air drying, include the purchase cost of the fan and air distribution system in the replacement cost value. Add approximately \$0.10/hp./hr. for electricity costs.

# Appendix C: Combine Classifications

Size	Acre/Hour	Manufacturer	Model
Class 5	≤ 300 hp. 250 bushel hopper	John Deere	S650
		Case IH	5140
Class 6	301-360 hp. 300-390 bushel hopper	CNH	CR6.80
		CNH	CR6.90
		John Deere	S660
		John Deere	S760
		Case IH	6140/50
		Gleaner	S68/96
		Claas Lexion	730
Class 7	361-420 hp. 300-390 bushel hopper	Massey Ferguson	9520
		CNH	CR7.90
		John Deere	S670
		John Deere	S770
		Case IH	7140/50
		Case IH	7240/50
		Gleaner	S78/97
Class 8	421-500 hp. 330-410 bushel hopper	Claas Lexion	740
		Massey Ferguson	9540
		Massey Ferguson	9545
		CNH	CR8.90
		John Deere	S680
		John Deere	S780
		Case IH	8240/50
Class 9	501-560 hp. 360-410 bushel hopper	Gleaner	S88/98
		Claas Lexion	L 750
		Massey Ferguson	9560
		Massey Ferguson	9565
		CNH	CR9.90
Class 10	≥ 561 hp. 360-410 bushel hopper	John Deere	S690
		John Deere	S790
		Case IH	9240/50
		Claas Lexion	760
Class 10	≥ 561 hp. 360-410 bushel hopper	CNH	CR10.90
		Claas Lexion	780

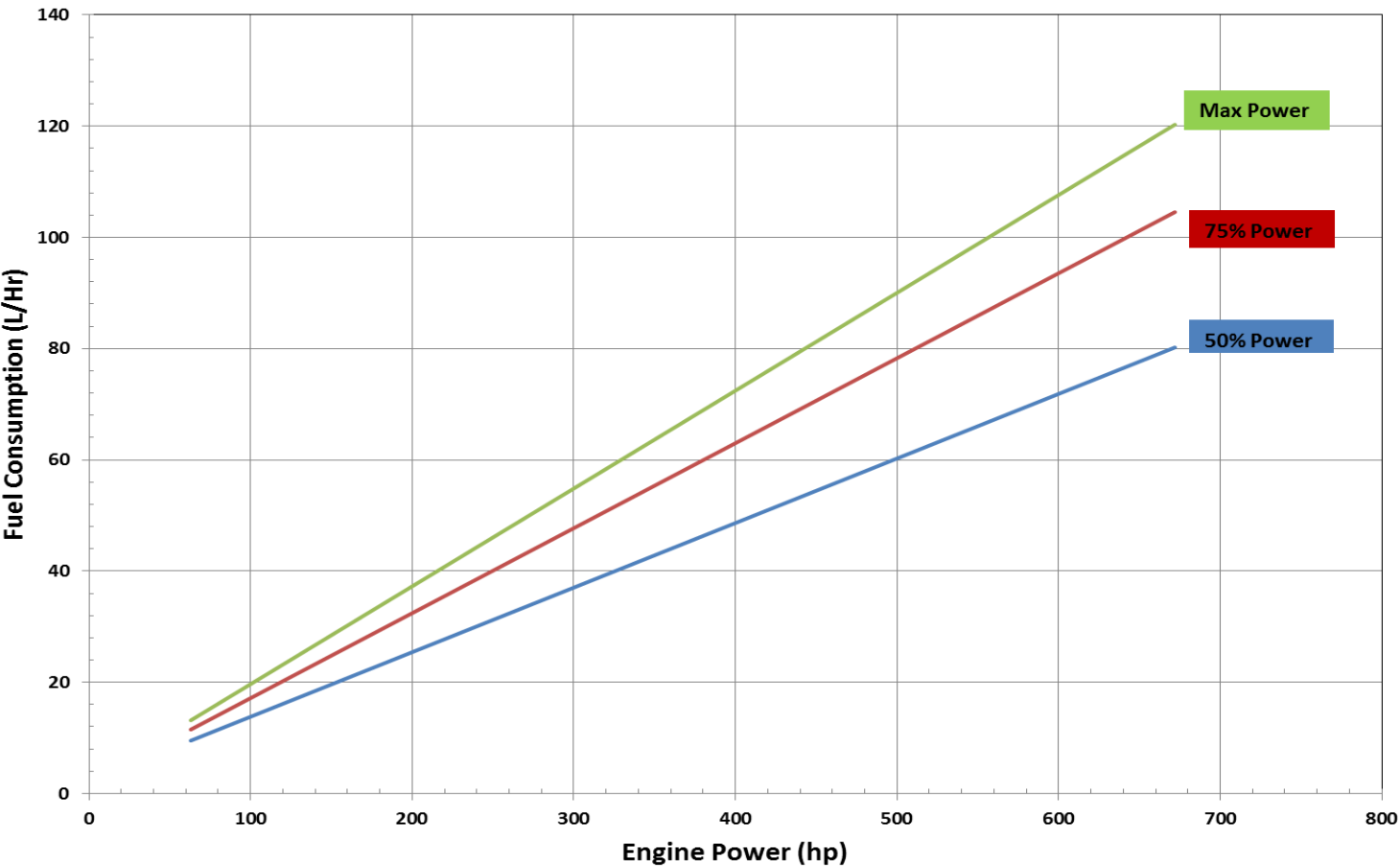
# Appendix D: Assumptions for Machinery Cost Calculations

## Appendix D: Assumptions for Machinery Cost Calculations

Machine	Annual Hours of Usage	Optimal Life (years)	Repair Rate (% of purchase price)	Average Field Speed (m.p.h.)
<b>Tractors</b>				
2WD	300	20	2.31	
Front wheel assist	450	15	2.73	
4WD	450	15	2.63	
Tracked	450	15	3.36	
<b>Combines</b>				
SP Rotary	250	12	2.63	
<b>Combine headers</b>				
Rigid headers	250	20	2.10	
Pickup headers	250	20	1.58	
Flex headers	250	15	2.63	
Draper headers	250	15	2.94	
Corn headers	100	15	2.94	
<b>Swathers SP</b>	200	15	2.10	5.5
<b>Grain Carts</b>	250	20	2.10	
<b>Powered Augers</b>	100	20	1.58	
<b>PTO Augers</b>	100	20	1.58	
<b>Grain Vac</b>	50	15	2.10	
<b>SP Forage Harvester</b>	400	10	8.40	6.5
<b>SP Forage Harvester Header</b>	400	10	8.40	
<b>SP Mower/conditioner</b>	150	15	3.36	8.0
<b>PT Mower/conditioner (sickle)</b>	150	15	2.10	5
<b>PT Mower/conditioner (disc)</b>	150	15	2.63	8.0
<b>Hay Rakes (Wheel)</b>	50	20	2.00	
<b>Balers</b>				
Round	100	15	1.58	
Large square	150	15	1.79	
Small square	100	20	1.05	
<b>Bale movers</b>				
PT Round	100	15	2.63	
PT Large square	200	20	2.10	
SP Small square	150	15	2.63	
<b>Air drills (independent openers)</b>	200	15	3.68	4.75
<b>Air hoe drills</b>	200	15	3.15	4.75
<b>Air disk drills</b>	200	15	3.15	5.5
<b>Air seeder</b>	200	15	3.15	5.5
<b>Row crop planters</b>	100	10	4.20	5.0
<b>Cultivators</b>	200	20	1.58	5.0
<b>Standard harrows</b>	75	25	1.26	7.5
<b>Heavy harrows</b>	100	20	1.58	7.5
<b>Harrow packers</b>	200	25	0.53	7.5
<b>Vertical tillage tools</b>	100	20	3.68	8.0
<b>Land roller</b>	75	20	1.05	6.0
<b>Land scraper</b>	80	10	2.63	
<b>High clearance sprayers</b>	175	8	3.68	10.0
<b>Post pounder</b>	40	20	2.10	
<b>Vertical feed mixer</b>	200	15	2.63	
<b>Grinder mixers and feed mixers</b>	200	15	3.15	
<b>Bale Processors</b>	200	15	3.15	
<b>Manure spreader</b>	100	10	4.62	

# Appendix E: Fuel Consumption Based on Engine Size

Appendix E: Fuel Consumption Based on Engine Size



# Appendix F: Conversion Tables

Dollars Per Hectare Or Acre													
Hectares or acres per hour	Dollars Per Hour												
	\$20.00	\$30.00	\$40.00	\$50.00	\$60.00	\$70.00	\$80.00	\$90.00	\$100.00	\$110.00	\$120.00	\$130.00	\$140.00
2.0	\$10.00	\$15.00	\$20.00	\$25.00	\$30.00	\$35.00	\$40.00	\$45.00	\$50.00	\$55.00	\$60.00	\$65.00	\$70.00
2.5	\$8.00	\$12.00	\$16.00	\$20.00	\$24.00	\$28.00	\$32.00	\$36.00	\$40.00	\$44.00	\$48.00	\$52.00	\$56.00
3.0	\$6.67	\$10.00	\$13.33	\$16.67	\$20.00	\$23.33	\$26.67	\$30.00	\$33.33	\$36.67	\$40.00	\$43.33	\$46.67
3.5	\$5.71	\$8.57	\$11.43	\$14.29	\$17.14	\$20.00	\$22.86	\$25.71	\$28.57	\$31.43	\$34.29	\$37.14	\$40.00
4.0	\$5.00	\$7.50	\$10.00	\$12.50	\$15.00	\$17.50	\$20.00	\$22.50	\$25.00	\$27.50	\$30.00	\$32.50	\$35.00
4.5	\$4.44	\$6.67	\$8.89	\$11.11	\$13.33	\$15.56	\$17.78	\$20.00	\$22.22	\$24.44	\$26.67	\$28.89	\$31.11
5.0	\$4.00	\$6.00	\$8.00	\$10.00	\$12.00	\$14.00	\$16.00	\$18.00	\$20.00	\$22.00	\$24.00	\$26.00	\$28.00
5.5	\$3.64	\$5.45	\$7.27	\$9.09	\$10.91	\$12.73	\$14.55	\$16.36	\$18.18	\$20.00	\$21.82	\$23.64	\$25.45
6.0	\$3.33	\$5.00	\$6.67	\$8.33	\$10.00	\$11.67	\$13.33	\$15.00	\$16.67	\$18.33	\$20.00	\$21.67	\$23.33
6.5	\$3.08	\$4.62	\$6.15	\$7.69	\$9.23	\$10.77	\$12.31	\$13.85	\$15.38	\$16.92	\$18.46	\$20.00	\$21.54
7.0	\$2.86	\$4.29	\$5.71	\$7.14	\$8.57	\$10.00	\$11.43	\$12.86	\$14.29	\$15.71	\$17.14	\$18.57	\$20.00
7.5	\$2.67	\$4.00	\$5.33	\$6.67	\$8.00	\$9.33	\$10.67	\$12.00	\$13.33	\$14.67	\$16.00	\$17.33	\$18.67
8.0	\$2.50	\$3.75	\$5.00	\$6.25	\$7.50	\$8.75	\$10.00	\$11.25	\$12.50	\$13.75	\$15.00	\$16.25	\$17.50
8.5	\$2.35	\$3.53	\$4.71	\$5.88	\$7.06	\$8.24	\$9.41	\$10.59	\$11.76	\$12.94	\$14.12	\$15.29	\$16.47
9.0	\$2.22	\$3.33	\$4.44	\$5.56	\$6.67	\$7.78	\$8.89	\$10.00	\$11.11	\$12.22	\$13.33	\$14.44	\$15.56
9.5	\$2.11	\$3.16	\$4.21	\$5.26	\$6.32	\$7.37	\$8.42	\$9.47	\$10.53	\$11.58	\$12.63	\$13.68	\$14.74
10.0	\$2.00	\$3.00	\$4.00	\$5.00	\$6.00	\$7.00	\$8.00	\$9.00	\$10.00	\$11.00	\$12.00	\$13.00	\$14.00
10.5	\$1.90	\$2.86	\$3.81	\$4.76	\$5.71	\$6.67	\$7.62	\$8.57	\$9.52	\$10.48	\$11.43	\$12.38	\$13.33
11.0	\$1.82	\$2.73	\$3.64	\$4.55	\$5.45	\$6.36	\$7.27	\$8.18	\$9.09	\$10.00	\$10.91	\$11.82	\$12.73
11.5	\$1.74	\$2.61	\$3.48	\$4.35	\$5.22	\$6.09	\$6.96	\$7.83	\$8.70	\$9.57	\$10.43	\$11.30	\$12.17
12.0	\$1.67	\$2.50	\$3.33	\$4.17	\$5.00	\$5.83	\$6.67	\$7.50	\$8.33	\$9.17	\$10.00	\$10.83	\$11.67
12.5	\$1.60	\$2.40	\$3.20	\$4.00	\$4.80	\$5.60	\$6.40	\$7.20	\$8.00	\$8.80	\$9.60	\$10.40	\$11.20
13.0	\$1.54	\$2.31	\$3.08	\$3.85	\$4.62	\$5.38	\$6.15	\$6.92	\$7.69	\$8.46	\$9.23	\$10.00	\$10.77
13.5	\$1.48	\$2.22	\$2.96	\$3.70	\$4.44	\$5.19	\$5.93	\$6.67	\$7.41	\$8.15	\$8.89	\$9.63	\$10.37
14.0	\$1.43	\$2.14	\$2.86	\$3.57	\$4.29	\$5.00	\$5.71	\$6.43	\$7.14	\$7.86	\$8.57	\$9.29	\$10.00
14.5	\$1.38	\$2.07	\$2.76	\$3.45	\$4.14	\$4.83	\$5.52	\$6.21	\$6.90	\$7.59	\$8.28	\$8.97	\$9.66
15.0	\$1.33	\$2.00	\$2.67	\$3.33	\$4.00	\$4.67	\$5.33	\$6.00	\$6.67	\$7.33	\$8.00	\$8.67	\$9.33
15.5	\$1.29	\$1.94	\$2.58	\$3.23	\$3.87	\$4.52	\$5.16	\$5.81	\$6.45	\$7.10	\$7.74	\$8.39	\$9.03
16.0	\$1.25	\$1.88	\$2.50	\$3.13	\$3.75	\$4.38	\$5.00	\$5.63	\$6.25	\$6.88	\$7.50	\$8.13	\$8.75
16.5	\$1.21	\$1.82	\$2.42	\$3.03	\$3.64	\$4.24	\$4.85	\$5.45	\$6.06	\$6.67	\$7.27	\$7.88	\$8.48
17.0	\$1.18	\$1.76	\$2.35	\$2.94	\$3.53	\$4.12	\$4.71	\$5.29	\$5.88	\$6.47	\$7.06	\$7.65	\$8.24
17.5	\$1.14	\$1.71	\$2.29	\$2.86	\$3.43	\$4.00	\$4.57	\$5.14	\$5.71	\$6.29	\$6.86	\$7.43	\$8.00
18.0	\$1.11	\$1.67	\$2.22	\$2.78	\$3.33	\$3.89	\$4.44	\$5.00	\$5.56	\$6.11	\$6.67	\$7.22	\$7.78

Dollars per Hectare or Acre													
Hectares or acres per hour	Dollars Per Hour												
	\$150.00	\$160.00	\$170.00	\$180.00	\$190.00	\$200.00	\$210.00	\$220.00	\$230.00	\$240.00	\$250.00	\$260.00	\$270.00
4.0	\$37.50	\$40.00	\$42.50	\$45.00	\$47.50	\$50.00	\$52.50	\$55.00	\$57.50	\$60.00	\$62.50	\$65.00	\$67.50
4.5	\$33.33	\$35.56	\$37.78	\$40.00	\$42.22	\$44.44	\$46.67	\$48.89	\$51.11	\$53.33	\$55.56	\$57.78	\$60.00
5.0	\$30.00	\$32.00	\$34.00	\$36.00	\$38.00	\$40.00	\$42.00	\$44.00	\$46.00	\$48.00	\$50.00	\$52.00	\$54.00
5.5	\$27.27	\$29.09	\$30.91	\$32.73	\$34.55	\$36.36	\$38.18	\$40.00	\$41.82	\$43.64	\$45.45	\$47.27	\$49.09
6.0	\$25.00	\$26.67	\$28.33	\$30.00	\$31.67	\$33.33	\$35.00	\$36.67	\$38.33	\$40.00	\$41.67	\$43.33	\$45.00
6.5	\$23.08	\$24.62	\$26.15	\$27.69	\$29.23	\$30.77	\$32.31	\$33.85	\$35.38	\$36.92	\$38.46	\$40.00	\$41.54
7.0	\$21.43	\$22.86	\$24.29	\$25.71	\$27.14	\$28.57	\$30.00	\$31.43	\$32.86	\$34.29	\$35.71	\$37.14	\$38.57
7.5	\$20.00	\$21.33	\$22.67	\$24.00	\$25.33	\$26.67	\$28.00	\$29.33	\$30.67	\$32.00	\$33.33	\$34.67	\$36.00
8.0	\$18.75	\$20.00	\$21.25	\$22.50	\$23.75	\$25.00	\$26.25	\$27.50	\$28.75	\$30.00	\$31.25	\$32.50	\$33.75
8.5	\$17.65	\$18.82	\$20.00	\$21.18	\$22.35	\$23.53	\$24.71	\$25.88	\$27.06	\$28.24	\$29.41	\$30.59	\$31.76
9.0	\$16.67	\$17.78	\$18.89	\$20.00	\$21.11	\$22.22	\$23.33	\$24.44	\$25.56	\$26.67	\$27.78	\$28.89	\$30.00
9.5	\$15.79	\$16.84	\$17.89	\$18.95	\$20.00	\$21.05	\$22.11	\$23.16	\$24.21	\$25.26	\$26.32	\$27.37	\$28.42
10.0	\$15.00	\$16.00	\$17.00	\$18.00	\$19.00	\$20.00	\$21.00	\$22.00	\$23.00	\$24.00	\$25.00	\$26.00	\$27.00
10.5	\$14.29	\$15.24	\$16.19	\$17.14	\$18.10	\$19.05	\$20.00	\$20.95	\$21.90	\$22.86	\$23.81	\$24.76	\$25.71
11.0	\$13.64	\$14.55	\$15.45	\$16.36	\$17.27	\$18.18	\$19.09	\$20.00	\$20.91	\$21.82	\$22.73	\$23.64	\$24.55
11.5	\$13.04	\$13.91	\$14.78	\$15.65	\$16.52	\$17.39	\$18.26	\$19.13	\$20.00	\$20.87	\$21.74	\$22.61	\$23.48
12.0	\$12.50	\$13.33	\$14.17	\$15.00	\$15.83	\$16.67	\$17.50	\$18.33	\$19.17	\$20.00	\$20.83	\$21.67	\$22.50
12.5	\$12.00	\$12.80	\$13.60	\$14.40	\$15.20	\$16.00	\$16.80	\$17.60	\$18.40	\$19.20	\$20.00	\$20.80	\$21.60
13.0	\$11.54	\$12.31	\$13.08	\$13.85	\$14.62	\$15.38	\$16.15	\$16.92	\$17.69	\$18.46	\$19.23	\$20.00	\$20.77
13.5	\$11.11	\$11.85	\$12.59	\$13.33	\$14.07	\$14.81	\$15.56	\$16.30	\$17.04	\$17.78	\$18.52	\$19.26	\$20.00
14.0	\$10.71	\$11.43	\$12.14	\$12.86	\$13.57	\$14.29	\$15.00	\$15.71	\$16.43	\$17.14	\$17.86	\$18.57	\$19.29
14.5	\$10.34	\$11.03	\$11.72	\$12.41	\$13.10	\$13.79	\$14.48	\$15.17	\$15.86	\$16.55	\$17.24	\$17.93	\$18.62
15.0	\$10.00	\$10.67	\$11.33	\$12.00	\$12.67	\$13.33	\$14.00	\$14.67	\$15.33	\$16.00	\$16.67	\$17.33	\$18.00
15.5	\$9.68	\$10.32	\$10.97	\$11.61	\$12.26	\$12.90	\$13.55	\$14.19	\$14.84	\$15.48	\$16.13	\$16.77	\$17.42
16.0	\$9.38	\$10.00	\$10.63	\$11.25	\$11.88	\$12.50	\$13.13	\$13.75	\$14.38	\$15.00	\$15.63	\$16.25	\$16.88
16.5	\$9.09	\$9.70	\$10.30	\$10.91	\$11.52	\$12.12	\$12.73	\$13.33	\$13.94	\$14.55	\$15.15	\$15.76	\$16.36
17.0	\$8.82	\$9.41	\$10.00	\$10.59	\$11.18	\$11.76	\$12.35	\$12.94	\$13.53	\$14.12	\$14.71	\$15.29	\$15.88
17.5	\$8.57	\$9.14	\$9.71	\$10.29	\$10.86	\$11.43	\$12.00	\$12.57	\$13.14	\$13.71	\$14.29	\$14.86	\$15.43
18.0	\$8.33	\$8.89	\$9.44	\$10.00	\$10.56	\$11.11	\$11.67	\$12.22	\$12.78	\$13.33	\$13.89	\$14.44	\$15.00
18.5	\$8.11	\$8.65	\$9.19	\$9.73	\$10.27	\$10.81	\$11.35	\$11.89	\$12.43	\$12.97	\$13.51	\$14.05	\$14.59
19.0	\$7.89	\$8.42	\$8.95	\$9.47	\$10.00	\$10.53	\$11.05	\$11.58	\$12.11	\$12.63	\$13.16	\$13.68	\$14.21
19.5	\$7.69	\$8.21	\$8.72	\$9.23	\$9.74	\$10.26	\$10.77	\$11.28	\$11.79	\$12.31	\$12.82	\$13.33	\$13.85
20.0	\$7.50	\$8.00	\$8.50	\$9.00	\$9.50	\$10.00	\$10.50	\$11.00	\$11.50	\$12.00	\$12.50	\$13.00	\$13.50

# Appendix F: Conversion Tables cont'd

Dollars per Bale													
Bales per hour	Dollars Per Hour												
	\$40.00	\$50.00	\$60.00	\$70.00	\$80.00	\$90.00	\$100.00	\$110.00	\$120.00	\$130.00	\$140.00	\$150.00	\$160.00
10	\$4.00	\$5.00	\$6.00	\$7.00	\$8.00	\$9.00	\$10.00	\$11.00	\$12.00	\$13.00	\$14.00	\$15.00	\$16.00
12	\$3.33	\$4.17	\$5.00	\$5.83	\$6.67	\$7.50	\$8.33	\$9.17	\$10.00	\$10.83	\$11.67	\$12.50	\$13.33
14	\$2.86	\$3.57	\$4.29	\$5.00	\$5.71	\$6.43	\$7.14	\$7.86	\$8.57	\$9.29	\$10.00	\$10.71	\$11.43
16	\$2.50	\$3.13	\$3.75	\$4.38	\$5.00	\$5.63	\$6.25	\$6.88	\$7.50	\$8.13	\$8.75	\$9.38	\$10.00
18	\$2.22	\$2.78	\$3.33	\$3.89	\$4.44	\$5.00	\$5.56	\$6.11	\$6.67	\$7.22	\$7.78	\$8.33	\$8.89
20	\$2.00	\$2.50	\$3.00	\$3.50	\$4.00	\$4.50	\$5.00	\$5.50	\$6.00	\$6.50	\$7.00	\$7.50	\$8.00
22	\$1.82	\$2.27	\$2.73	\$3.18	\$3.64	\$4.09	\$4.55	\$5.00	\$5.45	\$5.91	\$6.36	\$6.82	\$7.27
24	\$1.67	\$2.08	\$2.50	\$2.92	\$3.33	\$3.75	\$4.17	\$4.58	\$5.00	\$5.42	\$5.83	\$6.25	\$6.67
26	\$1.54	\$1.92	\$2.31	\$2.69	\$3.08	\$3.46	\$3.85	\$4.23	\$4.62	\$5.00	\$5.38	\$5.77	\$6.15
28	\$1.43	\$1.79	\$2.14	\$2.50	\$2.86	\$3.21	\$3.57	\$3.93	\$4.29	\$4.64	\$5.00	\$5.36	\$5.71
30	\$1.33	\$1.67	\$2.00	\$2.33	\$2.67	\$3.00	\$3.33	\$3.67	\$4.00	\$4.33	\$4.67	\$5.00	\$5.33
100	\$0.40	\$0.50	\$0.60	\$0.70	\$0.80	\$0.90	\$1.00	\$1.10	\$1.20	\$1.30	\$1.40	\$1.50	\$1.60
110	\$0.36	\$0.45	\$0.55	\$0.64	\$0.73	\$0.82	\$0.91	\$1.00	\$1.09	\$1.18	\$1.27	\$1.36	\$1.45
120	\$0.33	\$0.42	\$0.50	\$0.58	\$0.67	\$0.75	\$0.83	\$0.92	\$1.00	\$1.08	\$1.17	\$1.25	\$1.33
130	\$0.31	\$0.38	\$0.46	\$0.54	\$0.62	\$0.69	\$0.77	\$0.85	\$0.92	\$1.00	\$1.08	\$1.15	\$1.23
140	\$0.29	\$0.36	\$0.43	\$0.50	\$0.57	\$0.64	\$0.71	\$0.79	\$0.86	\$0.93	\$1.00	\$1.07	\$1.14
150	\$0.27	\$0.33	\$0.40	\$0.47	\$0.53	\$0.60	\$0.67	\$0.73	\$0.80	\$0.87	\$0.93	\$1.00	\$1.07
160	\$0.25	\$0.31	\$0.38	\$0.44	\$0.50	\$0.56	\$0.63	\$0.69	\$0.75	\$0.81	\$0.88	\$0.94	\$1.00
170	\$0.24	\$0.29	\$0.35	\$0.41	\$0.47	\$0.53	\$0.59	\$0.65	\$0.71	\$0.76	\$0.82	\$0.88	\$0.94
180	\$0.22	\$0.28	\$0.33	\$0.39	\$0.44	\$0.50	\$0.56	\$0.61	\$0.67	\$0.72	\$0.78	\$0.83	\$0.89
190	\$0.21	\$0.26	\$0.32	\$0.37	\$0.42	\$0.47	\$0.53	\$0.58	\$0.63	\$0.68	\$0.74	\$0.79	\$0.84
200	\$0.20	\$0.25	\$0.30	\$0.35	\$0.40	\$0.45	\$0.50	\$0.55	\$0.60	\$0.65	\$0.70	\$0.75	\$0.80
210	\$0.19	\$0.24	\$0.29	\$0.33	\$0.38	\$0.43	\$0.48	\$0.52	\$0.57	\$0.62	\$0.67	\$0.71	\$0.76
220	\$0.18	\$0.23	\$0.27	\$0.32	\$0.36	\$0.41	\$0.45	\$0.50	\$0.55	\$0.59	\$0.64	\$0.68	\$0.73
230	\$0.17	\$0.22	\$0.26	\$0.30	\$0.35	\$0.39	\$0.43	\$0.48	\$0.52	\$0.57	\$0.61	\$0.65	\$0.70
240	\$0.17	\$0.21	\$0.25	\$0.29	\$0.33	\$0.38	\$0.42	\$0.46	\$0.50	\$0.54	\$0.58	\$0.63	\$0.67
250	\$0.16	\$0.20	\$0.24	\$0.28	\$0.32	\$0.36	\$0.40	\$0.44	\$0.48	\$0.52	\$0.56	\$0.60	\$0.64

Hectares per Hour (at 80% field efficiency)													
Speed in km/h	Width in Metres												
	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0	11.0	12.0	13.0	14.0
2	0.32	0.48	0.64	0.80	0.96	1.12	1.28	1.44	1.60	1.76	1.92	2.08	2.24
3	0.48	0.72	0.96	1.20	1.44	1.68	1.92	2.16	2.40	2.64	2.88	3.12	3.36
4	0.64	0.96	1.28	1.60	1.92	2.24	2.56	2.88	3.20	3.52	3.84	4.16	4.48
5	0.80	1.20	1.60	2.00	2.40	2.80	3.20	3.60	4.00	4.40	4.80	5.20	5.60
6	0.96	1.44	1.92	2.40	2.88	3.36	3.84	4.32	4.80	5.28	5.76	6.24	6.72
7	1.12	1.68	2.24	2.80	3.36	3.92	4.48	5.04	5.60	6.16	6.72	7.28	7.84
8	1.28	1.92	2.56	3.20	3.84	4.48	5.12	5.76	6.40	7.04	7.68	8.32	8.96
9	1.44	2.16	2.88	3.60	4.32	5.04	5.76	6.48	7.20	7.92	8.64	9.36	10.08
10	1.60	2.40	3.20	4.00	4.80	5.60	6.40	7.20	8.00	8.80	9.60	10.40	11.20
11	1.76	2.64	3.52	4.40	5.28	6.16	7.04	7.92	8.80	9.68	10.56	11.44	12.32
12	1.92	2.88	3.84	4.80	5.76	6.72	7.68	8.64	9.60	10.56	11.52	12.48	13.44
13	2.08	3.12	4.16	5.20	6.24	7.28	8.32	9.36	10.40	11.44	12.48	13.52	14.56
14	2.24	3.36	4.48	5.60	6.72	7.84	8.96	10.08	11.20	12.32	13.44	14.56	15.68
15	2.40	3.60	4.80	6.00	7.20	8.40	9.60	10.80	12.00	13.20	14.40	15.60	16.80
16	2.56	3.84	5.12	6.40	7.68	8.96	10.24	11.52	12.80	14.08	15.36	16.64	17.92
17	2.72	4.08	5.44	6.80	8.16	9.52	10.88	12.24	13.60	14.96	16.32	17.68	19.04
18	2.88	4.32	5.76	7.20	8.64	10.08	11.52	12.96	14.40	15.84	17.28	18.72	20.16

Acres per Hour (at 80% field efficiency)													
Speed in m.p.h.	Width in Feet												
	6.0	10.0	14.0	18.0	22.0	26.0	30.0	34.0	38.0	42.0	46.0	50.0	54.0
3	1.75	2.91	4.07	5.24	6.40	7.56	8.73	9.89	11.05	12.22	13.38	14.55	15.71
4	2.33	3.88	5.43	6.98	8.53	10.08	11.64	13.19	14.74	16.29	17.84	19.39	20.95
5	2.91	4.85	6.79	8.73	10.67	12.61	14.55	16.48	18.42	20.36	22.30	24.24	26.18
6	3.49	5.82	8.15	10.47	12.80	15.13	17.45	19.78	22.11	24.44	26.76	29.09	31.42
7	4.07	6.79	9.50	12.22	14.93	17.65	20.36	23.08	25.79	28.51	31.22	33.94	36.65
8	4.65	7.76	10.86	13.96	17.07	20.17	23.27	26.38	29.48	32.58	35.68	38.79	41.89
9	5.24	8.73	12.22	15.71	19.20	22.69	26.18	29.67	33.16	36.65	40.15	43.64	47.13
10	5.82	9.70	13.58	17.45	21.33	25.21	29.09	32.97	36.85	40.73	44.61	48.48	52.36
11	6.40	10.67	14.93	19.20	23.47	27.73	32.00	36.27	40.53	44.80	49.07	53.33	57.60
12	6.98	11.64	16.29	20.95	25.60	30.25	34.91	39.56	44.22	48.87	53.53	58.18	62.84
13	7.56	12.61	17.65	22.69	27.73	32.78	37.82	42.86	47.90	52.95	57.99	63.03	68.07
14	8.15	13.58	19.01	24.44	29.87	35.30	40.73	46.16	51.59	57.02	62.45	67.88	73.31
15	8.73	14.55	20.36	26.18	32.00	37.82	43.64	49.45	55.27	61.09	66.91	72.73	78.55





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