



2020-21 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.

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Introduction

This guide has been created to provide approximate costs for renting equipment or obtaining custom farming operations from another farmer. It is updated every two years.

The guide is applicable for 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, etc.).

This situation is different than obtaining the services of someone who rents equipment or does custom operations as a business (e.g. custom sprayers). 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 should be used for is when farmers share equipment and need to establish the value that each farm is receiving.

New information in the 2020-21 Guide

The assumptions and calculations for the 2020-2021 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 \$0.906/L.
- Annual interest rate for equipment loans changed from 6 per cent to 5 per cent.
- Labour rate increased from \$22/hr. to \$26.40/hr.
- The amount of the purchase subject to financing has been increased from 50 per cent to 75 per cent.
- Hay rakes have been added back into the guide.

Caution

Nearly every situation has unique circumstances and conditions. This guide does not address every situation. 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, etc.). 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 their negotiating skills and dealer incentives. Often, the final price paid is below the MSRP. Users are encouraged to use actual purchase prices when determining their rates.

Methodology

One 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 presented below.

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 \$/hr 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 \$/hr basis.

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 is also included.

Assumptions

In all cases, it is reasonable to assume that rented machinery is in good repair and is capable of performing 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

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 (MSRP).

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. Therefore, the salvage value is 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 fairly consistent rate over the next 10 to 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 the depreciated value will be split evenly over the years the equipment can be rented.

Financing Cost: It has been assumed that 25 per cent of the initial price is covered by the value of a trade-in and/or a cash payment. The remaining 75 per cent is financed. This is a change from previous guides, but reflects feedback from agricultural lenders. 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 payback. This annual borrowing rate is set at five per cent. The financing cost also includes an opportunity cost on the interest. This interest 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 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 (R&M): 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 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 \$/hr. 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 \$0.906/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, which farmers and custom operators are both eligible for as a fuel permit exemption holder. Fuel costs do not include a carbon tax because most activities would be 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 ball-park indication of what fuel cost might be.

Labour Rate: The labour rate has been set at \$26.40 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 rates are determined by adding all yearly costs together and then divided 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 usage 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 taken into account.

Additional Information

A downloadable copy of this guide can be found on 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. 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 his/her 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 | \$30.46 | to | \$40.18 | \$85.83 | to | \$99.71 | |
| | Front wheel assist | \$50.71 | to | \$101.56 | \$108.16 | to | \$181.93 | |
| | Four wheel drive | \$105.77 | to | \$145.61 | \$201.77 | to | \$267.66 | |
| | Tracked | \$128.34 | to | \$206.71 | \$208.71 | to | \$356.89 | |
| Combine Combine Header Swather Grain Cart Grain Auger Grain Auger Grain Vac | Rotary | \$238.20 | to | \$422.53 | \$313.36 | to | \$546.66 | |
| | | \$11.61 | to | \$232.28 | | | 37.45 to 41.83 | |
| | | \$128.22 | to | \$169.05 | \$181.50 | to | \$236.91 | |
| | | Powered PTO | \$21.90 | to | \$71.60 | \$156.61 | to | \$306.15 |
| | | | \$15.36 | to | \$28.56 | | | \$11.85 to \$16.50 |
| | | | \$5.43 | to | \$52.08 | \$113.59 | to | \$186.79 |
| | | | \$78.28 | to | \$88.39 | \$164.11 | to | \$188.10 |
| SP Forage Harvester SP Forage Header Mower Conditioner Mower Conditioner Hay Rakes Baler Baler Round Pull Type Bale Mover Bale Mover | Self Propelled | \$290.86 | to | \$398.86 | \$403.53 | to | \$555.29 | |
| | | \$28.30 | to | \$111.96 | | | \$23.83 to \$54.84 | |
| | Pull Type | \$178.59 | to | \$166.62 | \$246.46 | to | \$230.32 | |
| | | \$19.42 | to | \$48.23 | \$105.25 | to | \$134.05 | |
| | | \$19.24 | to | \$60.88 | \$105.07 | to | \$146.70 | |
| | Small Square | \$23.28 | to | \$37.98 | \$109.11 | to | \$123.81 | |
| | Large Square | \$110.94 | to | \$167.05 | \$219.10 | to | \$301.76 | |
| | Round | \$29.59 | to | \$110.94 | \$115.41 | to | \$219.10 | |
| | Pull Type | \$31.66 | to | \$47.48 | \$139.82 | to | \$182.20 | |
| | Self Propelled | | | \$223.83 | | | \$283.36 | |
| Air Drills Air Hoe Drills Air Disc Drills Air Seeders Row Crop Planters | | \$236.52 | to | \$287.94 | \$438.29 | to | \$522.50 | |
| | | \$207.35 | to | \$297.54 | \$409.12 | to | \$532.10 | |
| | | \$241.91 | to | \$404.48 | \$443.68 | to | \$606.25 | |
| | | \$193.25 | to | \$364.94 | \$395.02 | to | \$599.50 | |
| | | \$238.37 | to | \$522.74 | \$346.53 | to | \$704.67 | |
| Cultivators Cultivators Harrows Harrows Vertical Tillage Tools Vertical Tillage Tools Land Roller Land Scraper | Field | \$32.46 | to | \$63.22 | \$167.17 | to | \$197.93 | |
| | Heavy duty | \$41.30 | to | \$74.53 | \$223.23 | to | \$276.30 | |
| | Mid, Heavy | \$71.23 | to | \$88.92 | \$253.16 | to | \$290.69 | |
| | Packers | | | \$13.52 | | | \$148.24 | |
| | Compact, high speed | \$96.99 | to | \$128.45 | \$278.92 | to | \$363.00 | |
| | Heavy duty | \$111.61 | to | \$190.56 | \$293.55 | to | \$425.12 | |
| | | \$20.67 | to | \$102.88 | \$128.83 | to | \$284.81 | |
| | | \$58.28 | to | \$201.59 | \$166.44 | to | \$383.52 | |
| Sprayers | High Clearance | \$442.85 | to | \$547.86 | \$515.93 | to | \$651.15 | |
| Post Pounder Vertical Feed Mixers Grinder Mixer Feed Mixer Bale Processor Manure Spreaders | | \$10.78 | to | \$21.98 | \$96.61 | to | \$107.80 | |
| | | \$27.21 | to | \$51.90 | \$135.36 | to | \$160.05 | |
| | | \$19.91 | to | \$39.04 | \$128.06 | to | \$173.75 | |
| | | | | \$20.57 | | | \$128.73 | |
| | | \$18.91 | to | \$35.17 | \$127.07 | to | \$169.88 | |
| | Chain Unload | \$30.05 | to | \$107.31 | \$138.21 | to | \$215.47 | |
| Hauling grain from field to yard | \$0.33 per bu.shel 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. | \$107,200 | 24 | 18.63 | 7.86 | 3.97 | 30.46 | 21.74 | 26.40 | 7.22 | 85.83 |
| 120+ hp. | \$141,400 | 28 | 24.57 | 10.37 | 5.24 | 40.18 | 25.37 | 26.40 | 7.77 | 99.71 |

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. | \$215,300 | 26 | 31.66 | 12.44 | 6.61 | 50.71 | 23.56 | 26.40 | 7.49 | 108.16 |
| Medium (average) 160-224 hp. | \$283,800 | 36 | 41.73 | 16.40 | 8.72 | 66.84 | 32.62 | 26.40 | 8.85 | 134.71 |
| Large (average) 225+ hp. | \$431,200 | 48 | 63.40 | 24.91 | 13.25 | 101.56 | 43.49 | 26.40 | 10.48 | 181.93 |

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. | \$454,000 | 63 | 66.75 | 25.22 | 13.80 | 105.77 | 57.08 | 26.40 | 12.52 | 201.77 |
| Medium (average) 450-549 hp. | \$536,600 | 76 | 78.90 | 29.81 | 16.31 | 125.01 | 68.86 | 26.40 | 14.29 | 234.56 |
| Large (average) 550+ hp. | \$625,000 | 88 | 91.89 | 34.72 | 18.99 | 145.61 | 79.73 | 26.40 | 15.92 | 267.66 |

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.

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. | \$511,600 | 48 | 75.22 | 36.38 | 16.74 | 128.34 | 43.49 | 26.40 | 10.48 | 208.71 |
| 360-449 hp. | \$576,400 | 77 | 84.75 | 40.99 | 18.86 | 144.60 | 69.76 | 26.40 | 14.42 | 255.18 |
| 450-549 hp. | \$680,900 | 110 | 100.11 | 48.42 | 22.28 | 170.81 | 99.66 | 26.40 | 18.91 | 315.78 |
| 550-599 hp. | \$750,600 | 112 | 110.36 | 53.38 | 24.56 | 188.30 | 101.47 | 26.40 | 19.18 | 335.35 |
| 600+ hp. | \$824,000 | 115 | 121.15 | 58.60 | 26.96 | 206.71 | 104.19 | 26.40 | 19.59 | 356.89 |

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

SP 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. | \$492,200 | 43 | 157.91 | 49.22 | 31.07 | 238.20 | 38.96 | 26.40 | 9.80 | 313.36 | 8 |
| Class 6 Rotary 301 - 360 hp. | \$570,300 | 51 | 182.96 | 57.03 | 36.00 | 275.99 | 46.21 | 26.40 | 10.89 | 359.49 | 10 |
| Class 7 Rotary 361 - 420 hp. | \$621,200 | 55 | 199.29 | 62.12 | 39.21 | 300.63 | 49.83 | 26.40 | 11.43 | 388.29 | 12 |
| Class 8 Rotary 421 - 500 hp. | \$684,000 | 71 | 219.44 | 68.40 | 43.18 | 331.02 | 64.33 | 26.40 | 13.61 | 435.35 | 15 |
| Class 9 Rotary 501 - 560 hp. | \$715,800 | 82 | 229.64 | 71.58 | 45.18 | 346.41 | 74.29 | 26.40 | 15.10 | 462.20 | 17 |
| Class 10 Rotary 561+ hp. | \$873,100 | 90 | 280.11 | 87.31 | 55.11 | 422.53 | 81.54 | 26.40 | 16.19 | 546.66 | 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.) |
|---------------------------|-----------|-------------------------|------------------------------------|--------------------------------------|----------------------|
| Pickup Headers | | | | | |
| 12 ft.. | \$37,600 | 7.84 | 2.26 | 1.51 | 11.61 |
| 15 ft.. | \$40,200 | 8.38 | 2.41 | 1.62 | 12.41 |
| Rigid Headers | | | | | |
| 20-25 ft.. | \$52,200 | 10.88 | 4.18 | 2.26 | 17.32 |
| 30-35 ft.. | \$66,700 | 13.91 | 5.34 | 2.89 | 22.13 |
| Flex Headers | | | | | |
| 20 ft.. | \$48,300 | 12.78 | 4.83 | 2.64 | 20.25 |
| 25 ft.. | \$52,500 | 13.89 | 5.25 | 2.87 | 22.02 |
| 30 ft.. | \$60,600 | 16.04 | 6.06 | 3.31 | 25.41 |
| 35 ft.. | \$69,700 | 18.45 | 6.97 | 3.81 | 29.23 |
| Draper Headers | | | | | |
| 25 ft.. | \$94,100 | 24.90 | 9.41 | 5.15 | 39.46 |
| 30 ft.. | \$113,700 | 30.09 | 11.37 | 6.22 | 47.68 |
| 35 ft.. | \$119,200 | 31.55 | 11.92 | 6.52 | 49.99 |
| 40-45 ft.. | \$126,500 | 33.48 | 12.65 | 6.92 | 53.05 |
| Corn Header | | | | | |
| 6 row, 30" spacing | \$73,800 | 51.55 | 20.66 | 10.83 | 83.05 |
| 8 row, 30" spacing | \$96,000 | 63.52 | 26.88 | 13.56 | 103.96 |
| 12 row, 30" spacing | \$149,500 | 98.92 | 41.86 | 21.12 | 161.89 |
| 16-18 row, 20-30" spacing | \$214,500 | 141.92 | 60.06 | 30.30 | 232.28 |

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:

$$\text{Custom Rate (\$/acre)} = \frac{\$435.35 + \$25.41}{15} = \$30.71/\text{acre}$$

Harvesting Grain cont'd

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) |
|------------------------------------|-----------|------------|-------------------------|------------------------------------|--------------------------------------|----------------------|--------------------|----------------------|------------------------------------|----------------------|----------------------|-----------------------|
| SP Swathers - Draper Header | | | | | | | | | | | | |
| 18-22 ft.. | \$258,800 | 22 | 85.62 | 25.88 | 16.72 | 128.22 | 19.93 | 26.40 | 6.95 | 181.50 | 11 | 16.50 |
| 25 ft.. | \$282,400 | 22 | 93.42 | 28.24 | 18.25 | 139.91 | 19.93 | 26.40 | 6.95 | 193.19 | 13 | 14.86 |
| 30 ft.. | \$317,600 | 32 | 105.07 | 31.76 | 20.52 | 157.35 | 28.99 | 26.40 | 8.31 | 221.05 | 16 | 13.82 |
| 35-40 ft.. | \$341,200 | 36 | 112.88 | 34.12 | 22.05 | 169.05 | 32.62 | 26.40 | 8.85 | 236.91 | 20 | 11.85 |

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).

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. | \$66,000 | 13.76 | 5.28 | 2.86 | 21.90 | 210 hp. 134.71 | 156.61 |
| Medium 1050-1600 bu. | \$144,900 | 30.21 | 11.59 | 6.27 | 48.07 | 300 hp. 181.93 | 230.00 |
| Large 2000 bu. | \$215,800 | 44.99 | 17.26 | 9.34 | 71.60 | 460 hp. 234.56 | 306.15 |

Annual hours of use: 250

Power unit cost includes fuel, labour and margin. The power units for small and medium grain carts are FWA tractors. The power unit for the large grain cart is a 4WD tractor.

To obtain a total cost for grain cart, power unit, and fuel (but not labour), subtract \$30.36 from the Custom Rate (\$26.4/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 | \$19,900 | 10.37 | 2.99 | 2.00 | 15.36 |
| 8" 40-49 ft., 20 hp. engine | \$19,700 | 10.27 | 2.96 | 1.98 | 15.21 |
| 8" 50-59 ft., 25 hp. engine | \$20,300 | 10.58 | 3.05 | 2.04 | 15.67 |
| 10" 40-49 ft., 35 hp. engine | \$25,600 | 13.34 | 3.84 | 2.58 | 19.76 |
| 10" 50-59 ft., 38 hp. engine | \$26,700 | 13.92 | 4.01 | 2.69 | 20.61 |
| 12-13" 39-40 ft., 38-50 hp. engine | \$37,000 | 19.29 | 5.55 | 3.73 | 28.56 |

Annual hours of use: 100

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

Harvesting Grain cont'd

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. | \$7,600 | 3.96 | 0.76 | 0.71 | 5.43 | 50 hp. 108.16 | 113.59 |
| 10" 40-89 ft. 5,400 bu./hr. | \$17,700 | 9.23 | 1.77 | 1.65 | 12.65 | 75 hp. 108.16 | 120.80 |
| 12" 70+ ft. 8,400 bu./hr. | \$38,900 | 20.28 | 3.89 | 3.62 | 27.79 | 75 hp. 108.16 | 135.95 |
| 13" 70-100 ft. 9,700 bu./hr. | \$43,200 | 22.52 | 4.32 | 4.03 | 30.86 | 100 hp. 108.16 | 139.02 |
| 16" 80+ ft. 21,000 bu./hr. | \$72,900 | 38.00 | 7.29 | 6.79 | 52.08 | 200 hp. 134.71 | 186.79 |

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 \$30.36 from the Custom Rate (\$26.4/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. | \$39,500 | 52.27 | 15.80 | 10.21 | 78.28 | 70 hp. 85.83 | 164.11 |
| 6000-10,000 bu./hr. | \$44,600 | 59.02 | 17.84 | 11.53 | 88.39 | 120 hp. 99.71 | 188.10 |

Annual hours of use: 100

The power units for all grain vacs are two wheel drive 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 \$30.36 from the Custom Rate (\$26.4/hr labour plus 15% margin).

Harvesting Hay

SP 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. | \$580,600 | 79 | 136.80 | 116.12 | 37.94 | 290.86 | 71.57 | 26.40 | 14.70 | 403.53 |
| Medium 600-799 hp. | \$693,500 | 103 | 163.40 | 138.70 | 45.31 | 347.41 | 93.32 | 26.40 | 17.96 | 485.09 |
| Large 800-899 hp. | \$796,200 | 121 | 187.60 | 159.24 | 52.03 | 398.86 | 109.63 | 26.40 | 20.40 | 555.29 |

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 SP 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 | \$56,500 | 13.31 | 11.30 | 3.69 | 28.30 | 17 | 1.66 |
| Corn, 14-20 ft. width | \$152,900 | 36.03 | 30.58 | 9.99 | 76.60 | 9 | 8.51 |
| Corn, 21-30 ft. width | \$223,500 | 52.66 | 44.70 | 14.60 | 111.96 | 13 | 8.61 |

Annual hours of use: 400

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

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

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

$$\text{Custom Rate (\$/acre)} = \frac{\$403.53 + \$28.30}{17}$$

SP 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. | \$237,300 | 36 | 104.67 | 50.62 | 23.29 | 178.59 | 32.62 | 26.40 | 8.85 | 246.46 | 13 | 18.96 |
| Disc Mower Conditioner 30 ft. | \$586,000 | 64 | 258.48 | 125.01 | 57.52 | 441.02 | 57.98 | 26.40 | 12.66 | 538.06 | 23 | 23.39 |
| Sickle Mower Conditioner 14-18 ft. | \$221,400 | 32 | 97.66 | 47.23 | 21.73 | 166.62 | 28.99 | 26.40 | 8.31 | 230.32 | 9 | 25.59 |

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

PT 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) |
|------------------------------------|----------|-------------------------|------------------------------------|--------------------------------------|----------------------|--------------------------|----------------------|----------------------|-----------------------|
| Sickle 7-9 ft. side pull | \$29,400 | 12.97 | 3.92 | 2.53 | 19.42 | 50 hp. 85.83 | 105.25 | 4 | 26.31 |
| 14 ft. | \$58,800 | 25.94 | 7.84 | 5.07 | 38.84 | 80 hp. 85.83 | 124.67 | 8 | 15.58 |
| 16-18 ft. | \$68,800 | 30.35 | 9.17 | 5.93 | 45.45 | 100 hp. 85.83 | 131.27 | 9 | 14.59 |
| Disc 9-10 ft. | \$39,100 | 17.25 | 6.52 | 3.56 | 27.33 | 60 hp. 85.83 | 113.15 | 7 | 16.16 |
| 11-13 ft. | \$58,800 | 25.94 | 9.80 | 5.36 | 41.10 | 90 hp. 85.83 | 126.92 | 9 | 14.10 |
| 14-16 ft. | \$69,000 | 30.44 | 11.50 | 6.29 | 48.23 | 100 hp. 85.83 | 134.05 | 12 | 11.17 |

Sickle annual hours of use: 150

Disc annual hours of use: 150

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) |
|--|-----------|-------------------------|------------------------------------|--------------------------------------|----------------------|--------------------------|----------------------|----------------------|-----------------------|
| Large Round Balers 4x4 ft. bales | \$31,700 | 20.97 | 4.76 | 3.86 | 29.59 | 50 hp. 85.83 | 115.41 | 17 | 6.79 |
| 4x5 ft. bales | \$49,600 | 32.82 | 7.44 | 6.04 | 46.30 | 60 hp. 85.83 | 132.12 | 15 | 8.81 |
| 4x6 ft. bales | \$60,400 | 39.96 | 9.06 | 7.35 | 56.38 | 70 hp. 85.83 | 142.20 | 15 | 9.48 |
| 5x5 ft. bales | \$44,900 | 29.71 | 6.74 | 5.47 | 41.91 | 70 hp. 85.83 | 127.73 | 12 | 10.64 |
| 5x6 ft. bales | \$58,200 | 38.51 | 8.73 | 7.09 | 54.32 | 80 hp. 85.83 | 140.15 | 12 | 11.68 |
| Large Square Balers Small (35x31x108") | \$174,000 | 76.75 | 19.72 | 14.47 | 110.94 | 145 hp. 108.16 | 219.10 | 40 | 5.48 |
| Medium (35x47x108") | \$212,000 | 93.51 | 24.03 | 17.63 | 135.17 | 145 hp. 108.16 | 243.33 | 40 | 6.08 |
| Large (50x47x108") | \$262,000 | 115.57 | 29.69 | 21.79 | 167.05 | 180 hp. 134.71 | 301.76 | 40 | 7.54 |
| Small Square Baler 14x18x52" bales | \$31,200 | 17.13 | 3.12 | 3.04 | 23.28 | 50 hp. 85.83 | 109.11 | 175 | 0.62 |
| 16x18x52" bales | \$50,900 | 27.94 | 5.09 | 4.95 | 37.98 | 50 hp. 85.83 | 123.81 | 175 | 0.71 |

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 \$0.27/bale for 4' diameter, \$0.40/bale for 5' diameter and \$0.76/bale for 6' diameter. Add \$0.78/bale for large square and \$0.05/bale for small square. For the cost of mesh add \$1.25/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

PT Bale Movers (Self Load/Unload)

| 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.) |
|-------------------------|-----------|-------------------------|------------------------------------|--------------------------------------|----------------------|--------------------------|----------------------|
| Round Bale 7-12 bale | \$30,200 | 19.98 | 7.55 | 4.13 | 31.66 | 120 hp. 108.16 | 139.82 |
| Round Bale 12-18 bale | \$60,700 | 40.16 | 15.18 | 8.30 | 63.64 | 180 hp. 134.71 | 198.35 |
| Large Square 4-6 bale | \$65,000 | 16.94 | 6.50 | 3.52 | 26.96 | 120 hp. 108.16 | 135.12 |
| Large Square 6-12 bale | \$85,700 | 22.33 | 8.57 | 4.64 | 35.54 | 180 hp. 134.71 | 170.25 |
| Large Square 12-20 bale | \$114,500 | 29.84 | 11.45 | 6.19 | 47.48 | 220 hp. 134.71 | 182.20 |

Annual hours of use: 100

Power units for all PT bale movers are front wheel assist tractors. Power unit cost includes fuel, labour and margin for

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 | \$11,600 | 12.09 | 4.64 | 2.51 | 19.24 | 50 hp. 85.83 | 105.07 | 9.6 | 10.94 |
| 21-30 ft. wheel | \$25,000 | 26.06 | 10.00 | 5.41 | 41.47 | 50 hp. 85.83 | 127.30 | 13.5 | 9.43 |
| 31-40 ft. wheel | \$36,700 | 38.26 | 14.68 | 7.94 | 60.88 | 50 hp. 85.83 | 146.70 | 19.0 | 7.72 |

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.

SP 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 | \$307,800 | 28 | 143.34 | 51.30 | 29.20 | 223.83 | 25.37 | 26.40 | 7.77 | 283.36 |

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 173 hp. engine.

Seeding

Seeding

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. | \$406,600 | 134.51 | 71.16 | 30.85 | 236.52 | 300 hp. 201.77 | 438.29 | 16 | 27.39 |
| Medium 46-65 ft. | \$534,000 | 176.66 | 93.45 | 40.52 | 310.62 | 400 hp. 201.77 | 512.39 | 26 | 19.71 |
| Large 66-86 ft. | \$495,000 | 163.76 | 86.63 | 37.56 | 287.94 | 525+ hp. 234.56 | 522.50 | 35 | 14.93 |

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. Note that 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. 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.

Seeding

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. | \$375,000 | 124.06 | 56.25 | 27.05 | 207.35 | 350 hp. 201.77 | 409.12 | 18 | 22.73 |
| Large 51-72 ft. | \$538,100 | 178.01 | 80.72 | 38.81 | 297.54 | 450+ hp. 234.56 | 532.10 | 28 | 19.00 |

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.

Seeding

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. | \$437,500 | 144.73 | 65.63 | 31.55 | 241.91 | 200 hp. 201.77 | 443.68 | 18 | 24.65 |
| Large 50-70 ft. | \$731,500 | 241.99 | 109.73 | 52.76 | 404.48 | 300+ hp. 201.77 | 606.25 | 28 | 21.65 |

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 disc drills are four wheel drive tractors. Note that 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. 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. | \$349,500 | 115.62 | 52.43 | 25.21 | 193.25 | 275 hp. 201.77 | 395.02 | 15 | 26.33 |
| Medium 41-59ft. | \$555,000 | 183.61 | 83.25 | 40.03 | 306.88 | 400 hp. 201.77 | 508.65 | 23 | 22.12 |
| Large 60-70 ft. | \$660,000 | 218.34 | 99.00 | 47.60 | 364.94 | 450+ hp. 234.56 | 599.50 | 30 | 19.98 |

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 | \$154,400 | 145.52 | 61.76 | 31.09 | 238.37 | 150 hp. 108.16 | 346.53 | 15 | 23.10 |
| 16 row planter | \$220,800 | 208.10 | 88.32 | 44.46 | 340.88 | 180 hp. 134.71 | 475.59 | 19 | 25.03 |
| 24 row planter | \$390,900 | 368.41 | 156.36 | 78.72 | 603.48 | 230 hp. 181.93 | 785.41 | 29 | 27.08 |
| 12/24 split row planter | \$253,900 | 239.29 | 101.56 | 51.13 | 391.98 | 210 hp. 134.71 | 526.69 | 15 | 35.11 |
| 16/32 split row planter | \$338,600 | 319.12 | 135.44 | 68.18 | 522.74 | 250 hp. 181.93 | 704.67 | 19 | 37.09 |

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

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) |
|--|-----------|-------------------------|------------------------------------|--------------------------------------|----------------------|--------------------------|----------------------|----------------------|-----------------------|
| Cultivators, field (with tine harrows) | | | | | | | | | |
| Small 24-35 ft. | \$84,100 | 21.92 | 6.31 | 4.23 | 32.46 | 160 hp. 134.71 | 167.17 | 17 | 9.83 |
| Medium 36-49 ft. | \$135,100 | 35.21 | 10.13 | 6.80 | 52.14 | 185 hp. 134.71 | 186.85 | 25 | 7.47 |
| Large 50-62 ft. | \$163,800 | 42.69 | 12.29 | 8.25 | 63.22 | 220 hp. 134.71 | 197.93 | 33 | 6.00 |
| Cultivators, heavy duty (with tine harrows) | | | | | | | | | |
| Small 23-40 ft. | \$107,000 | 27.89 | 8.03 | 5.39 | 41.30 | 230 hp. 181.93 | 223.23 | 18 | 12.40 |
| Medium 41-50 ft. | \$144,000 | 37.53 | 10.80 | 7.25 | 55.58 | 315 hp. 201.77 | 257.35 | 26 | 9.90 |
| Large 51-62 ft. | \$193,100 | 50.32 | 14.48 | 9.72 | 74.53 | 385 hp. 201.77 | 276.30 | 33 | 8.37 |

Annual hours of use: 200

Power units for cultivators are front wheel assist tractors except for medium and large heavy duty cultivators where a four wheel drive tractor is selected. Power unit cost includes fuel, labour and margin for tractor.

Soil Preparation 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) |
|-----------------------|-----------|-------------------------|------------------------------------|--------------------------------------|----------------------|--------------------------|----------------------|----------------------|-----------------------|
| Harrows, mid | | | | | | | | | |
| 50-90 ft. | \$83,400 | 48.59 | 13.34 | 9.29 | 71.23 | 225 hp. 181.93 | 253.16 | 51 | 4.96 |
| Harrows, heavy | | | | | | | | | |
| 40-84 ft. | \$115,200 | 60.05 | 17.28 | 11.60 | 88.92 | 375 hp. 201.77 | 290.69 | 45 | 6.46 |
| Harrow packers | | | | | | | | | |
| 25-62 ft. | \$48,300 | 28.14 | 1.21 | 4.40 | 33.75 | 175 hp. 134.71 | 168.46 | 32 | 5.26 |

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 mid and packer harrows are front wheel assist tractors. The power unit for heavy harrows is a four wheel drive tractor. Power unit cost includes fuel, labour and margin for tractor.

Soil Preparation 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) |
|--|-----------|-------------------------|------------------------------------|--------------------------------------|----------------------|--------------------------|----------------------|----------------------|-----------------------|
| Compact, high-speed disk | | | | | | | | | |
| Small 10-30 ft. | \$96,800 | 50.46 | 33.88 | 12.65 | 96.99 | 225+ hp. 181.93 | 278.92 | 19 | 14.68 |
| Large 31-50 ft. | \$128,200 | 66.82 | 44.87 | 16.75 | 128.45 | 500 hp. 234.56 | 363.00 | 39 | 9.31 |
| Heavy duty, compact high-speed disk | | | | | | | | | |
| Small 10-25 ft. | \$111,400 | 58.07 | 38.99 | 14.56 | 111.61 | 225+ hp. 181.93 | 293.55 | 17 | 17.27 |
| Large 26-40 ft. | \$190,200 | 99.14 | 66.57 | 24.86 | 190.56 | 500 hp. 234.56 | 425.12 | 32 | 13.29 |

Compact annual hours of use: 100

Heavy duty annual hours of use: 100

Power units for small compact and small heavy duty disks are front wheel assist tractors. Power units for large compact and large heavy duty disks are four wheel drive tractors. Power unit cost includes fuel, labour and margin for tractor.

Soil Preparation cont'd

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) |
|-------------------------------|-----------|-------------------------|------------------------------------|--------------------------------------|----------------------|--------------------------|----------------------|----------------------|-----------------------|
| 11-20 ft. fixed or 3 PT | \$21,700 | 15.08 | 2.89 | 2.70 | 20.67 | 50 hp. 108.16 | 128.83 | 9 | 14.31 |
| 46-85 ft. (5 roller sections) | \$69,000 | 47.95 | 9.20 | 8.57 | 65.73 | 200 hp. 134.71 | 200.44 | 38 | 5.27 |
| 65-89 ft. (7 roller sections) | \$108,000 | 75.06 | 14.40 | 13.42 | 102.88 | 240 hp. 181.93 | 284.81 | 45 | 6.33 |

Annual hours of use: 75

Power units for all land rollers 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 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.) |
|--------------------|-----------|-------------------------|------------------------------------|--------------------------------------|----------------------|--------------------------|----------------------|
| 6.0-7.9 CU. yard | \$34,000 | 40.05 | 10.63 | 7.60 | 58.28 | 100 hp. 108.16 | 166.44 |
| 8.0-9.9 CU. yard | \$43,600 | 51.36 | 13.63 | 9.75 | 74.74 | 125 hp. 108.16 | 182.90 |
| 10.0-10.9 CU. yard | \$58,800 | 69.27 | 18.38 | 13.15 | 100.79 | 150 hp. 108.16 | 208.95 |
| 11.0-12.9 CU. yard | \$62,400 | 73.51 | 19.50 | 13.95 | 106.96 | 220 hp. 108.16 | 215.12 |
| 13.0+ CU. yard | \$117,600 | 138.54 | 36.75 | 26.29 | 201.59 | 350 hp. 181.93 | 383.52 |

Annual hours of use: 80

The power units for all land scrapers front wheel assist 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) |
|--------------------------------|-----------|------------|-------------------------|------------------------------------|--------------------------------------|----------------------|--------------------|----------------------|------------------------------------|----------------------|----------------------|-----------------------|
| 1000 U.S. gal, 90-120 ft. boom | \$512,400 | 41 | 295.42 | 89.67 | 57.76 | 442.85 | 37.15 | 26.40 | 9.53 | 515.93 | 102 | 5.06 |
| 1200 U.S. gal, 90-120 ft. boom | \$581,400 | 52 | 335.20 | 101.75 | 65.54 | 502.49 | 47.11 | 26.40 | 11.03 | 587.02 | 102 | 5.76 |
| 1400 U.S. gal, 90-120 ft. boom | \$620,800 | 61 | 357.91 | 108.64 | 69.98 | 536.54 | 55.27 | 26.40 | 12.25 | 630.45 | 102 | 6.18 |
| 1600 U.S. gal, 90-120 ft. boom | \$633,900 | 70 | 365.47 | 110.93 | 71.46 | 547.86 | 63.42 | 26.40 | 13.47 | 651.15 | 102 | 6.38 |

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. 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 | \$5,200 | 6.78 | 2.60 | 1.41 | 10.78 | 55 hp. 85.83 | 96.61 |
| Post pounder trailer mounted with engine | \$20,300 | 26.45 | 10.15 | 5.49 | 42.09 | n/a | n/a |
| Post pounder skid steer mounted | \$10,600 | 13.81 | 5.30 | 2.87 | 21.98 | 55 hp. 85.83 | 107.80 |

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. | \$51,900 | 17.17 | 6.49 | 3.55 | 27.21 | 110 hp. 108.16 | 135.36 |
| 500-750 CU. ft. | \$78,000 | 25.80 | 9.75 | 5.33 | 40.89 | 135 hp. 108.16 | 149.05 |
| 830-1150 CU. ft. | \$99,000 | 32.75 | 12.38 | 6.77 | 51.90 | 150 hp. 108.16 | 160.05 |

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.) |
|--|----------|-------------------------|------------------------------------|--------------------------------------|----------------------|--------------------------|----------------------|
| Grinder Mixers 360-440 CU. ft. | \$36,000 | 11.91 | 5.40 | 2.60 | 19.91 | 120 hp. 108.16 | 128.06 |
| 550-750 CU. ft. | \$70,600 | 23.36 | 10.59 | 5.09 | 39.04 | 200 hp. 134.71 | 173.75 |
| Feed Mixers Two 6 ft. Bale, 40 bu. grain | \$37,200 | 12.31 | 5.58 | 2.68 | 20.57 | 100 hp. 108.16 | 128.73 |
| Bale Processors Two 6 ft. Round Bale | \$34,200 | 11.31 | 5.13 | 2.47 | 18.91 | 155 hp. 108.16 | 127.07 |
| Six 6 ft. Round Bale | \$63,600 | 21.04 | 9.54 | 4.59 | 35.17 | 175 hp. 134.71 | 169.88 |

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.

Miscellaneous

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 | \$18,900 | 17.81 | 8.32 | 3.92 | 30.05 | 120 hp. 108.16 | 138.21 |
| 300-399 CU. ft. level chain unload | \$25,700 | 24.22 | 11.31 | 5.33 | 40.86 | 125 hp. 108.16 | 149.02 |
| 400-500 CU. ft. level chain unload | \$28,400 | 26.77 | 12.50 | 5.89 | 45.15 | 150 hp. 108.16 | 153.31 |
| 250-299 CU. ft. level side discharge | \$47,400 | 44.67 | 20.86 | 9.83 | 75.36 | 120 hp. 108.16 | 183.52 |
| 300-399 CU. ft. level side discharge | \$52,300 | 49.29 | 23.01 | 10.85 | 83.15 | 150 hp. 108.16 | 191.31 |
| 400-500 CU. ft. level side discharge | \$74,100 | 69.84 | 32.60 | 15.37 | 117.81 | 180 hp. 134.71 | 252.52 |
| 500+ CU. ft. level side discharge | \$76,200 | 71.82 | 33.53 | 15.80 | 121.14 | 200 hp. 134.71 | 255.86 |
| 250-300 CU. ft., hydraulic push, vertical beaters | \$53,000 | 49.95 | 23.32 | 10.99 | 84.26 | 120 hp. 108.16 | 192.42 |
| 400-500 CU. ft., hydraulic push, vertical beaters | \$67,500 | 63.62 | 29.70 | 14.00 | 107.31 | 150 hp. 108.16 | 215.47 |

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

Appendix A: Cost of Hauling Grain from Field to Yard

Truck cost: excluding labour \$151.94 /hour*
 Auger cost: 8 inch x 60' with gas engine (excluding labour) \$15.67 /hour
 Labour cost: \$26.40 /hour

| Distance from Field to Yard (miles) | 0.5 | 1 | 1.5 | 2 | 3 | 4 | 6 | 10 |
|--|----------|----------|----------|----------|----------|----------|----------|----------|
| Time Use (minutes) | | | | | | | | |
| (A) Time unload twice from one combine or once from each of two combines | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| (B) Travel time to yard and return | 4 | 6.5 | 8.5 | 10 | 12 | 15 | 21 | 33 |
| (C) Time truck running during unload | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| (D) Truck running time per trip | 18 | 20.5 | 22.5 | 24 | 26 | 29 | 35 | 47 |
| (E) Total unload time at bin | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 |
| <i>Wait Time in Field (truck not running)</i> | | | | | | | | |
| (F) Hauling from one combine | 47 | 44.5 | 42.5 | 41 | 39 | 36 | 30 | 18 |
| (G) Hauling from two combines | 11 | 8.5 | 6.5 | 5 | 3 | 0 | 0 | 0 |
| Total Time per Trip | | | | | | | | |
| (H) Hauling from one combine | 68 | 68 | 68 | 68 | 68 | 68 | 68 | 68 |
| (I) Hauling from two combines | 32 | 32 | 32 | 32 | 32 | 32 | 38 | 50 |
| Component Costs Per Trip | | | | | | | | |
| (J) Truck costs per trip | \$45.58 | \$51.91 | \$56.98 | \$60.78 | \$65.84 | \$73.44 | \$88.63 | \$119.02 |
| (K) Auger costs per trip | \$1.83 | \$1.83 | \$1.83 | \$1.83 | \$1.83 | \$1.83 | \$1.83 | \$1.83 |
| (L) Labour costs per trip (one combine) | \$29.92 | \$29.92 | \$29.92 | \$29.92 | \$29.92 | \$29.92 | \$29.92 | \$29.92 |
| (M) Labour costs per trip (two combines) | \$14.08 | \$14.08 | \$14.08 | \$14.08 | \$14.08 | \$14.08 | \$16.72 | \$22.00 |
| Custom Rate (\$/hr.) (includes 15% margin) | | | | | | | | |
| (N) Hauling from one combine | \$78.47 | \$84.89 | \$90.03 | \$93.88 | \$99.02 | \$106.73 | \$122.15 | \$152.98 |
| (O) Hauling from two combines | \$132.59 | \$146.24 | \$157.16 | \$165.35 | \$176.27 | \$192.65 | \$194.62 | \$197.13 |
| Custom Rate (\$/bu.) (includes 15% margin) | | | | | | | | |
| (P) Hauling from one combine (bu./hr. = 300) | \$0.26 | \$0.28 | \$0.30 | \$0.31 | \$0.33 | \$0.36 | \$0.41 | \$0.51 |
| (Q) Hauling from two combines (bu./hr. = 600) | \$0.22 | \$0.24 | \$0.26 | \$0.28 | \$0.29 | \$0.32 | \$0.32 | \$0.33 |

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, \$0.906/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:

| | <u>Your Value</u> | <u>Example</u> |
|--|----------------------|---|
| Replacement cost of building | | \$20,000 |
| Retained value of building (at end of years of service) | | \$8,000 |
| Interest rate (opportunity cost not included) | | 5.00% |
| Repair rate (% of replacement cost)* | | 0.50% |
| Annual insurance premium | | \$60 |
| Optimal life | | 30 |
| <u>Calculate:</u> | | |
| A. Depreciation: (Replacement cost - Retained Value) / Optimal Life = | <input type="text"/> | (\$20,000 - \$8,000) / 30 = \$400 |
| B. Interest Cost: Annual interest cost = Total interest cost / Optimal Life Assumes 75% financing and 7 years loan payback period | <input type="text"/> | 98.76 |
| C. Insurance: Annual insurance premiums = | <input type="text"/> | \$60 |
| D. Repairs: Annual repair rate x Replacement cost = | <input type="text"/> | \$100 |
| Total = A + B + C + D | <input type="text"/> | \$659 per year / 3000 bu. = 0.22 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 \$0.52/hr. for a 7 hp. fan, \$0.37/hr. for a 5 hp. fan and \$0.22/hr. for a 3 hp. fan for electricity costs.

Appendix C: Combine Classifications

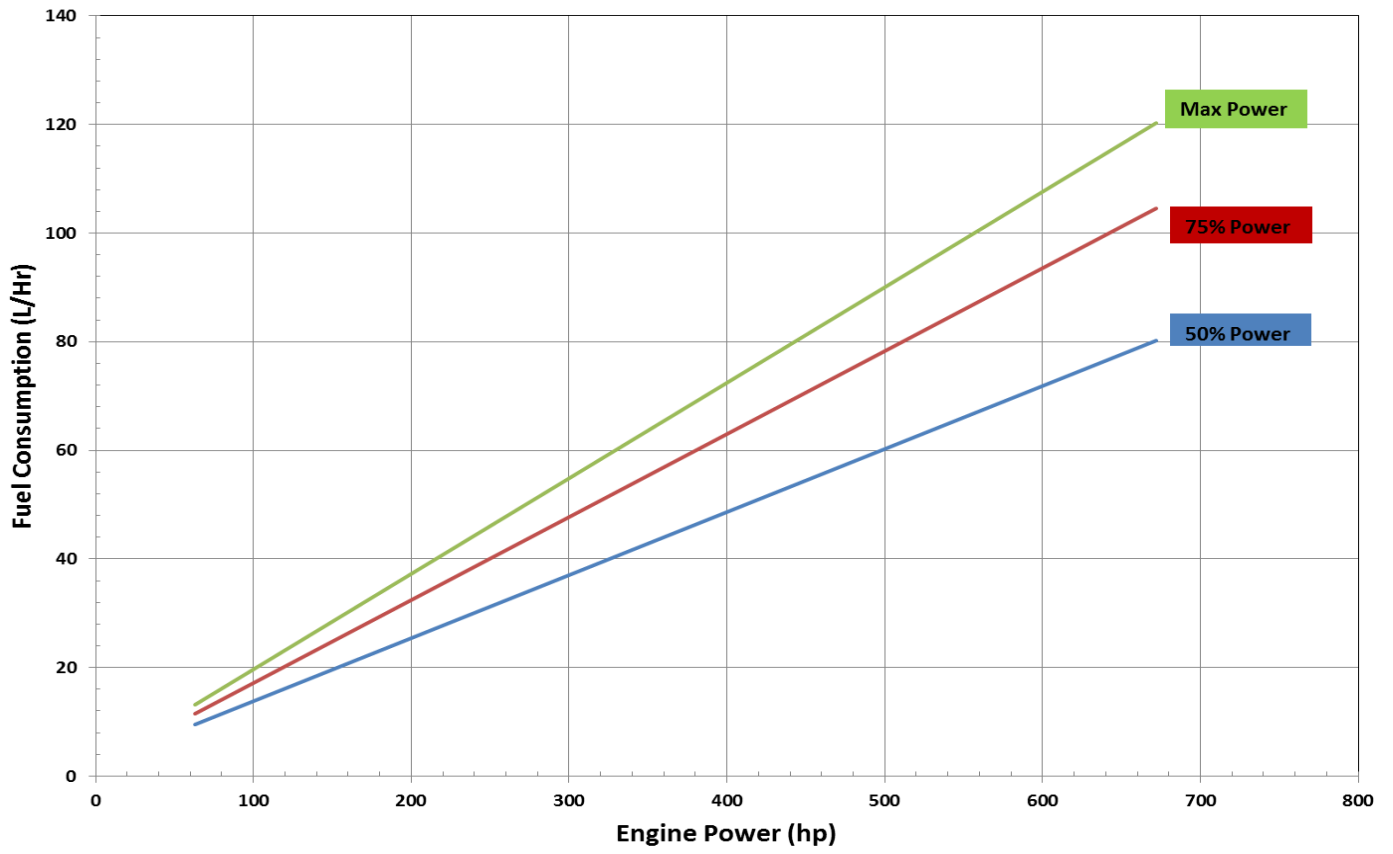
| Size | Acre/Hour | Manufacturer | Model |
|----------|---------------------------------------|--|---|
| Class 5 | ≤ 300 hp. 250 bu.shel hopper | John Deere | S650 |
| Class 6 | 301-360 hp. 300-390 bu.shel hopper | CNH CNH John Deere John Deere Case IH Gleaner Claas Lexion Massey Ferguson | CR6.80 CR6.90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

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.) |
|---|-----------------------|----------------------|-----------------------------------|------------------------------|
| Tractors | | | | |
| 2WD | 300 | 20 | 2.2 | |
| Front wheel assist | 450 | 15 | 2.6 | |
| 4WD | 450 | 15 | 2.5 | |
| Tracked | 450 | 15 | 3.2 | |
| Combines | | | | |
| SP Rotary | 250 | 12 | 2.5 | |
| Combine headers | | | | |
| Rigid headers | 250 | 20 | 2.0 | |
| Pickup headers | 250 | 20 | 1.5 | |
| Flex headers | 250 | 15 | 2.5 | |
| Draper headers | 250 | 15 | 2.5 | |
| Corn headers | 100 | 15 | 2.8 | |
| Swathers SP | 200 | 15 | 2.0 | 5.5 |
| Grain Carts | 250 | 20 | 2.0 | |
| Powered Augers | 100 | 20 | 1.5 | |
| PTO Augers | 100 | 20 | 1.5 | |
| Grain Vac | 50 | 15 | 2.0 | |
| SP Forage Harvester | 400 | 10 | 8.0 | 6.5 |
| SP Forage Harvester Header | 400 | 10 | 8.0 | |
| SP Mower/conditioner | 150 | 15 | 3.2 | 8.0 |
| PT Mower/conditioner (sickle) | 150 | 15 | 2.0 | 5.75 |
| PT Mower/conditioner (disc) | 150 | 15 | 2.5 | 8.0 |
| Hay Rakes (Wheel) | 50 | 20 | 2.0 | |
| Balers | | | | |
| Round | 100 | 15 | 1.5 | |
| Large square | 150 | 15 | 1.7 | |
| Small square | 100 | 20 | 1.0 | |
| Bale movers | | | | |
| PT Round | 100 | 15 | 2.5 | |
| PT Large square | 200 | 20 | 2.0 | |
| SP Small square | 150 | 15 | 2.5 | |
| Air drills (independent openers) | 200 | 15 | 3.5 | 4.75 |
| Air hoe drills | 200 | 15 | 3.0 | 4.75 |
| Air disk drills | 200 | 15 | 3.0 | 4.75 |
| Air seeder | 200 | 15 | 3.0 | 4.75 |
| Row crop planters | 100 | 10 | 4.0 | 5.0 |
| Cultivators | 200 | 20 | 1.5 | 6.0 |
| Standard harrows | 75 | 25 | 1.2 | 7.5 |
| Heavy harrows | 100 | 20 | 1.5 | 7.5 |
| Harrow packers | 200 | 25 | 0.5 | 7.5 |
| Vertical tillage tools | 100 | 20 | 3.5 | 10.0 |
| Land roller | 75 | 20 | 1.0 | 6.0 |
| Land scraper | 80 | 10 | 2.5 | |
| High clearance sprayers | 200 | 8 | 3.5 | 10.0 |
| Post pounder | 40 | 20 | 2.0 | |
| Vertical feed mixer | 200 | 15 | 2.5 | |
| Grinder mixers and feed mixers | 200 | 15 | 3.0 | |
| Bale Processors | 200 | 15 | 3.0 | |
| Manure spreader | 100 | 10 | 4.4 | |

Appendix E: Fuel Consumption Based on Engine Size

Appendix E: Fuel Consumption Based on Engine Size



Appendix F: Conversion tables

| Hectares or acres per hour | Dollars Per Hectare Or Acre | | | | | | | | | | | | |
|-------------------------------|-----------------------------|---------|---------|---------|---------|---------|---------|---------|----------|----------|----------|----------|----------|
| | 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 |

| Hectares or acres per hour | Dollars per Hectare or Acre | | | | | | | | | | | | |
|-------------------------------|-----------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | 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 |
| 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 |

Notes

Notes

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