

COSHOCTON COUNTY AGRICULTURE & NATURAL RESOURCES**July 20 (Edition #156)**

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Hello Coshocton County! The dog days of summer are upon us! It was good to get some precipitation a few days ago. However, we will continue to beg for timely rains (maybe next week!).

The **2022 Ohio Farm Custom Rates** were released this week and I have attached the complete bulletin at the end of today's issue. These rates are always a good starting point as you negotiate the price for completing a custom activity for your neighbor (or hire someone).

Congratulations to Pearl Valley Cheese for shining again in the Ohio State Fair Cheese Contest. We are so proud of our friends at Pearl Valley Cheese!

Stay cool and continue to stay hydrated

Sincerely,

David L. Marrison

Coshocton County OSU Extension ANR Educator

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THE OHIO STATE UNIVERSITY
COLLEGE OF FOOD, AGRICULTURAL,
AND ENVIRONMENTAL SCIENCES

Soybean Progress and Pod Set Growth Stages

By: Dr. Laura Lindsey

Source: <https://agcrops.osu.edu/newsletter/corn-newsletter/2022-23/soybean-progress-and-pod-set-growth-stages>

Currently, most soybean fields in Ohio are at the R3 growth stage, meaning there is a pod at least 3/16 inch long (but less than 3/4 inch long) at one of the four uppermost nodes on the main stem with a fully developed leaf. Some late planted fields may still be at the flowering growth stage while some early planted fields may be entering the R4 growth stage (pod 3/4 inch long at one of the four uppermost nodes on the main stem with a fully developed leaf).



What does the soybean crop need to maximize yield during pod set? The number of pods per acre sets the maximum number of seeds per acre, which is the component most strongly related to final yield. Therefore, pod development becomes one of the most critical stages in the life of soybean. While stress at this time will result in aborted pods, seed number per pod and seed size may compensate for loss of pods. The R3-R4 growth stage is an important time to scout your fields for diseases, insects, and nutrient deficiencies and apply fungicide, insecticide, and foliar fertilizer if conditions warrant an application.

Misconceptions at the R3-R4 growth stage: There are several common misconceptions about soybean plants at the pod set stages.

Misconception	Reality
The soybean plant needs to retain most of its pods to maximize yield.	Pod abortion occurs naturally and allows the soybean plant to adapt to current environmental conditions. Many pods will still abort under stress-free conditions.
Presence of 4 and 5 bean pods is required for high yields.	Pod number and seed size affect yield more than seeds per pod.
Light needs to penetrate the whole canopy.	Complete canopy closure by this stage is important to capture all available sunlight, retain soil moisture, and reduce weed competition.
Making a sprayer trip across the field will either be beneficial or neutral.	Tire traffic at this stage can lead to yield declines.
Foliar fertilizers will be beneficial to provide nutrients to pods and will impact yield.	Data from across the U.S. , shows no yield benefit to foliar fertilizer application at the R3 in the absence of a visual nutrient deficiency.
Late season nitrogen application will provide a positive return on investment.	Data from across the U.S. , shows no consistent economic benefit to late-season nitrogen fertilizer application.

For more information on soybean pod set, see this Science for Success

video: <https://www.youtube.com/watch?v=ThlgsQ4IOiQ> and also this Science for Success

FactSheet: <https://soybeanresearchinfo.com/wp-content/uploads/2022/01/Science-for-Success-Soybean-Growth-Stages-V3.pdf>

To Spray or Not to Spray...Foliar Products at R3

By: Laura Lindsey, Andy Michel, and Horacio Lopez-Nicora

Source: <https://agcrops.osu.edu/newsletter/corn-newsletter/2022-23/spray-or-not-spray%E2%80%A6foliar-products-r3>

When should I spray a foliar fungicide?

First, consider the disease triangle. For a disease to develop, there must be: 1) a susceptible host (Is your soybean variety resistant or susceptible?), 2) a virulent pathogen (Is there a history of a certain disease in your field? Do you see any visual symptoms of disease?), and 3) conducive environmental conditions. Most foliar

diseases, such as brown leaf spot and frogeye leaf spot, are favored by wet conditions. In our trials, brown leaf spot and frogeye leaf spot tend to be the two most common soybean diseases.

In these trials, we've measured a yield response to foliar fungicide applied at R3 in 9 out of 28 environments, ranging from 4 to 8 bu/acre. At the responsive locations, which tended to be in central and southern Ohio, there were foliar diseases present (brown spot and frogeye leaf spot). Additionally, these positive yield responses occurred in years with greater precipitation. Very little to no yield response occurred in dry years and in years when soybeans were flooded. If you have visual symptoms of disease, a conducive environment, and susceptible variety, R3 is a good time to spray a foliar fungicide.

Next, we must decide what fungicide to use and there are several products available for control of foliar diseases. Researchers across the U.S. constantly compare and evaluate fungicide efficacy for control of major soybean foliar diseases. The North Central Regional Committee on Soybean Diseases (NCERA-137) annually updates this information, which can be found here: [Fungicide efficacy for control of soybean foliar diseases](#).

Finally, if you decide to spray, we recommend using fungicide products that contain active ingredients from different fungicide mode of action groups. This will minimize the risk of developing fungicide resistance by the pathogen. For example, resistance to the strobilurin (QoI – FRAC Group 11) fungicides has been reported in the fungus that causes frogeye leaf spot in Ohio; therefore, strobilurin fungicides alone should be avoided when managing this disease. Please contact your extension educator if you suspect that fungicide resistance is an issue in your field. To learn more about fungicide resistance, visit [Fungicide resistance in field crops FAQs](#).



Figure 2. Frogeye leaf spot (left) and brown spot (right).

Figure 3. Insect defoliation from Japanese beetle isolated to the top canopy and field edges.

When should I spray a foliar insecticide?

Often, if a farmer plans on spraying a foliar fungicide, they will tank-mix a foliar insecticide. Over the past several years, we've tested foliar insecticide in 28 Ohio environments. Out of those 28 environments, we've only found a yield response in one environment (+5 bu/acre) with an insecticide applied at the R3 growth stage. In the other 27 environments, soybean yield was unaffected by foliar insecticide with defoliation levels in the mid- to upper canopy at <15%. For soybean, insecticide application is advised when defoliation levels reach 30% in pre-bloom stages, 10% in bloom, and 15% during pod fill to harvest. Keep in mind that defoliation is measured and averaged across the entire



plant—not just the leaves that look the worst. Defoliation may be isolated to one portion of the canopy and sometimes just the field edge (Figure 3). [For more information on estimating defoliation, please see “Soybean Defoliation” pdf.](#)

When should I spray foliar fertilizer?

In Ohio, the most common micronutrient deficiency is manganese. However, even then, we’ve only measured a yield response to manganese foliar fertilizer in two out of 20 Ohio environments. Soybeans are most likely to respond to foliar fertilizer when there are visual symptoms of deficiency. Intervenial chlorosis is a visual symptom of manganese deficiency (Figure 4). Manganese deficiency tends to occur in fields with high pH or high organic matter (muck), especially if soils are droughty. In dry soil, manganese is converted to a form that is unavailable for plant uptake.

Figure 4. Manganese deficiency symptoms include intervenial chlorosis.

Recently, soybean agronomists across the U.S. evaluated foliar fertilizers in 46 environments and found no soybean yield increase when the products were applied prophylactically (no visual deficiency symptoms). For more information on this study, see: <https://www.youtube.com/watch?v=0DtNagk6ghI>. In most situations, foliar fertilizers are unnecessary.



Summary

Multiple trials in Ohio and across the U.S. have shown that prophylactic applications of foliar fungicide, insecticide, and fertilizer provide no yield benefit. Before applying these products, it’s important to scout your fields for disease, insects, and nutrient deficiencies. If you decide to spray, we recommend leaving untreated strip checks (at least three per field). Comparing treated and untreated areas will improve decision making in the future.

Ohio Farm Custom Rates – 2022

By: Barry Ward, Eric Richer and John Barker

Source: <https://agcrops.osu.edu/newsletter/corn-newsletter/2022-23/ohio-farm-custom-rates-2022>

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

Ohio Farm Custom Rates

The “Ohio Farm Custom Rates 2022” publication reports custom rates based on a statewide survey of 223 farmers, custom operators, farm managers, and landowners conducted in 2022. These rates, except where noted, include the implement and tractor if required, all variable machinery costs such as fuel, oil, lube, twine, etc., and labor for the operation.

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

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

Some custom rates reflect discounted rates as the parties involved have family or community relationships. Discounted rates may also occur when the custom work provider is attempting to strengthen a relationship to help secure the custom farmed land in a future purchase, cash rental or other rental agreement. Some providers charge differently because they are simply attempting to spread their fixed costs over more acreage to decrease fixed costs per acre and are willing to forgo complete cost recovery.

New this year, the number of responses for each operation has been added to the data presented. In cases where there were too few responses to statistically analyze, summary statistics are not presented.

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

The data from this survey are intended to show a representative farming industry cost for specified machines and operations in Ohio. As a custom farm work provider, the average rates reported in this publication may not cover your total costs for performing the custom service. As a customer, you may not be able to hire a custom service for the average rate published in this factsheet.

It is recommended that you calculate your own costs carefully before determining the custom rate to charge or pay. It may be helpful to compare the custom rates reported in this fact sheet with machinery costs calculated by economic engineering models available online. The following resources are available to help you calculate and consider the total costs of performing a given machinery operation.

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

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

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

Fuel price changes may cause some uncertainty in setting a custom rate. Significant volatility in diesel price over the last several months has caused some concern for custom rate providers that seek to cover all or most of the costs associated with custom farm operations. The approximate price of diesel fuel during the survey period ranged from \$4.50 - \$5.25 per gallon for off-road (farm) usage. As a custom farm work provider, if you feel that your rate doesn't capture your full costs due to fuel price increases you might consider a custom rate increase or fuel surcharge based on the increase in fuel costs.

For example, let's assume the rate you planned to charge for a chisel plow operation was based on \$4.50 per gallon diesel costs and the current on-farm diesel price is \$5.50 per gallon. This is a \$1 per gallon increase. The chisel plow operation uses 1.15 gallons of fuel per acre so the added fuel surcharge could be set at \$1.15 per acre (1.15 gallons x \$1 gallon).

The complete "Ohio Farm Custom Rates 2022" publication is available online at the Farm Office website: <https://farmoffice.osu.edu/farm-management/custom-rates-and-machinery-costs>

New Lease Termination Law Applies to Farm Lease Landlords

By: Peggy Kirk Hall, Associate Professor, Agricultural & Resource Law

Source: <https://farmoffice.osu.edu/blog/tue-07192022-1128am/new-lease-termination-law-applies-farm-lease-landlords>

Lawsuits over late terminations of farm crop leases might reduce after a [new law in Ohio](#) takes effect on July 21, 2022. The law will affect situations where the parties in a farm crop leasing arrangement have not addressed a date or method for terminating the lease--typically verbal leases, although a written lease might also fail to address termination. A landlord in those situations who wants to end the crop lease will have to do

so by delivering a written notice of termination to the tenant operator by September 1. A late attempt by the landlord to terminate the lease after September 1 would not be effective and the lease would continue for another crop year, although a tenant operator can choose to agree to accept a landlord's late termination.

Why the new law?

It's been common practice in Ohio for landlords and tenants to enter into a simple farm lease arrangement, usually verbal, that repeats from year-to-year with the only term up for discussion sometimes being the rental amount. Other important leasing details are overlooked, such as when the lease ends and what one party must do to terminate the lease. The lack of these details is especially problematic when the land changes hands due to a sale or a landlord's death, or if another operator tries to "bid up" the leasing amount. Without any termination notice provisions, the landlord might try to terminate the leasing arrangement in late Winter or early Spring, after the tenant operator made investments on the belief that the lease would continue for another crop year. If the operator stands to lose investments and income, litigation is the likely outcome and a court will decide if the landlord attempted to terminate the lease "too late." We've seen many cases like this in Ohio.



Ohio's new law aims to reduce farm lease termination conflicts by requiring the landlord to give advance notice of the intent to terminate the lease. A termination by the landlord by September 1 should provide the operator with sufficient notice that the lease is not continuing, keeping the operator from making post-harvest and end-of-year investments for the next crop year. This is a common law in other states, and Ohio is one of the last states in the Midwest to enact this type of "statutory termination date" for farm leases. New law highlights the importance of a written farm lease

We always encourage parties to put their farm lease agreement in writing. A written farm lease can detail important terms such as termination, preventing uncertainty in the future. A written lease also complies with Ohio's Statute of Frauds. That law requires a farm lease to be in writing, meaning that verbal leases aren't automatically enforceable in a court of law. Due to the Statute of Frauds requirement, parties to a verbal farm lease must convince the court that their lease deserves an "exception" from the law and if the exception is granted, would have to prove the terms of their verbal agreement. Verbal leases are always at risk of non-enforcement and disagreement over the terms of the lease.

Using a written lease, the parties may agree to their own termination procedures and dates and the statutory termination law would not apply to their leasing arrangement. The law is simply a default for those crop leasing situations that do not address termination.

Details of the new law

We've developed several questions and answers that help explain the new law, available here and in our newest Law Bulletin, Ohio's New Statutory Termination Date for Farm Crop Leases, available on farmoffice.osu.edu.

What farm leases are subject to the new law?

The law applies to both written and verbal "agricultural lease agreements" that address the planting, growing, and harvesting of agricultural crops. The law does not apply to leases for pasture, timber, farm buildings, horticultural buildings, or equipment.

What if a lease already addresses termination?

The new law only applies when a leasing arrangement has not provided for a termination date or a method for giving notice of termination. If the landlord and tenant operator have addressed these provisions in their leasing situation, the provisions are unchanged by the law and continue to be effective.

When is the termination effective?

If a landlord gives notice of termination in writing by September 1, the law states that the lease is terminated either upon the date harvest is complete or December 31, whichever is earlier. However, the law allows the parties to establish a different termination date if agreed to in writing.

How must a landlord give notice of termination?

The landlord must give the notice in writing and deliver it to the tenant operator by hand, mail, facsimile, or email by September 1. The law does not require using specific language for the notice, but we recommend including the date of the notice, an identification of the lease property, and a statement that the lease will terminate at the end of harvest or December 31, 20____ unless the parties agree in writing to a different date.

What if a landlord terminates after September 1?

Unless the leasing arrangement provides otherwise, a termination delivered by the landlord after September 1 is not effective and the lease would continue for another period. However, the tenant operator could agree to accept the late termination. If so, the parties should both sign a termination date agreement.

Can a tenant terminate a lease after September 1?

A tenant operator is not subject to the new law and can terminate a lease after September 1 unless the leasing arrangement provides otherwise.

Help with farm leases

Our [farmland leasing library](#) contains several resources about the legal aspects of farm leases. We also address the [economic side of farmland leasing](#) with data on cash rents and farmland values, custom rates and machinery costs, and enterprise budgets. If you need assistance finding an agricultural attorney who works with farm leases, we can help with that too; contact us by email at aglaw@osu.edu. We'll do our best to help you reduce the uncertainty and risk of your farm leasing arrangement.

Ohio State Fair Cheese Contest Results

Source: <https://www.morningagclips.com/ohio-state-fair-cheese-contest-results/>

Grand Champion and Reserve Champion cheesemakers were recently selected at the 2022 Ohio State Fair Cheese contest at Pearl Valley Cheese in Fresno, Ohio.

The American Dairy Association Mideast, who coordinated the event, is pleased to announce that Guggisberg Cheese of Millersburg, Ohio, took top honors, receiving the overall Grand Champion and Urban Stead Cheese of Cincinnati, Ohio took the Reserve Champion award.

Participation was at an all-time high with 60 entries from cheesemakers across the state. Winners of the contest by classification are as follows:

Swiss Class:

First Place (Blue Ribbon)
Second Place (Red Ribbon)
Third Place (White Ribbon)

Guggisberg Cheese, Millersburg, Ohio
Pearl Valley Cheese, Fresno, Ohio
Guggisberg Cheese, Millersburg, Ohio



Grand Champion and Reserve Champion cheesemakers were recently selected at the 2022 Ohio State Fair Cheese contest at Pearl Valley Cheese in Fresno, Ohio. (American Dairy Association Mideast)

Other Swiss Class:

First Place (Blue Ribbon)
Second Place (Red Ribbon)
Third Place (White Ribbon)

Guggisberg Cheese, Millersburg, Ohio
Pearl Valley Cheese, Fresno, Ohio
Guggisberg Cheese, Millersburg, Ohio

Mild Cheddar Class:

First Place (Blue Ribbon)
Second Place (Red Ribbon)
Third Place (White Ribbon)

Urban Stead Cheese, Cincinnati, Ohio
Snowville Creamery, Pomeroy, Ohio
Middlefield Original Cheese, Middlefield, Ohio

Aged Cheddar Class:

First Place (Blue Ribbon)
Second Place (Red Ribbon)
Third Place (White Ribbon)

Urban Stead Cheese, Cincinnati, Ohio
Middlefield Original Cheese, Middlefield, Ohio
Middlefield Original Cheese, Middlefield, Ohio

Surface Mold Ripened Class:

First Place (Blue Ribbon)
Second Place (Red Ribbon)

Marchant Manor Cheese, Cleveland, Ohio
Kuhweid Creamery, Sugarcreek, Ohio

Bacteria Ripened Class:

First Place (Blue Ribbon)
Second Place (Red Ribbon)
Third Place (White Ribbon)

Black Radish Creamery, Columbus, Ohio
Kuhweid Creamery, Sugarcreek, Ohio
Marchant Manor Cheese, Cleveland, Ohio

Fresh Unripened Class:

First Place (Blue Ribbon)
Second Place (Red Ribbon)

Bunker Hill Cheese, Millersburg, Ohio
Urban Stead Cheese, Cincinnati, Ohio

Open Class – Cow's Milk:

First Place (Blue Ribbon)
Second Place (Red Ribbon)
Third Place (White Ribbon)

Pearl Valley Cheese, Fresno, Ohio – Marble Colby
Pearl Valley Cheese, Fresno, Ohio – Colby
Pearl Valley Cheese, Fresno, Ohio – Colby

Open Class – Flavored:

First Place (Blue Ribbon)
Second Place (Red Ribbon)
Third Place (White Ribbon)

Pearl Valley Cheese, Fresno, Ohio – Smoked Swiss
Pearl Valley Cheese, Fresno, Ohio – Pepper Jack
Tri State Cheese, Hicksville, Ohio – Pepper Jack

Open Class – Other Milk:

First Place (Blue Ribbon)
Second Place (Red Ribbon)

Blue Jacket Dairy, Bellefontaine, Ohio
Marchant Manor Cheese, Cleveland, Ohio

Judges for the contest included Jeff Jirik, retired cheese product developer, Brian Schlatter, ACS CCP, CCSE, cheesemaker, James Troyer, owner of Troyer Foods, Abbe Turner, cheesemaker and Kristopher Welch, dairy plant supervisor.

Manure Science Review on July 26

Source: <https://agcrops.osu.edu/newsletter/corn-newsletter/2022-20/manure-science-review-coming-july-26th>

The annual Manure Science Review (MSR) will be held on Tuesday, July 26th from 9:00 am to 3:00 pm at the Ohio Agricultural Research and Development Center Northwest Station near Hoytville. The address is 4240 Range Line Rd., Custar, OH 43511.



Attendees will explore presentations about H2Ohio: Current Status and Future Plans from Terry Mescher, H2Ohio Program Director, ODA Division of Soil and Water Conservation, Beaver in a Bag: Creating Mini-Wetlands to Control Runoff from the Putnam SWCD office, Composting Pen Pack Cattle Manure for Improved Nutrient Transport from Jordan Beck, Understanding Manure Analysis – Comparison to Commercial Fertilizer from Glen Arnold, and Experience with Variable Rate Manure Application-Duane and Anthony Stateler, Stateler Family Farms

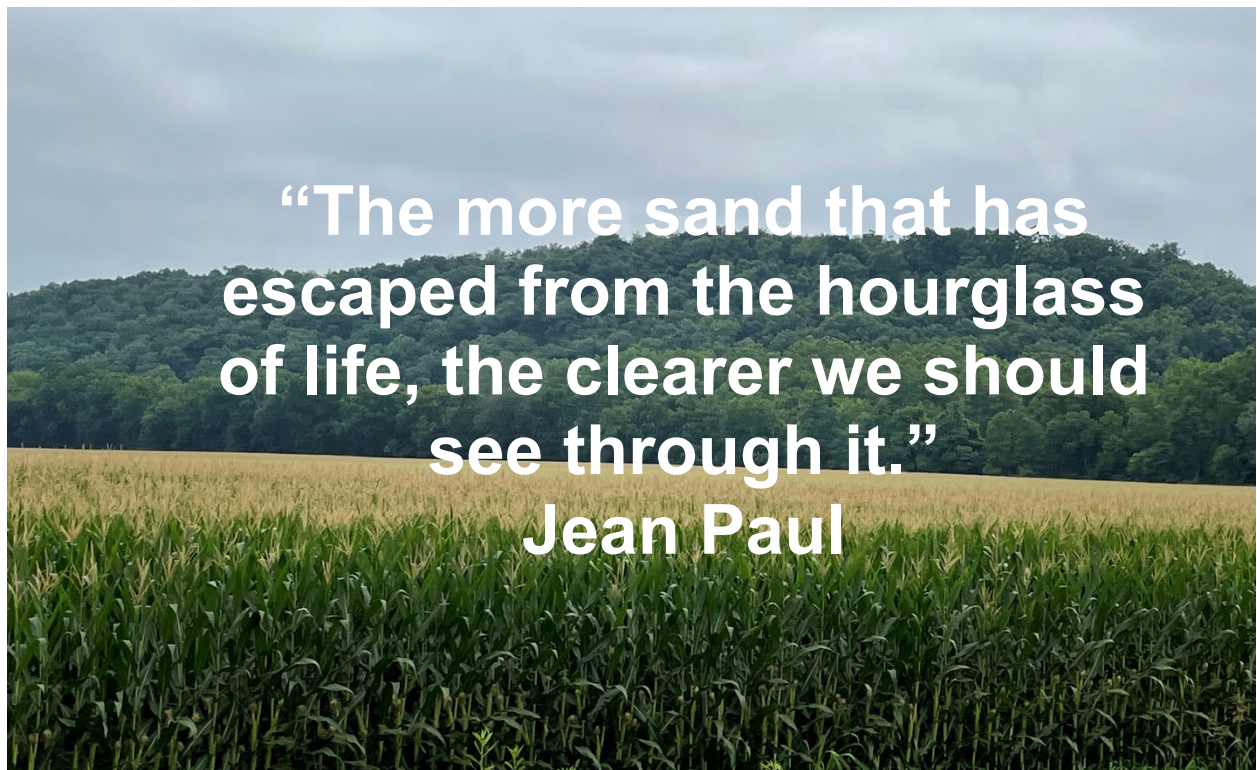
In the afternoon there will be demonstrations of solid and liquid applicators, the Cadman Side-dress System, Oxbo Equipment, in-season manure side-dress demos, drones for cover crop seeding, and more.

Continuing education credits will be available for Certified Crop Advisors (CCAs) and Certified Livestock Managers (CLMs). Registration costs are \$25 per person until July 15th and \$30 per person after that date. For program and registration details, click on the links below or contact Mary Wicks (wicks.14@osu.edu; 330.202.3533).

Program and registration details: [click here](#)

Online registration: [click here](#)

Sponsor & exhibitor opportunities: [click here](#)





Ohio Farm Custom Rates 2022

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

Ohio Farm Custom Rates

This publication reports custom rates based on a statewide survey of 223 farmers, custom operators, farm managers, and landowners conducted in 2022. These rates, except where noted, include the implement and tractor if required, all variable machinery costs such as fuel, oil, lube, twine, etc., and labor for the operation.

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

- Type or size of equipment used (e.g. 20-shank chisel plow versus a 9-shank)
- Size and shape of fields,
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Some custom rates reflect discounted rates as the parties involved have family or community relationships. Discounted rates may also occur when the custom work provider is attempting to strengthen a relationship to help secure the custom farmed land in a future purchase, cash rental or other rental agreement. Some providers charge differently because they are simply attempting to spread their fixed costs over more acreage to decrease fixed costs per acre and are willing to forgo complete cost recovery.

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

The measures shown in the following tables are the summary of the survey respondents. The measures are the Maximum, Minimum, Responses, Average (Mean), Median, Standard Deviation, and Range. The Maximum and Minimum reported in the table are the maximum and minimum amounts reported from the survey data for a given custom operation. Responses indicates the number of survey responses for each given operation. Average reported in this publication is a simple



average of all the survey responses for each operation. The median represents the middle value of the survey responses. Standard Deviation is a measure of variability. Range identified in the tables consists of two numbers. The first is the average plus the standard deviation. The second number of the range is the average minus the standard deviation. In cases where there were too few responses to statistically analyze, statistics are not presented due to the low response rate.

The data from this survey are intended to show a representative farming industry cost for specified machines and operations in Ohio. As a custom provider, the average rates reported in this publication may not cover your total costs for performing the custom service. As a customer, you may not be able to hire a custom service for the average rate published in this factsheet.

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

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

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

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

2022 Survey Responses

Below are tables summarizing the results of the 2022 Ohio Farm Custom Rate Survey. Remember, fuel prices have an impact on custom rates and rates may fluctuate based on large movements in fuel prices. The average price of retail on-highway diesel in 2021 according the U.S. Energy Information Administration (EIA) was \$3.29 per gallon. The approximate price of diesel fuel during the survey period ranged from \$4.50 - \$5.25 per gallon for off-road (farm) usage. At the end of this fact sheet is a sample calculation of machinery rental based on custom rates reported in this survey.

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



Ohio Farm Custom Rates 2022

Operation								
Soil Preparation	Max	Min	Responses	Average	Median	Stan Dev	Range	
Stalk Chopper (\$/Acre):	\$18	\$6	9	\$12.60	\$12.00	\$3.72	\$16.32	\$8.88
Moldboard Plow (\$/Acre):	\$50	\$11	10	\$24.20	\$20.00	\$11.64	\$35.84	\$12.56
Chisel Plow (\$/Acre):	\$45	\$10	22	\$19.60	\$18.00	\$7.78	\$27.38	\$11.82
Disk Chisel (\$/Acre):	\$45	\$10	32	\$21.20	\$18.25	\$7.66	\$28.86	\$13.54
Disk Tandem (\$/Acre):	\$30	\$8	26	\$17.30	\$16.00	\$5.51	\$22.81	\$11.79
Disk Heavy or Offset (\$/Acre):	\$50	\$12	11	\$24.70	\$25.00	\$9.60	\$34.30	\$15.10
Soil Finishing (\$/Acre):	\$45	\$9	33	\$19.50	\$17.50	\$7.89	\$27.39	\$11.61
Field Cultivator (\$/Acre):	\$45	\$9	34	\$17.40	\$15.25	\$6.93	\$24.33	\$10.47
Land Leveling (\$/Acre):	\$32	\$9	10	\$17.20	\$16.10	\$6.96	\$24.16	\$10.24
Subsoiling: 8-15 Inches Deep (\$/Acre):	\$50	\$15	23	\$26.70	\$25.00	\$8.10	\$34.80	\$18.60
V-Ripping: Over 15 Inches Deep (\$/Acre):	\$43	\$20	6	\$28.50	\$25.50	\$8.06	\$36.56	\$20.44
Strip Tillage (\$/Acre):	\$40	\$12	8	\$28.60	\$30.00	\$9.14	\$37.74	\$19.46
Strip Tillage w/Fert. Injection (\$/Acre):	\$50	\$9	9	\$30.10	\$32.00	\$11.44	\$41.54	\$18.66
Fertilizer Application - Ground	Max	Min	Responses	Average	Median	Stan Dev	Range	
Dry Bulk (\$/Acre):	\$10	\$3.50	52	\$6.90	\$7.00	\$1.55	\$8.45	\$5.35
Liquid, Knife (\$/Acre):	\$25	\$4.50	23	\$13.00	\$13.00	\$4.44	\$17.44	\$8.56
Liquid, Spray (\$/Acre):	\$13	\$5	36	\$8.40	\$8.00	\$1.68	\$10.08	\$6.72
Anhydrous (\$/Acre):	\$24	\$6	25	\$15.50	\$16.00	\$3.47	\$18.97	\$12.03
Late Season Nitrogen Application with Coulters (\$/Acre)	\$18	\$12	7	\$14.60	\$15.00	\$1.83	\$16.43	\$12.77
Late Season Nitrogen Application with Drops (\$/Acre)	\$16	\$8	19	\$11.80	\$12.00	\$2.45	\$14.25	\$9.35
Lime Application (Material not included) (\$/Acre):	\$15	\$4	22	\$8.50	\$8.00	\$2.39	\$10.89	\$6.11
OR Lime Application (Material not included) (\$/Ton):	\$12.50	\$1.80	13	\$8.00	\$8.00	\$2.44	\$10.44	\$5.56
Variable Rate Fertilizer Application (\$/Acre)	\$14	\$5.25	30	\$7.80	\$7.75	\$1.87	\$9.67	\$5.93
Number of Products Applied	3	1	16	1.80	2.00	0.634	2.43	1.17
Chemical Control of Weeds/Insetcs/Disease	Max	Min	Responses	Average	Median	Stan Dev	Range	
Spraying - Self Propelled Sprayer (\$/Acre)	\$15	\$4.50	91	\$8.20	\$8.00	\$2.22	\$10.42	\$5.98
Spraying - Pull-Type Sprayer (\$/Acre)	\$12	\$4	23	\$7.40	\$7.50	\$1.79	\$9.19	\$5.61
Spraying Late Season (Fungicide) (\$/Acre)	\$18	\$5.50	42	\$9.80	\$9.00	\$2.92	\$12.72	\$6.88
Mechanical Weed Control	Max	Min	Responses	Average	Median	Stan Dev	Range	
Rotary Hoeing (\$/Acre)	\$18	\$5	9	\$9.50	\$8.00	\$3.54	\$13.04	\$5.96
Conventional Cultivating (\$/Acre)	\$21	\$10	7	\$13.40	\$12.00	\$3.54	\$16.94	\$9.86
Weed Electrocutation (\$/Acre)	\$40	\$34	6	\$35.70	\$35.00	\$1.97	\$37.67	\$33.73
Aerial Application	Max	Min	Responses	Average	Median	Stan Dev	Range	
Chemical (Fungicide etc.) (\$/Acre)	\$25	\$8	26	\$12.70	\$12.00	\$3.68	\$16.38	\$9.02
Seed (\$/Acre)	\$25	\$10	7	\$14.40	\$13.00	\$4.78	\$19.18	\$9.62
Fertilizer (\$/Acre)	\$25	\$9	9	\$14.70	\$14.00	\$4.89	\$19.59	\$9.81

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Ohio Farm Custom Rates 2022

Planting Operations								
Conventional Tillage	Max	Min	Responses	Average	Median	Stan Dev	Range	
Plant Corn, 30 Inch Rows (\$/Acre)	\$35	\$12	37	\$22.50	\$22.00	\$5.04	\$27.54	\$17.46
Plant Corn, 30 Inch Rows with Fertilizer Application (\$/Acre)	\$50	\$12	54	\$23.60	\$23.00	\$7.54	\$31.14	\$16.06
Variable Rate Corn Planting (\$/Acre)	\$37	\$15	14	\$25.80	\$26.00	\$6.30	\$32.10	\$19.50
Plant Soybeans, 15 or 30 Inch Rows (\$/Acre)	\$50	\$13	60	\$22.40	\$21.00	\$6.19	\$28.59	\$16.21
Variable Rate Soybean Planting (\$/Acre)	\$32	\$15	14	\$24.00	\$25.00	\$5.18	\$29.18	\$18.82
Drill Soybeans (\$/Acre)	\$50	\$12	29	\$20.60	\$18.00	\$7.96	\$28.56	\$12.64
Drill Small Grains (\$/Acre)	\$50	\$10	33	\$19.70	\$18.00	\$8.04	\$27.74	\$11.66
No-Tillage	Max	Min	Responses	Average	Median	Stan Dev	Range	
Plant Corn, 30 Inch Rows (\$/Acre)	\$50	\$15	38	\$24.40	\$22.00	\$6.91	\$31.31	\$17.49
Plant Corn, 30 Inch Rows with Fertilizer Application (\$/Acre)	\$50	\$15	55	\$25.00	\$24.00	\$6.88	\$31.88	\$18.12
Variable Rate Corn Planting (\$/Acre)	\$38	\$18	11	\$28.10	\$28.00	\$6.53	\$34.63	\$21.57
Plant Soybeans, 15 or 30 Inch Rows (\$/Acre)	\$50	\$15	59	\$23.40	\$22.00	\$6.29	\$29.69	\$17.11
Variable Rate Soybean Planting (\$/Acre)	\$30	\$17	14	\$23.90	\$25.00	\$4.51	\$28.41	\$19.39
Drill Soybeans (\$/Acre)	\$50	\$12	34	\$20.90	\$18.00	\$8.02	\$28.92	\$12.88
Drill Small Grains (\$/Acre)	\$50	\$12	37	\$21.20	\$20.00	\$7.62	\$28.82	\$13.58
Grass/Legume/Pasture Seeding	Max	Min	Responses	Average	Median	Stan Dev	Range	
Broadcast (\$/Acre)	\$11	\$4	6	\$8.50	\$10.00	\$2.57	\$11.07	\$5.93
Grain Drill (\$/Acre)	\$35	\$10	24	\$20.00	\$20.00	\$5.87	\$25.87	\$14.13
Grain Harvest	Max	Min	Responses	Average	Median	Stan Dev	Range	
Harvest Corn: Combine, Grain Cart, Haul Local to Farm (\$/Acre)	\$90	\$22	65	\$38.80	\$35.00	\$12.43	\$51.23	\$26.37
Harvest Soybeans: Combine, Grain Cart, Haul Local to Farm (\$/Acre)	\$75	\$22	72	\$37.10	\$35.00	\$11.63	\$48.73	\$25.47
Harvest Wheat: Combine, Grain Cart, Haul Local to Farm (\$/Acre)	\$75	\$16	53	\$35.50	\$33.00	\$10.77	\$46.27	\$24.73
Added Charge GPS Mapping (\$/Acre)	\$7	\$1	12	\$2.40	\$1.84	\$1.77	\$4.17	\$0.63
Combine Only - Corn (\$/Acre)	\$55	\$15	70	\$33.20	\$32.00	\$6.77	\$39.97	\$26.43
Combine Only - Soybeans (\$/Acre)	\$55	\$15	76	\$32.20	\$30.00	\$6.65	\$38.85	\$25.55
Combine Only - Small Grains (\$/Acre)	\$55	\$15	52	\$32.10	\$30.00	\$7.59	\$39.69	\$24.51
Ear Corn Picker (\$/Acre)	\$25	\$10	3	Statistics not presented due to low response rate.				
Grain Cart (\$/Acre)	\$15	\$2	40	\$6.10	\$5.00	\$2.59	\$8.69	\$3.51
Grain Storage and Drying - On Farm	Max	Min	Responses	Average	Median	Stan Dev	Range	
Storage Charge (Cents/Bushel/Month)	\$0.14	\$0.02	28	\$0.048	\$0.045	\$0.022	\$0.070	\$0.026
Storage Charge (Cents/Bushel/Year)	\$0.72	\$0.10	19	\$0.252	\$0.180	\$0.175	\$0.427	\$0.077
Grain Drying (Cents/Per Point of Moisture Removed/Bushel)	\$0.090	\$0.025	15	\$0.042	\$0.040	\$0.015	\$0.058	\$0.027
Grain Storage and Drying - Commercial Elevator/Terminal	Max	Min	Responses	Average	Median	Stan Dev	Range	
Storage Charge per Month (Cents/Bushel/Month)	\$0.14	\$0.04	21	\$0.058	\$0.060	\$0.021	\$0.079	\$0.037
Storage Charge per Year (Cents/Bushel/Year)	\$0.72	\$0.20	7	\$0.453	\$0.480	\$0.218	\$0.671	\$0.234
Grain Drying (Cents/Per Point of Moisture Removed/Bushel)	\$0.090	\$0.025	10	\$0.048	\$0.040	\$0.020	\$0.068	\$0.028
Grain Hauling	Max	Min	Responses	Average	Median	Stan Dev	Range	
Farm to Market (Cents/Bushel)	\$0.49	\$0.03	77	\$0.18	\$0.16	\$0.09	\$0.27	\$0.09
In reference to the question above: Distance (Mileage One Way)	103	4	69	27	25	18.22	44.75	8.30
Field to Farm (Cents/Bushel)	\$0.18	\$0.05	30	\$0.11	\$0.10	\$0.04	\$0.15	\$0.07
In reference to the question above: Distance (Mileage One Way)	25	3	28	9	10	5.19	14.61	4.24

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Ohio Farm Custom Rates 2022

Silage/Haylage Harvest and Handling

Corn Silage	Max	Min	Responses	Average	Median	Stan Dev	Range	
Chopping (\$/Ton)	\$11	\$5	5	\$8.20	\$8.00	\$2.14	\$10.34	\$6.06
Chop, Haul, Fill (\$/Ton)	\$15	\$7	4	\$10.50	\$10.00	\$3.20	\$13.70	\$7.30
Chop (\$/Hour)	\$900	\$175	3	Statistics not presented due to low response rate.				

Haylage	Max	Min	Responses	Average	Median	Stan Dev	Range	
Chop (\$/Hour)	\$550	\$175	4	\$362.50	\$362.50	\$135.21	\$497.71	\$227.29
Chop, Haul, Fill (\$/Hour)	\$640	\$275	2					

Other Silage	Max	Min	Responses	Average	Median	Stan Dev	Range	
Pack Bunker (\$/Hour)	\$125	\$65	4	\$82.50	\$70.00	\$24.87	\$107.37	\$57.63
Fill Silage Bag (\$/Ton)	\$7	\$5	2	Statistics not presented due to low response rate.				

Hay Harvest

Field Operations	Max	Min	Responses	Average	Median	Stan Dev	Range	
Mowing (\$/Acre)	\$29	\$7	13	\$13.70	\$13.50	\$5.63	\$19.33	\$8.07
Mowing/Conditioning (\$/Acre)	\$30	\$7	27	\$15.00	\$15.00	\$5.21	\$20.21	\$9.79
Raking (\$/Acre)	\$15	\$5	23	\$8.50	\$8.00	\$2.50	\$11.00	\$6.00
Tedding (\$/Acre)	\$15	\$5	20	\$8.50	\$8.00	\$2.84	\$11.34	\$5.66

Baling: Small Square Bales	Max	Min	Responses	Average	Median	Stan Dev	Range	
Baled and Dropped on Ground (\$/Bale)	\$1.75	\$0.30	10	\$0.85	\$0.85	\$0.39	\$1.24	\$0.46
Baled and Loaded on Wagon (\$/Bale)	\$2.25	\$0.30	16	\$1.20	\$1.00	\$0.55	\$1.75	\$0.65
Baled, Loaded, Hauled, and Stored (\$/Bale)	\$3.00	\$0.75	7	\$2.00	\$2.00	\$0.65	\$2.65	\$1.35

Baling: Large Round Bales - 1500# Bale	Max	Min	Responses	Average	Median	Stan Dev	Range	
Baled and Left in Field (\$/Bale)	\$20	\$7	10	\$11.00	\$10.00	\$3.71	\$14.71	\$7.29
Baled and Net Wrapped (\$/Bale)	\$17	\$7	11	\$11.40	\$10.00	\$3.26	\$14.66	\$8.14
Move Stack or Large Bale (\$/Bale)	\$12	\$5	4	\$6.80	\$5.00	\$3.03	\$9.83	\$3.77

Baling: Large Round Bales - 600-1000# Bale	Max	Min	Responses	Average	Median	Stan Dev	Range	
Baled and Left in Field (\$/Bale)	\$20	\$6	28	\$10.10	\$10.00	\$2.74	\$12.84	\$7.36
Baled and Hauled from Field (\$/Bale)	\$15	\$10	4	\$13.00	\$13.50	\$2.12	\$15.12	\$10.88
Baled and Net Wrapped (\$/Bale)	\$15	\$8	25	\$10.60	\$10.00	\$2.06	\$12.66	\$8.54
Baled, Net Wrapped and Hauled from Field (\$/Bale)	\$20	\$8	6	\$13.30	\$13.50	\$3.90	\$17.20	\$9.40
Move Stack or Large Bale (\$/Bale)	\$10	\$5	3	Statistics not presented due to low response rate.				
Bale and Wrap Wet Bale/Stack in Plastic Plastic Included (\$/Bale)	\$25	\$11	7	\$18.00	\$18.00	\$5.10	\$23.10	\$12.90

Baling: Large Square Bales	Max	Min	Responses	Average	Median	Stan Dev	Range	
Baled and Left in Field (\$/Stack)	\$15	\$9	6	\$12.60	\$13.00	\$2.19	\$14.79	\$10.41

Complete Hay Harvest	Max	Min	Responses	Average	Median	Stan Dev	Range	
Complete Hay Harvest - Mow, Rake, Bale, Haul and Store Hire (\$/Ton)	\$70	\$40	4	\$52.50	\$50.00	\$10.90	\$63.40	\$41.60
Complete Hay Harvest - Mow, Rake, Bale, Haul and Store Share (% of Crop)	75	50	16	58	60	7.96	65.96	50.04

Custom Farming

All machinery operations:

Tillage, planting, spraying, tending & harvesting	Max	Min	Responses	Average	Median	Stan Dev	Range	
Corn (\$/Acre)	\$350	\$70	14	\$137.50	\$127.50	\$64.56	\$202.06	\$72.94
Soybeans (\$/Acre)	\$300	\$60	14	\$122.00	\$107.50	\$63.34	\$185.34	\$58.66
Small Grains (\$/Acre)	\$300	\$52.50	10	\$118.00	\$105.00	\$66.55	\$184.55	\$51.45

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Ohio Farm Custom Rates 2022

Operation	Max	Min	Responses	Average	Median	Stan Dev	Range	
Manure Handling and Application								
Pump & Spread (Surface) (\$/Gallon) Tanker	\$0.012	\$0.007	2	Statistics not presented due to low response rate.				
Pump & Spread (Surface) (\$/Gallon) Dragline	\$0.010	\$0.003	14	\$0.0072	\$0.0075	\$0.0021	\$0.0093	\$0.0051
Pump, Spread & Incorporate (\$/Gallon) Dragline	\$0.012	\$0.004	9	\$0.0082	\$0.0080	\$0.0020	\$0.0103	\$0.0062
Pump, Inject/Sidedress (\$/Gallon) Dragline	\$0.010	\$0.008	4	\$0.0091	\$0.0093	\$0.0007	\$0.0099	\$0.0084
Standard Setup Charge (\$/Job)	\$600	\$0	3	Statistics not presented due to low response rate.				
Upcharge if Sand is Used for Bedding (\$/Gallon)	\$0.0020	\$0.0005	5	\$0.0011	\$0.0010	\$0.0006	\$0.0017	\$0.0005
Hauling Liquid Manure per Hour without Frack Tank (\$/Hour)	\$210	\$100	6	\$133	\$108	\$43	\$177	\$90
Agitator Charge (Ex: \$0.0004) (\$/Gallon)	\$0.0009	\$0.0004	2	Statistics not presented due to low response rate.				
Agitation Boat (\$/Hour)	\$350	\$275	2	Statistics not presented due to low response rate.				
Manure Application - Solid Manure								
Spreading Manure at Field (\$/Ton)	\$12	\$2	7	\$7.50	\$8.00	\$2.71	\$10.21	\$4.79
Hauling & Spreading Manure within 2 Miles (\$/Hour)	\$210	\$45	5	\$111.00	\$100.00	\$59.53	\$170.53	\$51.47
Loading (Payload or Other) Manure (\$/Hour)	\$100	\$50	4	\$75.00	\$75.00	\$19.04	\$94.04	\$55.96
Loading/Hauling & Spreading within 2 miles: (\$/Hour)	\$260	\$25	5	\$132.00	\$140.00	\$78.01	\$210.01	\$53.99
Drainage and Tile Installation								
Ditching Machine (Wheel or Trencher)								
4" Plastic (\$/Foot)	\$1.00	\$0.275	6	\$0.60	\$0.50	\$0.27	\$0.87	\$0.33
6" Plastic (\$/Foot)	\$1.00	\$0.270	8	\$0.65	\$0.60	\$0.29	\$0.94	\$0.36
8" Plastic (\$/Foot)	\$1.00	\$0.270	7	\$0.66	\$0.60	\$0.29	\$0.96	\$0.37
Drainage Plow (Self-Propelled or Pull Behind)								
4" Plastic (\$/Foot)	\$0.70	\$0.12	29	\$0.32	\$0.30	\$0.14	\$0.46	\$0.17
6" Plastic (\$/Foot)	\$0.80	\$0.12	15	\$0.47	\$0.50	\$0.21	\$0.69	\$0.26
8" Plastic (\$/Foot)	\$1.00	\$0.15	9	\$0.51	\$0.40	\$0.29	\$0.81	\$0.22
Typical Depth of Tile Installation - Inches	42	24	25	33	32	4	37	28
Typical Lateral Spacing - Feet	60	20	40	34	30	9	43	25

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Ohio Farm Custom Rates 2022

Miscellaneous	Max	Min	Responses	Average	Median	Stan Dev	Range	
Bush Hogging (\$/Acre)	\$25	\$9	18	\$17.00	\$15.50	\$4.74	\$21.74	\$12.26
Bush Hogging (\$/Hour)	\$130	\$25	29	\$73.60	\$65.00	\$30.74	\$104.34	\$42.86
Income Tax Preparation (\$/Hour)	\$545	\$150	4	\$311.30	\$275.00	\$169.20	\$480.50	\$142.10
Income Tax Preparation (\$/Return)	\$1,500	\$50	25	\$496.40	\$350.00	\$352.44	\$848.84	\$143.96
Annual Farm Account Summary and Tax Preparation (\$/Return)	\$2,500	\$250	10	\$698.10	\$525.00	\$623.59	1,321.69	\$74.51
	Max	Min	Responses	Average	Median	Stan Dev	Range	
Bulldozing per Foot of Blade / Hour	\$25	\$8	13	\$13.20	\$12.50	\$4.22	\$17.42	\$8.98
Track Hoe - Cleaning Ditches (\$/Hour)	\$275	\$85	17	\$137.90	\$125.00	\$45.02	\$182.92	\$92.88
Clearing Land (\$/Hour)	\$285	\$40	13	\$139.60	\$125.00	\$72.02	\$211.62	\$67.58
Remove Snow - Loader (\$/Hour)	\$250	\$30	13	\$93.10	\$80.00	\$58.06	\$151.16	\$35.04
Remove Snow - Blade (\$/Hour)	\$250	\$20	10	\$87.00	\$70.00	\$64.82	\$151.82	\$22.18
Grinding Feed (\$/Cwt)	\$2	\$0.15	6	\$0.98	\$1.00	\$0.58	\$1.56	\$0.40
Hauling Livestock (\$/Mile)	\$4	\$0.75	11	\$2.10	\$2.00	\$0.90	\$3.00	\$1.20
Scouting Crops (\$/Acre)	\$7	\$3	4	\$4.10	\$3.25	\$1.67	\$5.77	\$2.43
Soil Testing (\$/Sample)	\$30	\$5	11	\$15.00	\$14.00	\$8.06	\$23.06	\$6.94
Soil Testing (\$/Acre)	\$10	\$2	12	\$5.60	\$7.00	\$2.46	\$8.06	\$3.14
Grid Soil Sampling (\$/Acre)	\$23.72	\$0.90	13	\$8.20	\$7.50	\$4.94	\$13.14	\$3.26
In Reference to the Prior Question, Average Grid Size (Acres)	5	0.50	11	2.50	2.50	1.00	3.50	1.50
Zone Soil Sampling (\$/Acre)	\$8	\$3.50	9	\$6.10	\$7.00	\$1.43	\$7.53	\$4.67
In Reference to the Prior Question, Average Zone Size (Acres)	20	7	8	10.40	9.00	3.94	14.34	6.46
Power Washing (\$/Hour)	\$55	\$40	4	\$48.80	\$50.00	\$5.45	\$54.25	\$43.35
	Max	Min	Responses	Average	Median	Stan Dev	Range	
Farm Labor								
General Farm Labor (\$/Hour)	\$35	\$9.50	83	\$16.40	\$15.00	\$4.71	\$21.11	\$11.69
Machinery Operation (\$/Hour)	\$39	\$10	45	\$19.20	\$18.00	\$5.77	\$24.97	\$13.43
Semitruck Driving (Seasonal) (\$/Hour)	\$35	\$14	37	\$19.20	\$20.00	\$4.06	\$23.26	\$15.14
Milking Cows (\$/Hour)	\$14	\$12	4	\$13.20	\$13.40	\$0.85	\$14.05	\$12.35
Hours Worked/Week (Average)	60.00	20.00	21	44.00	48.00	9.64	53.64	34.36
	Max	Min	Responses	Average	Median	Stan Dev	Range	
Machinery/Building Rental								
Tractor \$ per Horsepower / Hour	\$0.48	\$0.04	17	\$0.28	\$0.31	\$0.12	\$0.40	\$0.16
Combine (\$/Separator Hour)	\$325	\$150	4	\$231.30	\$225.00	\$62.29	\$293.59	\$169.01
In Reference to the Two Prior Options: Combine Header (Feet)	40	25	6	35.00	37.50	5.77	40.77	29.23
OR, in Reference to the Two Prior Options: Combine Header (Rows)	12	6	4	9.50	10.00	2.60	12.10	6.90
Grain Drill No-Till (\$/Acre)	\$19	\$8	9	\$11.10	\$10.00	\$3.51	\$14.61	\$7.59
In Reference to the Prior Question: Grain Drill Width (Feet)	15	10	6	13.30	15.00	2.36	15.66	10.94
Bobcat or Skidsteer Loader (\$/Day)	\$240	\$30	6	\$154.20	\$155.00	\$70.44	\$224.64	\$83.76
Dry Bulk Fertilizer Applicator (\$/Acre)	\$7	\$1.20	5	\$4.90	\$6.00	\$2.03	\$6.93	\$2.87
Anhydrous Ammonia Applicator Bar (\$/Acre)	\$15	\$4	4	\$9.80	\$10.00	\$5.26	\$15.06	\$4.54
Machinery Storage (\$/Square Foot/Year)	\$3	\$0.30	11	\$1.05	\$0.93	\$0.77	\$1.82	\$0.28
Hay Storage (\$/Ton)	\$10	\$5	4	\$8.50	\$9.50	\$2.06	\$10.56	\$6.44

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Estimating Machinery Rental Rate from Custom Rates

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

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

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

** For the percent of custom charge, use:
65% for tillage or 75% for planting and harvesting*

Example: From the 2022 custom rate tables above, the rate for a field cultivator (with tractor) is \$17.40/acre. The percent of custom charge for other associated costs is 65% for tillage.

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

$$\$17.40/\text{acre} \times 65\% = \$11.31/\text{acre}$$

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

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

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

$$\begin{aligned} (\text{HP} \times \text{per HP-hour rental rate}) \div \text{acres/hour} &= \text{tractor rental rate} \\ (310 \text{ HP} \times \$0.28) \div 33 \text{ acres/hour} &= \$2.63/\text{acre} \end{aligned}$$

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

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

$$\$11.31/\text{acre} - \$2.63/\text{acre} = \$8.68/\text{acre}$$