CFAES

OHIO STATE UNIVERSITY EXTENSION

COSHOCTON COUNTY AGRICULTURE & NATURAL RESOURCES

October 7, 2020 Issue

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Hello, Coshocton County! We have been blessed with great weather for the modified Coshocton County Fair and for harvest across the county. The nice weather has allowed for a nice start to our corn and soybean harvest. It appears our weather patterns are setting up for a nice run at harvest for much of the month of October.

Congratulations to all the 4-H and FFA who exhibited at the modified Coshocton County Fair. Yes, this year's fair was very different; but we are thankful many still got to participate and make fair memories.

OSU Extension released the 2020 Farm Custom Rates last Friday. This is one of our most requested publications each year. I have included it with this newsletter. This guide is a great way to start your negotiations when you hire or perform custom activities for other farmers.

Have a good and safe week!

Sincerely,

David L. Marrison

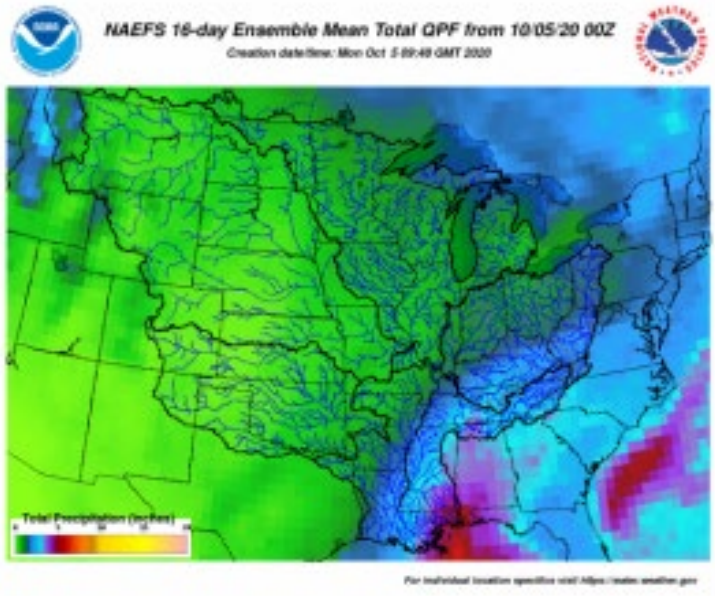
Coshocton County OSU Extension ANR Educator

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

Harvest to Spring Weather Outlook

By: Jim Noel
Source: https://agcrops.osu.edu/newsletter/corn-newsletter/2020-34/harvest-spring-weather-outlook

Areas of frost have occurred in parts of Ohio in late September to early October but the pattern is about to switch again toward a warmer and drier pattern for a decent part of October.



October Outlook
Expect a return to warmer and drier weather for a good part of this month. Temperatures will range from normal to 10 above normal this month but will average 2-5 degrees above normal. We have not had a widespread freeze yet but typically it ranges from Oct. 10-20 for much of the state and it looks like it will be in the later range of normal this year as we discussed a while ago. Rainfall the next two weeks can be seen in the attached image. Most of the wet weather will stay south of Ohio though far southern and eastern Ohio could get clipped by some tropical moisture return to yield near normal rainfall in those areas. Otherwise, rainfall should be below normal.

Winter Outlook
A pattern change will occur this winter. It appears it will start warmer than normal and then turn colder than normal. Precipitation will also become above wetter than normal.

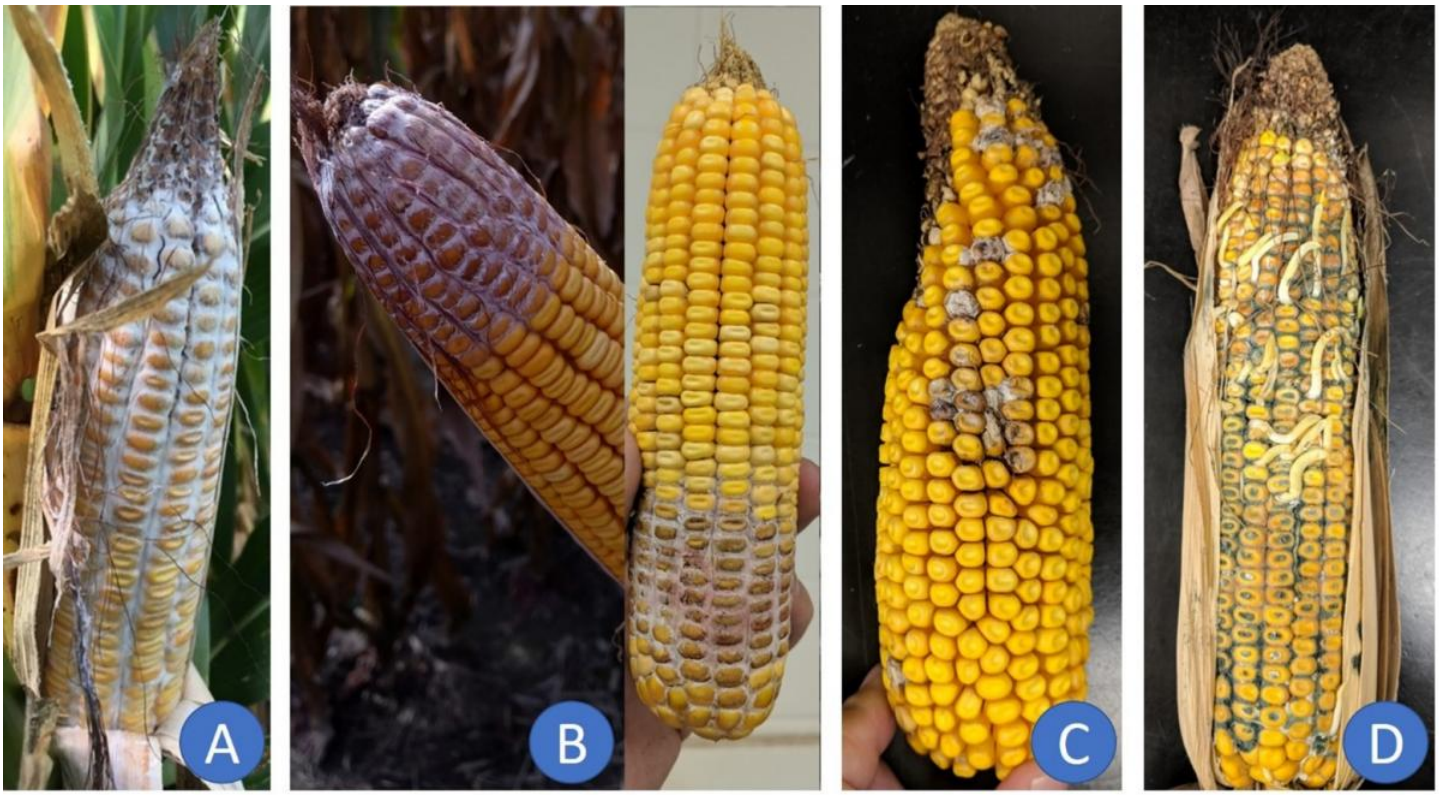
Spring 2021 Outlook
It looks like a potential cool and damp spring next year if the La Nina lingers than long.
For more information: https://www.cpc.ncep.noaa.gov/

Gibberella Ear Rots

By: Pierce Paul & Felipe Dalla Lana da Silva
Source: https://agcrops.osu.edu/newsletter/corn-newsletter/2020-34/gibberella-ear-rots-showing-corn-how-tell-it-apart-other-ear-rots

Over the last two weeks, we have received samples or pictures of at least two different types of corn ear rots – Gibberella and Trichoderma. Of the two, Gibberella ear rot (GER) seems to be the most prevalent. Ear rots differ from each other in terms of the damage they cause (their symptoms), the toxins they produce, and the specific conditions under which they develop. GER leads to grain contamination with mycotoxins, including deoxynivalenol (also known as vomitoxin), and is favored by warm, wet, or humid conditions between silk emergence (R1) and early grain development. However, it should be noted that even when conditions are not ideal for GER development, vomitoxin may still accumulate in infected ears.

A good first step for determining whether you have an ear rot problem is to walk fields between dough and black-layer, before plants start drying down, and observe the ears. The husks of affected ears usually appear partially or completely dead (dry and bleached), often with tinges of the color of the mycelium, spores, or spore-bearing structures of fungus causing the disease. Depending on the severity of the disease, the leaf attached to the base of the diseased ear (the ear leaf) may also die and droop, causing affected plants to stick out between healthy plants with normal, green ear leaves. Peel back the husk and examine suspect ears for typical ear rot symptoms. You can count the number of moldy ears out of ever 50 ears examined, at multiple locations across the field to determine the severity of the problem.



Diplodia (A), Gibberella (B), Fusarium (C) and Trichoderma ear rots of corn

Ear rot symptoms

GIBBERELLA EAR ROT - When natural early-season infections occur via the silk, Gibberella ear rot typically develops as white to pink mold covering the tip to the upper half of the ear. However, infections may also occur at the base of the ear, causing the whitish-pink diseased kernels to develop from the base of the ear upwards. This is particularly true if ears dry down in an upright position and it rains during the weeks leading up to harvest. The Gibberella ear rot fungus may also infect via wounds made by birds or insects, which leads to the mold developing wherever the damage occurs. When severe, Gibberella ear rot is a major concern because the fungus produces several mycotoxins, including vomitoxin, that are harmful to livestock. Once the ear is infected by the fungus, these mycotoxins may be present even if no visual symptoms of the disease are detected. Hogs are particularly sensitive to vomitoxin. Therefore, the FDA advisory level for vomitoxin in corn to be fed to hogs is 5 ppm and this is not to exceed 20% of the diet.

TRICHODERMA EAR ROT – Abundant, thick, greenish mold growing on and between the kernels make Trichoderma ear rot very easy to distinguish from Diplodia, Fusarium, and Gibberella ear rots. However, other greenish ear rots such as Cladosporium, Penicillium and Aspergillus may sometimes be mistaken for Trichoderma ear rot. Like several of the other ear rots, diseased ears are commonly associated with bird, insect, or other types of damage. Another very characteristic feature of Trichoderma ear rots is sprouting (premature germination of the grain on the ear in the field). Although some species of Trichoderma may produce mycotoxins, these toxins are usually not found in Trichoderma-affected ears under our growing conditions.

DIPLODIA EAR ROT: This is one of the most common ear diseases of corn in Ohio. The most characteristic symptom and the easiest way to tell Diplodia ear rot apart from other ear diseases such as Gibberella and Fusarium ear rots is the presence of white mycelium of the fungus growing over and between kernels, usually starting from the base of the ear. Under highly favorable weather conditions, entire ears may become colonized, turn grayish-brown in color and lightweight (mummified), with kernels, cobs, and ear leaves that are rotted and soft. Rotted kernels may germinate prematurely, particularly if the ears remain upright after physiological maturity. Corn is most susceptible to infection at and up to three weeks after R1. Wet conditions

and moderate temperatures during this period favor infection and disease development, and the disease tends to be most severe in no-till or reduce-till fields of corn planted after corn. The greatest impact of this disease is grain yield and quality reduction. Mycotoxins have not been associated with this disease in US, although animals often refuse to consume moldy grain.

FUSARIUM EAR ROT: Fusarium ear rot is especially common in fields with bird or insect damage to the ears. Affected ears usually have individual diseased kernels scattered over the ear or in small clusters (associated with insect damage) among healthy-looking kernels. The fungus appears as a whitish mold and infected kernels sometimes develop a brownish discoloration with light-colored streaks (called starburst). Several different Fusarium species are associated with Fusarium ear rot, some of which produce toxins called Fumonisins. Horses are particularly sensitive to Fumonisins, but cattle and sheep are relatively insensitive.

STORAGE: Where possible, harvest affected fields early separately from other fields. Storage is key as poor storage may cause toxin levels to increase. Warm, moist pockets in the grain promote mold development, causing the grain quality to deteriorate and toxin levels to increase. Aeration is important to keep the grain dry and cool. However, it should be noted that while cool temperatures, air circulation, and low moisture levels will minimize fungal growth and toxin production, these will not decrease the level of toxin that was already present in grain going into storage.

- Dry and store harvested grain to below 15% moisture to minimize further mold development and toxin contamination in storage.
- Store dried grain at cool temperatures (36 to 44°F) in clean, dry bins. Moderate to high temperatures are favorable for fungal growth and toxin production.
- Periodically check grain for mold, insects, and temperature.
- If mold is found, send a grain sample for mold identification and analysis to determine if toxins are present and at what level.
- Clean bins and storage units between grain lots to reduce cross-contamination.

The information summarized in this section was taken from factsheet # PLPATH-CER-04 (http://ohioline.osu.edu/factsheet/plpath-cer-04).

Ohio Farm Custom Rates 2020

By: Barry Ward, F. John Barker, & Eric Richer, OSU Extension
Source: https://u.osu.edu/ohioagmanager/2020/10/02/ohio-farm-custom-rates-2020-released/

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

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

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

- Type or size of equipment used (e.g. 20-shank chisel plow versus a 9-shank)
- Size and shape of fields,
- Condition of the crop (for harvesting operations)
- Skill level of labor
- Amount of labor needed in relation to the equipment capabilities

- Cost margin differences for full-time custom operators compared to farmers supplementing current income

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

The complete "Ohio Farm Custom Rates 2020" is attached to this newsletter and available online at the Farm Office website: https://farmoffice.osu.edu/farm-management-tools/custom-rates-and-machinery-costs

Hay Sampling 101

By: Chris Teutsch, Associate Extension Professor, Forage Specialist, University of Kentucky
Source: https://u.osu.edu/beef/2020/10/07/knowing-what-you-are-feeding-hay-sampling-101/

Knowing the nutritional quality of forage and hay is an integral part of a profitable and efficient livestock operation. Accurate estimation of forage quality starts with obtaining a representative sample of the forage to be fed. Proper sampling technique is critical.

Hay is preserved in a number of different packages ranging from the small square bale weighing 40-50 lb to the large square bale weighing more than 1500 lb. In Kentucky, most hay is packaged in large round bales weighing between 500 and 1500 lb. Wrapped bale silage is also gaining popularity and should be sampled in a similar manner to large round hay bales with the exceptions listed below.

Figure 1. Always sample hay in lots. A lot is hay that comes from the same cutting and same field.

Obtaining a Representative Sample

Hay should ALWAYS be sampled in lots (Figure 1). A lot consists of hay made from the same field and cutting. A lot should not represent more than 200 tons of dry matter. In the event that a lot exceeds 200 tons of dry matter, multiple samples should be taken and forage quality results should be averaged to represent the overall lot.

Delay sampling until three to four weeks after baling for hay stored out of the weather. During this period bales undergo the heating or sweating process and forage quality can decline. For hay stored outside, it is best to delay sampling until three to four weeks prior to feeding to account for weathering that occurs after harvest. Remember to allow time for sample shipping and analysis and for making the feeding adjustments needed. A representative sample will consist of at least 20 cores from 20 bales (one core per bale) resulting in a sample size of approximately one-half pound of hay from each lot. Sample bales at random and not on some predetermined characteristic such as leafiness, color, or weed content.

Use a sampling strategy such as dividing the total number of bales by 20 (number of desired cores) can help to get a representative sample of the hay lot. For example, if a lot consists of 240 large round bales and 20 cores are desired, then every 12th bale should be sampled (240 total bales ÷ 20 samples = 12). If the lot contains less than 20 bales, sample every bale. For stacked hay or truckloads count the number of exposed bale ends (square bales) or sides (round bales), divide by 20, then sample every nth bale end or side. Using the above numbers if there are 240 bale ends on an exposed side, sample every 12th bale. Equally sample each exposed side of the stack.

Figure 2. Large and small square bales should be samples from the ends to a depth of 15 to 18 inches.

Core rectangular bales by centering the probe in the end and inserting the probe horizontally into the bale (Figure 2). Sample round bales by drilling or pushing the probe horizontally into center of the rounded side of the bale (Figure 3).

For round bales, remove weathered material from the area to be probed prior to sampling. Weathered material represents refusal and should not be included in the sample. The probe should penetrate the bale at least 15-18 inches for rectangular or round bales.

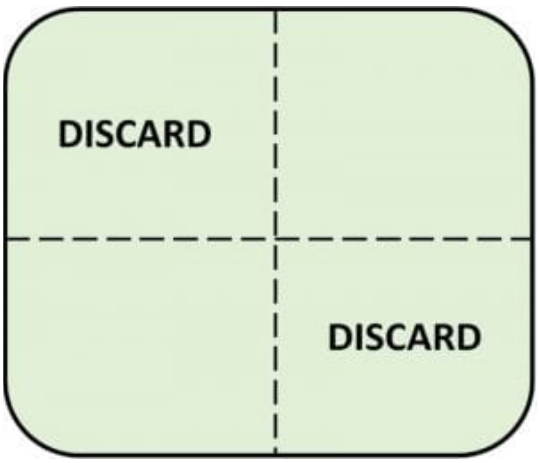
Figure 3. Round bales should be cored from the side to a depth of 15 to 18 inches.

After the lot has been sampled, the entire sample should be placed into a labeled plastic bag and sealed (Figure 4). Make sure that the bag is clearly labeled with your farm's name, a description of the hay lot sampled that will allow you to reference the results back to the hay lot, the type of hay, cutting, and year, and the date it was sampled. The sample should be sent immediately to the lab for analysis. In cases where the sample is not immediately submitted, store the sample in a cool, dry place that is not in direct sunlight. Make sure and complete the sample submission form for the lab that you are using. Do NOT subdivide the sample.

Figure 4. Always submit the entire sample. Subdividing the sample can result in altered lab results since the fine material segregates from the larger particles. Make sure the bag is clearly labeled with all required information.

Sampling Baled Silage

Sample baled silage in the same manner as hay. Delay sampling until at least four weeks after harvest to allow complete ensiling. Samples should be placed into labeled plastic bags as previously described. Submit the samples immediately or refrigerate until shipped. Remember to immediately repair holes caused by coring using a UV-resistant tape designed for silage film.



opposite quarters. Recombine the two remaining quarters. If the sample size is still too large, then repeat the procedure until the desired sample size is obtained.

Using a larger diameter or longer probe or collecting more than 20 cores result in a sample greater than ½ lb. This is not problem in itself and may even be more representative of the hay lot. However, most labs are not set up to handle and grind large sample sizes and will only grind a portion of the sample. The portion of the sample ground may not be representative of the lot. Therefore, AVOID SUBMITTING EXCESSIVELY LARGE SAMPLES FOR ANALYSIS. If a sample must be subdivided, it should be done using a technique called "quartering" (Figure 5). Thoroughly mix the sample and then pour it onto a clean and flat sheet of butcher paper or similar material. Then divide the sample into four equal parts. Discard two

Figure 5. If excessively large samples must be subdivided, always use the quartering technique. Quartering a sample is accomplished by thoroughly mixing the collected cores, pouring the sample onto a clean flat surface, discarding opposite quarters, and recombining the remaining quarters. This is repeated until the desired sample size is obtained.

Hay Sampling at a Glance

- Always collect hay samples by coring hay bales with a sampling probe designed for hay.
- Always sample hay in lots. A lot consists of a harvest-field combination.
- Delay sampling for dry hay stored inside for 3-4 weeks after harvest.
- Sample hay stored outside 3-4 weeks prior to feeding.
- Collect 20 cores per hay lot.
- Use a sampling strategy to obtain a representative sample of the hay lot. For example, if a hay lot has 200 bales, core ever 200 bales ÷ 20 cores or 10th bale.
- Core square bales from the end.
- Core round bales from the side.
- Do NOT subdivide samples.
- Place entire sample into labeled plastic bag and ship to lab.
- Delay sampling baleage for 4-6 weeks after baling to allow fermentation to finish.
- Refrigerate baleage samples prior to shipping.
- Repair holes in silage film with UV stabilized tape designed for silage wrap.
- Work with your extension agent or livestock nutrionsist to interpret test results and design an appropriate supplementation program.

A Decade of Poor Net Returns for Crop Producers

By: Chris Zoller, Extension Educator, ANR Tuscarawas County
Source: https://u.osu.edu/ohioagmanager/2020/10/02/2009-2019-a-period-of-poor-net-returns-for-crop-producers/

According to data compiled by the USDA Economic Research Service (ERS), the period from 2009 – 2019 provided variable net returns to U.S. producers of corn, soybeans, and wheat. The ability to cover total costs of production has been most significant since 2012, the last year all three commodities provided positive returns (see Figure 1).

Total costs include operating costs, such as fertilizer, seed, and chemicals, and overhead costs, including unpaid labor, depreciation, land costs, and other opportunity costs. While crop sales generally cover the

annual operating costs, net returns have often been negative. Net returns are calculated by subtracting total costs from total receipts. Because of this, overhead costs are often not covered from resulting crop sales.

According to an analysis by USDA ERS, net returns for corn increased early in the period because of an increase in the production of corn-based ethanol. Corn acreage and yields remained high after the expansion leading to oversupply and lower returns. Until 2018, net returns for soybeans exceeded those of corn. Because of international competition and high yields, wheat prices and returns declined over the decade.

Looking Ahead

Harvest of this year's corn and soybean crop has begun, and thoughts will soon turn to planning for 2021. Producers are encouraged to use crop budgets prepared by Ohio State University Extension, available at: https://farmoffice.osu.edu/farm-mgt-tools/farm-budgets. These Excel-based budgets provide a listing of variable and fixes costs for various yield scenarios, along with a column for producers to insert their predicted yields.

In addition to the OSU Extension budgets, you may be interested in completing a complete farm financial analysis at the beginning of 2021. See the OSU Extension Farm Business Analysis and Benchmarking Program (https://farmprofitability.osu.edu/) for additional information.

There are many uncertainties, including weather, market demand, costs, prices, and government payments. Large government payments have been made recently, but there is no guarantee as to whether additional payments will be made in 2021.

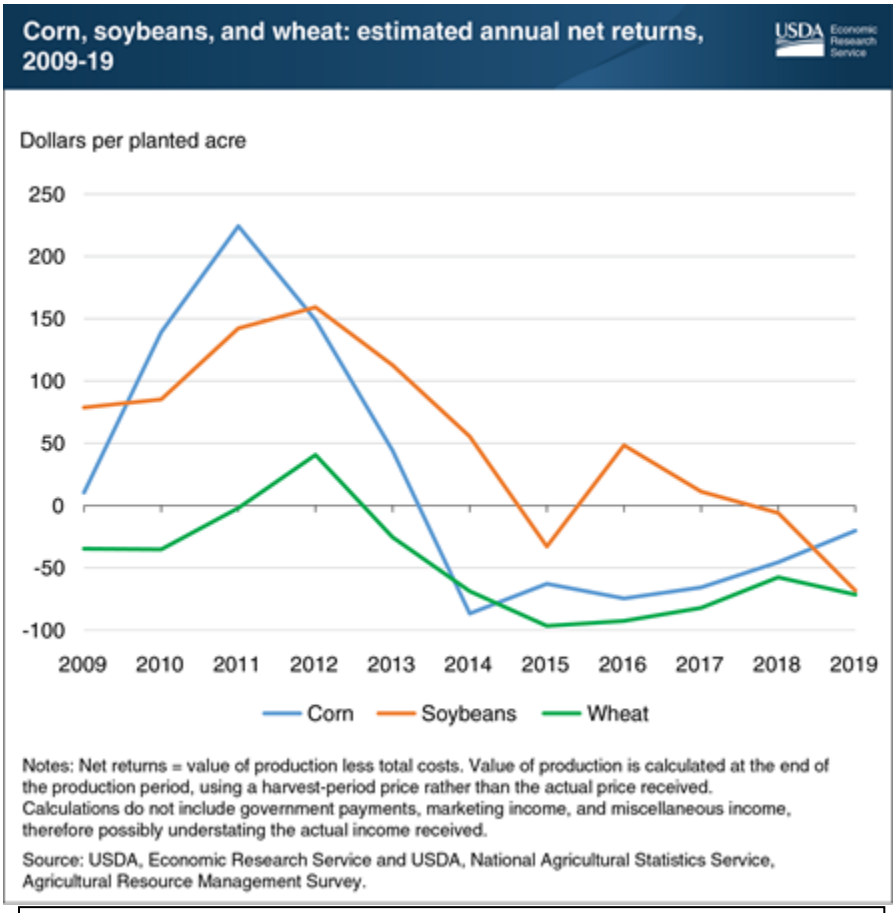


Figure 1. Estimated annual returns for corn, soybeans, and wheat, 2009-2019

Talk to your lender, accountant, and Extension Educator as you prepare for the 2021 growing season.

Coronavirus Food Assistance Program- Part 2

By: Jonathan Coppess, Joe Janzen, Gary Schnitkey, Nick Paulson, Krista Swanson
Department of Agricultural and Consumer Economics- University of Illinois & Carl Zulauf
Department of Agricultural, Environmental and Development Economics- Ohio State University
Source: https://farmdocdaily.illinois.edu/2020/09/coronavirus-food-assistance-program-part-2.html

At a campaign stop in Wisconsin on September 17, 2020, President Trump announced a second round of Coronavirus Food Assistance Program (CFAP2) payments (Holland and Huffstutter, September 17, 2020; USDA, farmers.gov/cfap). USDA estimates up to $14 billion in new payments under CFAP2. Sign up begins on Monday, September 21, 2020 and will conclude on December 11, 2020. This article reviews the program based on the USDA announcement and the corresponding Cost Benefit Analysis (USDA, CFAP2 CBA).

Payments Overview

CFAP2 will provide farmers with payments in addition to those made under CFAP1 intended to address losses linked to the coronavirus pandemic (*farmdoc daily*, May 22, 2020; June 9, 2020; September 3, 2020; September 16, 2020; September 17, 2020). As in CFAP1, USDA is applying a $250,000 per person payment limit on CFAP2 payments. CFAP1 payments will not count toward the $250,000 CFAP2 payment limit. Commodity title programs also do not count towards the $250,000 CFAP2 payment.
Farmers can begin making CFAP2 applications on September 21, with a deadline of December 11, 2020. It currently appears that funding available for CFAP2 will be sufficient to make payments; an early application seems prudent, however, and likely will result in quicker access to funds.

The Farm Service Agency (FSA) has provided very good information on CFAP2 on their farmer.gov website (click here for the CFAP2 section), and a Microsoft Excel spreadsheet is available for download to make application. Applications may also be completed and signed through an online portal. Further detail on CFAP2 payments for specific commodities is provided below.

Row Crops

CFAP2 will make payments based on 2020 plantings. CFAP2 divides eligible row crops into two categories: price trigger and flat rate commodities. Price trigger commodities have a specific per-unit payment rate based on the decline in expected harvest-time price between mid-January and late-July (see Table 1). For crops with an available futures market, this is the price of the November or December futures contract. Price trigger crops had to have a 5% price decline to qualify. For the seven price trigger crops, per acre payments will be calculated using an effective payment rate multiplied by the 2020 Actual Production History (APH) yield used for crop insurance. If an APH yield does not exist, the yield used in making payments will be 85% of the Agricultural Risk Coverage (ARC) yield for the county.

Table 1. CFAP2 Calculations for Major Row Crops

Commodity (units)	Price Decline (Jan to Jul, $/unit)	Payment Rate (80% of decline)	Marketing Percentage (expected % of 2020 production sold by year-end)	Effective Payment Rate ($/unit)	Estimated APH-approved Yield (units/ac)	Payment per Acre ($/ac)
Corn (bu)	0.73	0.58	40%	0.23	173	40.34
Soybeans (bu)	0.72	0.58	54%	0.31	48	14.93
Wheat (bu)	0.68	0.54	73%	0.40	48	19.22
Cotton (lbs)	0.10	0.08	46%	0.04	836	30.76

Note: APH-approved yields are approximated using the 5-year average of NASS national yields for each crop.

As listed in Table 1, effective payment rates are $0.23 per bushel for corn, $0.31 per bushel for soybeans, and $0.39 for wheat. Effective payment rates equal 80% of the price decline from mid-January 2020 to July 2020; that rate is further factored based on the historical marketing during the cropping year.

For price trigger crops, payment minimums of $15 per acre apply. Farms will receive the greater of $15 per acre or the per acre payment calculated using the formula in Table 1. Payment rates for some crops are closer to this minimum. For example, farms with soybean APH yields less than 48 bushels per acre appear to receive the minimum payment.

For other flat rate crops, payments will be made at a $15 per acre rate on alfalfa, amaranth grain, buckwheat, canola, Extra Long Staple (ELS) cotton, crambe (colewort), einkorn, emmer, flax, guar, hemp, indigo, industrial

rice, kenaf, khorasan, millet, mustard, oats, peanuts, quinoa, rapeseed, rice, sweet rice, wild rice, rye, safflower, sesame, speltz, sugar beets, sugarcane, teff, and triticale (see, https://www.farmers.gov/cfap/row-crops).

To illustrate the payment calculation, take a Champaign County, Illinois case farm that in 2020 planted 1,100 acres of corn and 900 acres of soybeans. The 2020 APH yields are 200 bushels per acre for corn and 50 bushels per acre for soybeans. The per acre corn payments equals:

- Corn: $45 per acre = 200 APH x $0.2320 effective rate, and
- Soybeans: $15.66 per acre = 50 APH x $0.3132 effective rate.

Both exceed $15 per acre, so the payment minimum does not apply. The completed "Acreage Based Crops" from the FSA CFAP2 spreadsheet is shown in Table 2. This farm would receive $51,400 for corn (1,100 acres x $45 payment per acre) and $15,094 (900 acres x $15.50 per acre). Given only grain operations, this farm would receive $65,134 of CFAP2 payments, well below the $250,000 CFAP2 payment limit.

Table 2. CFAP Excel Spreadsheet

Acreage Based Crops

Commodity	*Total 2020 Reported Acres*	*COC Adjusted Total 2020 Reported Acres*	*Weighed Insurance Approved Yield*	*COC Adjusted Weighted Insurance Approved Yield*	*85% of Weighted County Yield*	*Payment Rate*	*Marketing %*	*Estimated CFAP 2 CCC Gross Payment*
Corn	1,100.00	1,100.0000	200.00	200.00		$116.00	40.00%	$51,040.00
Soybeans	900.00	900.0000	50.00	50.00		$29.00	54.00%	$14,094.00
INCREASED PAYMENT LIMITATION FOR CORPORATIONS, LIMITED LIABILITY COMPANIES AND LIMITED PARTNERSHIPS, TRUSTS, AND ESTATES							Total:	$65,134.00

Beef and Hog Payments: Beef payments will be based on the maximum number of eligible beef cattle in the herd from April 16, 2020 to August 31, 2020, excluding breeding stock and will equal $55 per animal.
Hog payments will be based on maximum number of head between April 16, 2020 to August 31, 2020, but not including breeding stock. The payment rate will be $23 per head.

A lamb and sheep payment will equal $27 per head times the maximum inventory between April 16 to August 31, and breeding stock are not included.

Dairy Payments: Dairy payment will be based on:

1. Total actual milk production from April 1, 2020 to August 31, 2020.
2. Estimated milk production from September 1, 2020 to December 31, 2020.

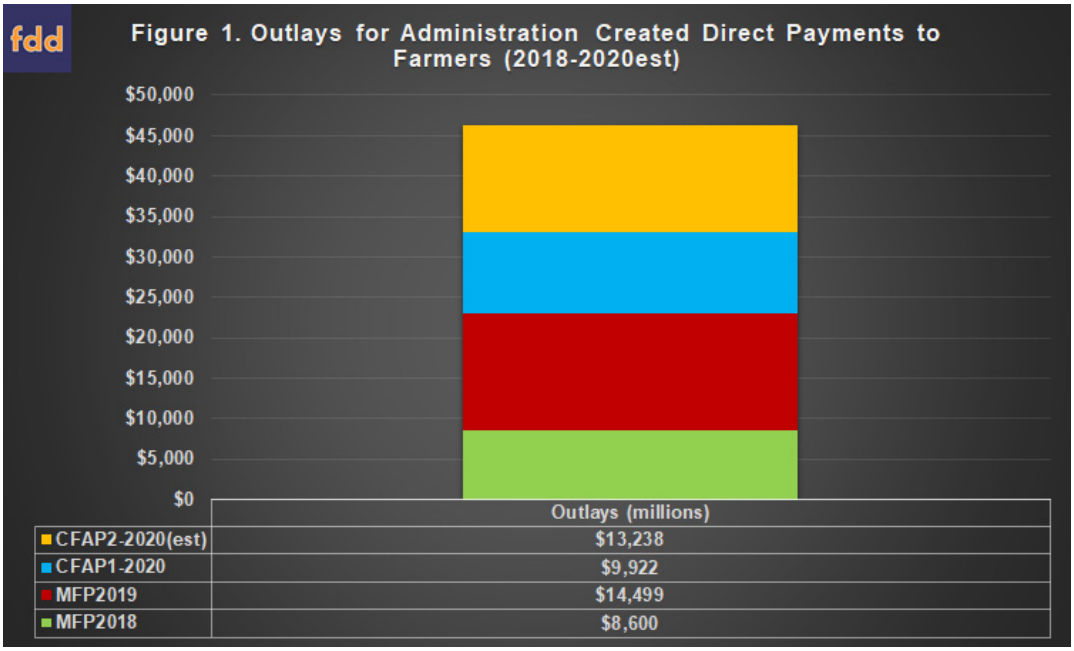
For the sum of the two parts, payments will equal $1.20 per hundredweight (cwt.).

Other Payments: The above payments cover most of the payments that will be made on Midwest farms. Additional CFAP2 payments will occur for specialty crops, floriculture, aquaculture, and broilers and eggs.

Additional Background on CFAP2

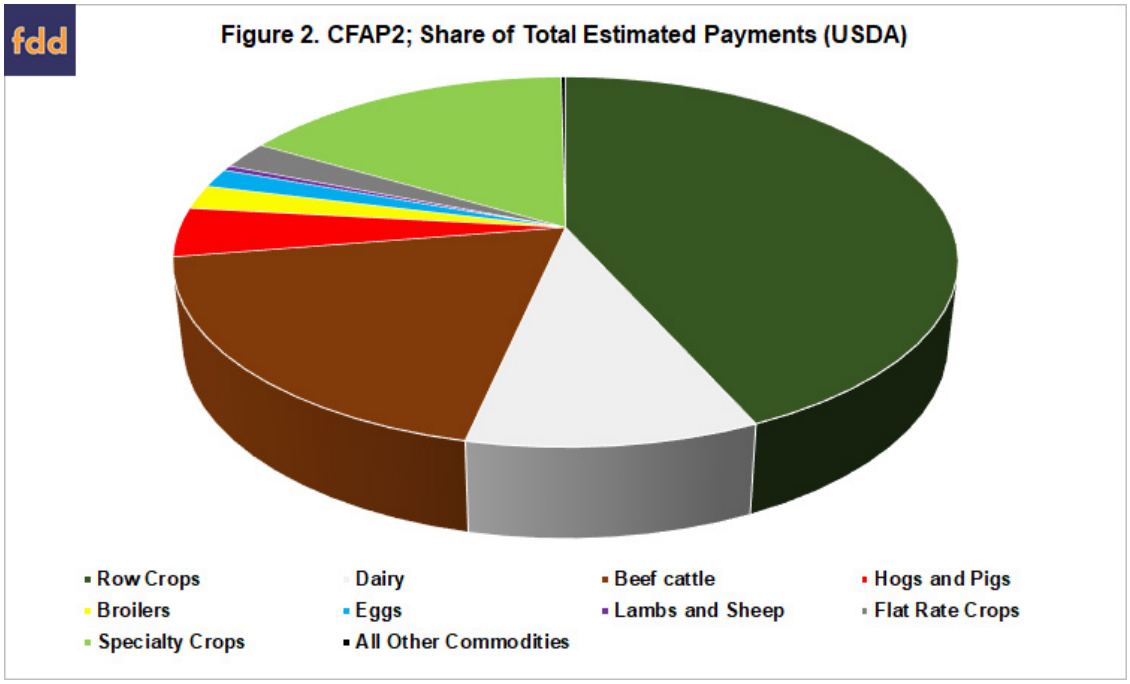
Since 2018, the Trump Administration has delegated significant funds to ad-hoc farm programs. Including the estimated payments under the just-announced CFAP2, total Administration created payments to farmers exceeds $45 billion. Figure 1 illustrates the total spending to date by program, including the Market Facilitation Program (MFP) for 2018 and 2019, as well as CFAP1 and estimated payouts for CFAP2. Note that this amount includes only ad-hoc program payments and does not include expected ARC/PLC farm bill program payments for the 2019 crop that will be made in October 2020.

The CFAP2 announcement closely follows the closing of the signup for CFAP1 on September 11, 2020. To date, USDA reports $9.9 billion in spending for CFAP1 which is 62% of the $15.974 billion estimated for the program, likely as a result of the requirement that inventory be unpriced to receive payments and the unpriced portion being less than initially estimated (*farmdoc daily*, September 3, 2020; September 17, 2020). CFAP2 appears to use remaining funds from CFAP1 as well as other funding from the Commodity Credit Corporation.



Nearly all agricultural commodities are eligible for CFAP payments, including row crops, livestock, dairy, poultry, eggs and specialty crops. Notable ineligible commodities are hay (except alfalfa) and forages. Cover crop and prevented plant acres are also ineligible.

USDA's cost benefit analysis estimates that roughly 43% of total estimated payments will go to row crop farmers, or approximately $5.7 billion. Figure 2 illustrates the distribution of estimated payments by commodity category.



Discussion

USDA also announced that it is once again using a $250,000 payment limit and a $900,000 adjusted gross income eligibility requirement (unless at least 75% of the income is derived from farming, ranching, or forestry-related activities). A legal entity, such as a corporation, limited liability corporation or limited partnership may increase the payment limit to $500,000 if two different members provide sufficient labor or management, and to $750,000 if three different members provide sufficient labor or management. USDA noted that the same payment limits applied to CFAP1 impacted about 1% of total applicants.

For total estimated payments by crop, USDA used the August 2020 USDA World Agricultural Supply and Demand Estimates for production. That report forecasts total 2020 corn production at 15.3 billion bushels and soybeans at 2.4 billion bushels. Figure 3 illustrates total estimated payments by crop according to USDA.

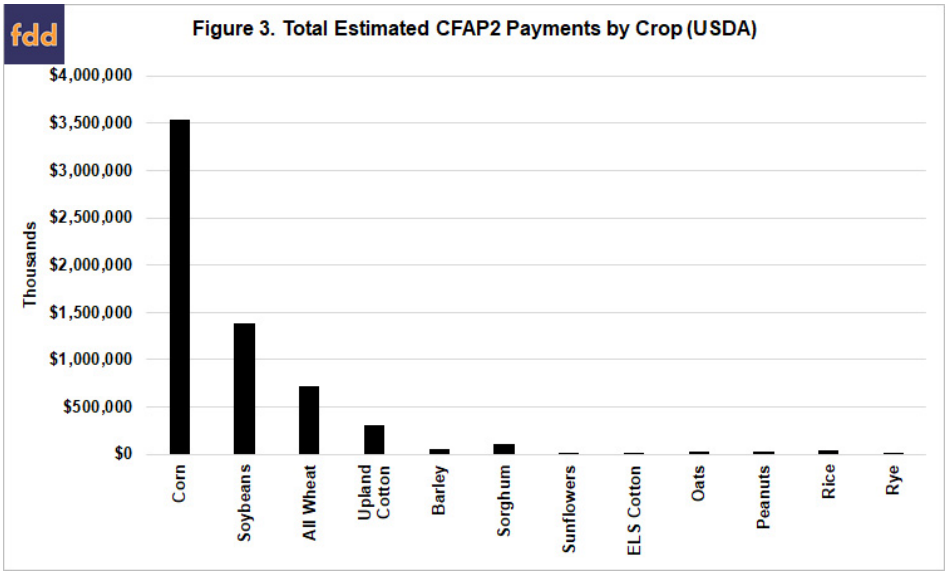


Figure 4 estimates the expected distribution of CFAP2 payments to row crops across states. APH-approved yields are approximated using the 5-year average of NASS state-level yields. Crop acreage is the NASS state-level estimate of 2020 harvested acres. Payment limits are not accounted for in these estimates. Iowa receives the most CFAP2 dollars of any state with an estimated $769 million in payments. Illinois is second with an estimated $678 million. Payments are concentrated in the Midwest and are strongly correlated with the location of corn and soybean acres, the crops with the largest acreage. State-level payments are particularly tied to corn acres because per-acre payment rates for corn are higher than other row crops.

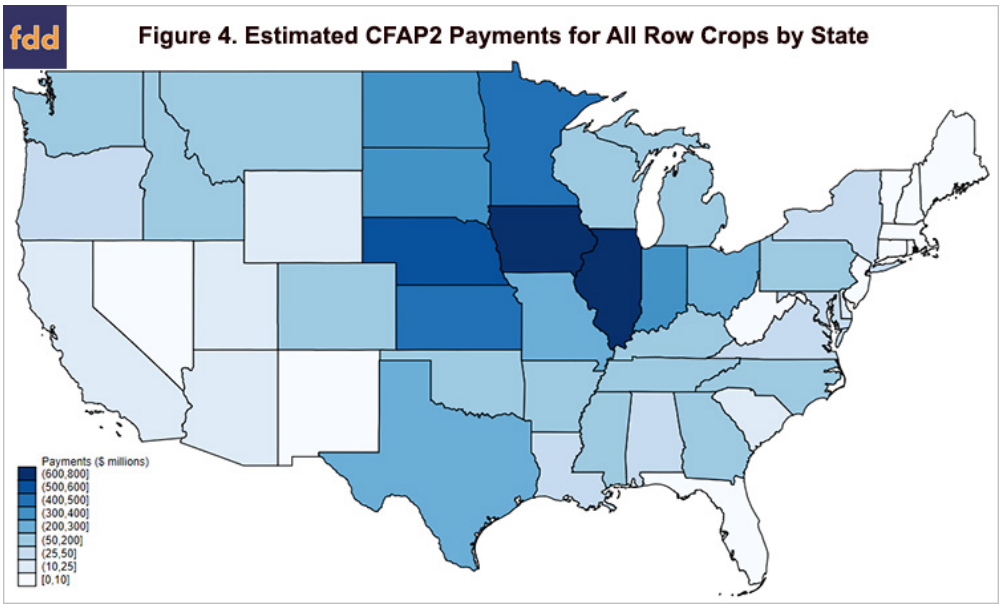
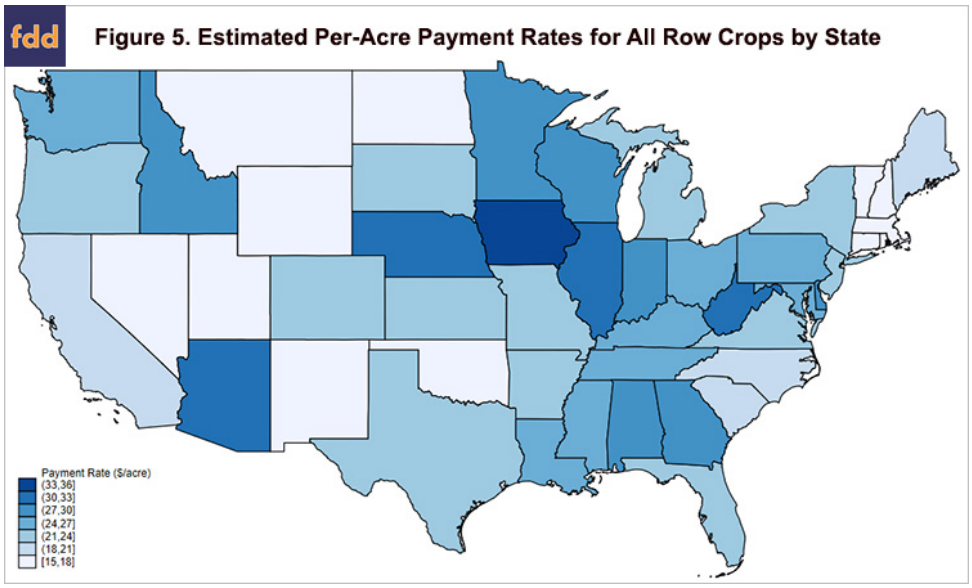


Figure 5 plots the distribution of CFAP2 payments on a per-acre basis. This accounts for the fact that states have differing amounts of cropland. Differences in per-acre payment rates are driven only by crop mix and crop yields, not the total number of acres. This figure shows that per-acre payment rates are remarkably similar across states, with most Corn Belt states receiving payment rates between $25-35/acre. Payment rates in the South are generally similar to those in the Midwest. Payment rates are generally lower in the Great Plains. Differences in per-acre payment rates across states are much lower than previous ad hoc farm payments, especially the second Market Facilitation Program.



Conclusion

Signup for the second Coronavirus Food Assistance Program payments begins today, Monday, September 21, 2020. The program covers a wide range of crops, from traditionally supported row crops to specialty crops, dairy and livestock. Signup is scheduled to end on December 11, 2020, but farmers are advised to undertake signup as early as possible. This is the fourth in a series of ad-hoc farm programs since 2018. Program payments for major row crops are based on price declines in 2020 in the wake of the coronavirus pandemic applied to expected marketing

of the 2020 crop prior to the end of the year. Since program calculations rely on farm-level acreage and yield information already known by the USDA Farm Service Agency, USDA is expected to quickly issue payments after applications are finalized and submitted.

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Nutrition for Lambing

Shelby Filley, Oregon State University, Regional Livestock and Forage

(Previously published on the Oregon State University Extension page: April, 2018)
Source: https://u.osu.edu/sheep/2020/10/06/nutrition-for-lambing/

Do you have your ewes nutritionally prepared for lambing and lactation? If not, that's okay! There is still plenty of time to get this important task accomplished. Learn to put a nutrition plan in place early in the season so you can decrease problems with your ewes later.

Two phases of the ewe's biological cycle need special dietary consideration when it comes to lambing:

1. The first phase is the last four to six weeks of pregnancy, when 70% of fetal lamb growth occurs. In this late gestation period, ewes require significantly more dietary energy and protein than earlier in

pregnancy. A good plane of nutrition here will help ensure that strong, healthy lambs are more easily delivered and have a good start in life. Ewes in poor nutritional condition are more susceptible to pregnancy toxemia, and may have weaker, lighter birth weight lambs to the point that lamb survival rate drops.

2. The second phase of the ewe's biological cycle for nutritional consideration is during lactation, especially during the first six to eight weeks after lambing when milk production is high. This is the time when the ewe has the greatest nutrient requirements for energy and protein.

Additionally, the size and productivity of your ewes also influence the requirements. Larger ewes pregnant with twins require more nutrients than smaller ewes carrying a single lamb. Ewes suckling twins need more nutrients because they produce 20% to 30% more milk than ewes suckling singles.

How much should you feed your sheep, and when? Let's look at feed resources.

Although pastures may be nice and green, with high nutritional quality, the amount present will most likely be in short supply. Hence, the feed available from pasture may be too low to meet the demands of the ewe.
Many times, grass hay alone does not contain sufficient concentration of nutrients for the ewe. Low-quality grass hay does not meet the energy and protein requirements of ewes during various segments of the production cycle.

Since the forage examples used here don't match the ewe's requirements, supplementation would be necessary for optimal production. For example, a 154-pound ewe will eat about 4.5 pounds of feed per day of a late gestation diet. For a 130%–180% lamb crop, she would need a diet with 65% total digestible nutrients and 11.3% crude protein.

Expect delivery of lambs to begin approximately 142 days from when the ram bred the ewe. Count back 28 to 42 days (four to six weeks) to give you the date you need to start slowly introducing this diet. Rapid diet changes have the potential to cause digestive upset.

After lambing, move the ewe up to full feed (6-7 pounds) of a diet containing 65% total digestible nutrients and 15% crude protein (when suckling twins). An example diet that would meet this requirement could be 4 pounds of moderate quality alfalfa hay and 2 pounds of whole corn. Alternatively, you could feed 4 pounds of good quality grass hay and 3 pounds of grain.

Young lamb mothers need additional requirements for their own growth and may benefit from being fed as a separate group if circumstances allow. As the quantity of grass increases in your pasture, you can decrease the amount of supplemental feed offered to your sheep, eventually relying solely on grass.

Remember to allow the pasture to get a good start on its growth by not overstocking it, or beginning to use it too early. Don't forget to offer a trace mineral salt mix made especially for sheep. You should also consider other pre-lambing practices such as vaccinating for enterotoxemia, trimming feet, and shearing or crutching/tagging ewes. Also, prepare the lambing barn, and check supplies and equipment.
Good luck with your new arrivals!

Take the OSU Extension Health Survey

OSU Extension is inviting farmers to participate in the **OSU Extension Health Survey** The survey will take about 15 minutes to complete on-line and will inquire about your health behaviors for sun safety and 7 other areas: sleep, stress, nutrition, physical activity & a few more. This information will develop future Extension programs and resources for healthy living. There is a $10 gift card incentive for all completed surveys - for 100 Ohio farmers. No personal identifiers will be asked and your responses will be aggregated with other farmer responses in Ohio. The survey can be accessed at: www.go.osu.edu/HealthSurvey2020

Questions about this survey can be directed to Pat Brinkman, Extension Educator Family & Consumer Sciences, brinkman.93@osu.edu or Dee Jepsen, Ag Safety and Health, jepsen.4@osu.edu

Mapping Your Woodland

OSU Extension's next virtual **A DAY in the WOODS** program **"Mapping Your Woodland"** will be offered as a Zoom webinar on October 9 from 10 am to 11:30 am. The program will feature three live presentations. Using Ohio county auditor web resources, Collecting location information from your woodland using AVENZA maps, and Overview of online mapping tools including My Land Plan, Google Earth Pro and other free or low cost mapping tools . Two additional videos will be available online after the October 9 event: How to use My Land Plan to map and manage your woodland Resources and Creating interactive maps using Google Earth Pro. For program details and to register visit: https://u.osu.edu/apsley.1/2020/09/28/mapping-your-woodland-virtual-a-day-in-the-woods-offered-on-october-9/

Take a Break Email Wellness Challenge

Do you need a break? Us too! Join Ohio State University Extension Educators as they offer their award-winning, six-week email challenge. "Take a Break" will challenge you to break for rest, healthy foods, wellness, play, just to name a few. Two weekly email messages will be sent to you from your local OSU Extension Professional. This program is offered free and will begin on October 19. Visit go.osu.edu/coshoctonfall20 to register. For additional information contact Emily Marrison at marrison.12@osu.edu or 740-622-2265.

Check out
http://go.osu.edu/coshocton-agnews
for back issues of the Coshocton County Agriculture & Natural Resources Newsletter

Ohio Farm Custom Rates 2020

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Farming is a complex business and many Ohio farmers utilize outside assistance for specific farm-related work. This option is appealing for tasks requiring specialized equipment or technical expertise. Often, having someone else with specialized tools perform a 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 377 farmers, custom operators, farm managers, and landowners conducted in 2020. These rates, except where noted, include the implement and tractor if required, all variable machinery costs such as fuel, oil, lube, twine, etc., and the labor for the operation.

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

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

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

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

Charges may be added if the custom provider considers a job abnormal such as distance from the operator's base location, difficulty of terrain, amount of product or labor involved with the operation, or other special requirements of the custom work customer.
As a custom provider, the average rates reported in this publication may not cover your total costs for performing the custom service. As a customer, you may not be able to hire a custom service for the average rate published in this factsheet. Calculate your own costs carefully before determining the rate to charge or pay. It may be helpful to compare the custom rates reported in this fact sheet with machinery costs calculated by economic engineering models available by searching University of Minnesota farm machinery cost estimates. The data from this survey are intended to show a representative farming industry cost for specified machines and operations in Ohio. The following resources are available to help you calculate and consider the total costs of performing a given machinery operation. You may also consider using the data contained in multiple publications as a base for future custom rates. Suggested publications are:

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

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

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

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

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

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Ohio Farm Custom Rates 2020

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

Max = Maximum, Min = Minimum, St. Dev. = Standard deviation
Range = Average +/- 1 Standard Deviation,
[1] Standard deviation is a measure of the variability of the survey responses. One “standard deviation” both above and below the average (mean) includes approximately two-thirds of all survey responses.

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Ohio Farm Custom Rates 2020

Planting Operations							
Conventional Till	Average	Median	Max	Min	St. Dev.	Range	
Plant Corn 30" Rows / Acre	$20.00	$20.00	$50.00	$10.00	$5.82	$25.82	$14.19
Plant Corn w/ Starter Fertilizer 30" Rows / Acre	$21.10	$20.00	$50.00	$10.00	$5.91	$27.06	$15.23
Variable rate corn planting / Acre	$22.00	$20.00	$38.00	$14.00	$5.93	$27.93	$16.07
Plant Soybeans 15" or 30" Rows / Acre	$20.10	$20.00	$50.00	$6.00	$6.19	$26.28	$13.90
Variable rate soybean planting / Acre	$20.20	$20.00	$35.00	$14.00	$4.87	$25.02	$15.28
Drill Soybeans / Acre	$18.00	$17.25	$40.00	$8.00	$5.28	$23.30	$12.74
Drill Small Grains / Acre	$17.30	$17.25	$27.00	$8.00	$3.99	$21.31	$13.33
No-Till							
Plant Corn 30" Rows / Acre	$20.10	$20.00	$50.00	$10.00	$6.19	$26.25	$13.88
Plant Corn w/ Starter Fertilizer 30" Rows / Acre	$21.20	$20.00	$50.00	$10.00	$6.68	$27.88	$14.52
Variable rate corn planting / Acre	$22.30	$20.00	$38.00	$14.00	$6.29	$28.60	$16.02
Plant Soybeans 15" or 30" Rows / Acre	$20.10	$20.00	$50.00	$6.00	$6.46	$26.53	$13.61
Variable rate soybean planting / Acre	$20.50	$20.00	$28.00	$14.00	$4.13	$24.63	$16.37
Drill Soybeans / Acre	$18.00	$16.85	$30.00	$8.00	$5.35	$23.38	$12.68
Drill Small Grains / Acre	$17.60	$17.00	$30.00	$8.00	$4.72	$22.29	$12.86
Grass/Legume/Pasture Seeding							
Broadcast / Acre	$9.20	$8.00	$15.00	$5.00	$3.14	$12.31	$6.02
Grain drill / Acre	$16.70	$17.50	$25.00	$8.00	$4.63	$21.32	$12.07
Grain Harvest	Average	Median	Max	Min	St. Dev.	Range	
Harvest Corn / (combine, grain cart, haul local to farm) / Acre	$33.90	$34.50	$55.00	$22.00	$5.94	$39.83	$27.94
Harvest Soybeans / (combine, grain cart, haul local to farm) / Acre	$31.50	$30.00	$50.00	$16.00	$6.02	$37.46	$25.43
Harvest Wheat / (combine, grain cart, haul local to farm) / Acre	$31.50	$30.00	$50.00	$22.00	$5.39	$36.84	$26.06
Added Charge GPS Mapping	$1.40	$1.00	$5.00	$0.00	$1.46	$2.83	-$0.08
Combine Corn / Corn	$29.00	$30.00	$40.00	$15.00	$4.73	$33.75	$24.29
Combine Soybeans / Acre	$27.80	$28.00	$40.00	$15.00	$4.83	$32.58	$22.93
Combine Small Grains / Acre	$28.40	$28.25	$40.00	$15.00	$4.92	$33.27	$23.43
Pick Ear Corn / Acre	$30.00	$30.00	$40.00	$20.00	$7.91	$37.91	$22.09
Grain Cart / Acre	$5.30	$5.00	$10.00	$2.00	$2.00	$7.29	$3.28
Grain Storage - On Farm	Average	Median	Max	Min	St. Dev.	Range	
Storage / Month / Bushel	$0.047	$0.050	$0.12	$0.02	$0.02	$0.065	$0.03
Storage / Year / Bushel	$0.19	$0.16	$0.60	$0.06	$0.12	$0.32	$0.07
Grain Drying							
Per Point of Moisture Removed / Bushel	$0.039	$0.040	$0.07	$0.02	$0.01	$0.052	$0.026
Grain Hauling							
Farm to Market / Bushel	$0.155	$0.150	$0.280	$0.050	$0.061	$0.216	$0.094
Average Miles - Farm to Market	25.2	22.0	63.0	3.0	16.5	41.7	8.7
Field to Farm / Bushel	$0.102	$0.100	$0.150	$0.050	$0.036	$0.138	$0.066
Average Miles - Field to Farm	13.3	10.0	50.0	5.0	9.6	22.9	3.7

Max = Maximum, Min = Minimum, St. Dev. = Standard deviation
Range = Average +/- 1 Standard Deviation,
[1] Standard deviation is a measure of the variability of the survey responses. One “standard deviation” both above and below the average (mean) includes approximately two-thirds of all survey responses.

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Ohio Farm Custom Rates 2020

Custom Farming (All machinery operations for tillage, planting, spraying, tending & harvesting	Average	Median	Max	Min	St. Dev.	Range	
Corn / Acre	$118	$127.50	$190.00	$60.00	$34.14	$151.86	$83.58
Soybeans /Acre	$103	$87.50	$190.00	$60.00	$36.13	$139.10	$66.83
Small Grains / Acre	$108	$115.00	$170.00	$60.00	$32.64	$140.27	$75.00
Silage Harvest							
Chop Corn Silage / Ton	$6.50	$7.00	$7.50	$4.50	$1.17	$7.67	$5.33
Chop, Haul, Fill Corn Silage / Ton	$10.10	$10.00	$13.00	$8.00	$1.89	$12.00	$8.22
Hay / Straw Harvest	Average	Median	Max	Min	St. Dev.	Range	
Mowing / Acre	$11.40	$11.00	$15.00	$7.50	$2.56	$13.94	$8.82
Mowing/Conditioning / Acre	$13.10	$14.40	$20.00	$6.00	$3.28	$16.35	$9.79
Raking / Acre	$7.10	$7.00	$15.00	$4.00	$2.47	$9.59	$4.65
Tedding / Acre	$6.20	$5.75	$10.00	$4.00	$1.68	$7.87	$4.51
Baling: Small Square Bales							
Baled / Dropped in Field /Bale	$0.90	$0.78	$2.00	$0.40	$0.42	$1.31	$0.47
Baled and Loaded on Wagon / Bale	$1.00	$1.00	$2.00	$0.35	$0.40	$1.42	$0.62
Haul & Store / Bale	$0.50	$0.50	$0.50	$0.25	$0.09	$0.55	$0.37
Baled, Loaded, Hauled and Stored / Bale	$1.40	$1.50	$2.00	$0.75	$0.39	$1.77	$0.99
Baling: Large Round Bales ~ 600-1000#							
Baled and Dropped in Field / Bale	$9.60	$10.00	$12.50	$7.00	$1.34	$10.89	$8.21
Baled, Net Wrapped and Left in Field / Bale	$10.10	$9.00	$15.00	$7.00	$2.47	$12.56	$7.62
Baled and Wrapped Dry in Plastic (Plastic Included) / Bale	$16.20	$15.00	$20.00	$13.00	$2.79	$18.99	$13.41
Baled and Wrapped Wet in Plastic (Plastic Included) / Bale	$16.20	$17.00	$20.00	$12.00	$2.86	$19.06	$13.34
Baling: Large Square Bales							
Baled and Dropped in Field / Bale	$10.20	$9.75	$20.00	$7.50	$3.62	$13.82	$6.57
Complete Hay Harvest							
Cost per Ton	$17.70	$15.00	$28.00	$14.00	$4.89	$22.55	$12.78
Complete Hay Harvest - Shares							
% of Crop to Custom Provider	53	50.0	66.0	33.0	8.0	60.6	44.5

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THE OHIO STATE UNIVERSITY

Ohio Farm Custom Rates 2020

Manure Application	Average	Median	Max	Min	St. Dev.	Range	
Spread Manure / Acre	$13.00	$9.50	$30.00	$6.00	$8.08	$21.08	$4.92
Hauling Liquid Manure / Without Frak Tank / Hour	$100.00	$100.00	$125.00	$60.00	$19.46	$119.46	$80.54
Pump & Spread / Tank / Gallon	$0.00833	$0.00800	$0.01000	$0.00700	$0.00125	$0.00958	$0.00709
Pump & Spread / Dragline / Gallon	$0.00839	$0.00800	$0.01100	$0.00650	$0.00123	$0.00962	$0.00717
Pump, Spread & Incorporate / Dragline / Gallon	$0.00958	$0.00875	$0.01400	$0.00800	$0.00213	$0.01171	$0.00745
Pump & Inject/Sidedress / Dragline / Gallon	$0.00925	$0.00900	$0.01100	$0.00800	$0.00090	$0.01015	$0.00835
Extra Hose Charge - Over 1 mile From Lagoon/Pit / Gallon	$0.00131	$0.00100	$0.00250	$0.00050	$0.00061	$0.00192	$0.00070
Additional Charge For Sand Bedding / Gallon	$0.00084	$0.00100	$0.00150	$0.00000	$0.00044	$0.00127	$0.00040
Agitator - Charge / Gallon	$0.00083	$0.00085	$0.00150	$0.00035	$0.00040	$0.00122	$0.00043
Agitation Boat / Hour	$250.00	$250.00	$300.00	$200.00	$40.82	$290.82	$209.18
Drainage and Tile Installation							
Drain Plow - without materials							
4" Plastic / Foot	$0.33	$0.28	$0.75	$0.16	$0.18	$0.51	$0.16
Drain Plow - with materials							
4" Plastic / Foot	$0.64	$0.60	$1.25	$0.48	$0.18	$0.82	$0.46
Typical Depth Tile Installation / Inches	34.4	36.0	42.0	24.0	5.0	39.4	29.5
Typical Lateral Spacing Tile Installation / Feet	31.7	30.0	40.0	20.0	6.9	38.5	24.8

Miscellaneous	Average	Median	Max	Min	St. Dev.	Range	
Bush Hogging / Acre	$14.50	$15.00	$20.00	$9.00	$3.77	$18.27	$10.73
Bush Hogging / Hour	$52.00	$45.00	$115.00	$20.00	$25.24	$77.24	$26.76
Income Tax Preparation / Hour	$157.50	$125.00	$350.00	$70.00	$97.20	$254.70	$60.30
Income Tax Preparation / Return	$502.70	$420.00	$2,500.00	$70.00	$461.03	$963.72	$41.66
Track Hoe / Hour	$117.20	$122.50	$200.00	$65.00	$34.45	$151.67	$82.77
Bulldozing per Foot of Blade / Hour	$12.30	$10.69	$23.53	$5.00	$5.86	$18.15	$6.44
Clearing Land / Hour	$144.00	$130.00	$300.00	$65.00	$71.37	$215.37	$72.63
Snow Removal : Loader / Hour	$72.10	$65.00	$120.00	$40.00	$29.38	$101.52	$42.76
Snow Removal : Blade / Hour	$51.80	$32.50	$120.00	$22.00	$39.68	$91.43	$12.07
Grinding Feed / Cwt.	$1.00	$0.95	$1.25	$0.85	$0.15	$1.15	$0.85
Hauling Livestock / Mile	$2.30	$2.38	$3.00	$1.50	$0.60	$2.88	$1.67
Scouting Crops / Acre	$4.80	$5.00	$9.00	$1.00	$2.35	$7.13	$2.43
Soil Testing / Sample	$9.40	$10.00	$13.50	$3.00	$3.08	$12.51	$6.36
Soil Testing / Acre	$4.80	$6.00	$7.50	$1.50	$2.10	$6.87	$2.68
Grid Soil Testing / Acre	$8.00	$8.25	$15.00	$2.50	$3.31	$11.32	$4.70
Average Grid Size	6.4	4.0	20.0	2.5	5.2	11.6	1.3
Power Washing / Hour	$41.60	$42.50	$70.00	$25.00	$13.28	$54.85	$28.28

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THE OHIO STATE UNIVERSITY

Ohio Farm Custom Rates 2020

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

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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.

   custom charge × percent of custom charge = machinery rental rate

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

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

   custom charge × percent of custom charge = machinery rental rate

   $14.50/acre × 70% = $10.15/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.

   (HP × per HP-hour rental rate) ÷ acres/hour = 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.

   (HP × per HP-hour rental rate) ÷ acres/hour = tractor rental rate
   (310 HP × $0.31) ÷ 33 acres/hour = $2.91/acre

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

   machinery rental rate – tractor rental rate = implement rental value

   $10.15/acre – $2.91/acre = $7.24/acre