

COSHOCTON COUNTY AGRICULTURE & NATURAL RESOURCES

Hello Coshocton County! Wheat harvest had been off to a good start but the weather over the past week has put a halt to this progress (but the rain has been great for the corn!). A lot of conversations have been held about wheat and today's newsletter has three wheat articles answering some of the questions which producers are asking.

We had another good Beef Quality Assurance (BQA) re-certification session on Monday night. During the class, we had a great question on pricing cattle on a grid so I found an article from our friends in Texas to share with you.

A reminder that I have scheduled 6 more BQA sessions to be held locally. Producers can also attend a session in Sugarcreek or Zanesville if that is more convenient. Check out the first article in today's newsletter for more details.

Stay safe and well.

Sincerely,

David L. Marrison

Coshocton County OSU Extension ANR Educator

July 14 Issue (Edition #103)

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BQA Re-certification Sessions Planned

The Coshocton County Extension office will be offering a series of **Beef Quality Assurance (BQA)** re-certification meetings throughout the remainder of this year as a total of 179 producers will need to obtain re-certification before the end of 2021.

To help producers obtain their certification, we have scheduled a series of re-certification sessions for the remainder of the year. These sessions will be held in Room 145 at the Coshocton County Services Building located at 724 South 7th Street in Coshocton County. Producers can choose the session which best fits their schedule. Sessions will be held on:

- Monday, August 9 (7:00 to 8:30 p.m.)
- Monday, September 13 (7:00 to 8:30 p.m.)
- Monday, October 11 (7:00 to 8:30 p.m.)
- Wednesday, November 3 (7:00 to 8:30 p.m.)
- Wednesday, December 1 (7:00 to 8:30 p.m.)
- Tuesday, December 14 (7:00 to 8:30 p.m.)



Pre-registration is required for each session as space is limited. There is no fee to attend. Call 740-622-2265 to pre-register. These sessions also qualify for anyone who is seeking a first time certification. A program flyer is also attached to this newsletter.

Other Ways to Re-certify:

- Online certification and recertification is also available and can be completed anytime at <https://www.bqa.org/beef-quality-assurance-certification/online-certifications>.
- Producers can also attend sessions hosted by the Tuscarawas County Extension office at the Sugarcreek Stockyards on July 21 (1 p.m.), July 29 (7 p.m.), August 10 (1 p.m.) or August 25 (7 p.m.). Pre-registration is requested by calling 330-339-2337 or by emailing Chris Zoller at Zoller.1@osu.edu
- Producers can attend a session at the Muskingum Livestock Auction in Zanesville on July 27 (7 p.m.) hosted by the Muskingum County Extension office. More information can be obtained by contacting Clifton Martin at martin.2422@osu.edu or by calling 740-454-0144.

Agriculture Loses More Cases Than it Wins in Recent Federal Decisions

By: Peggy Kirk Hall, Associate Professor, Agricultural & Resource Law Friday, July 09th, 2021

Source: <https://farmoffice.osu.edu/blog/fri-07092021-745am/agriculture-loses-more-cases-it-wins-recent-federal-decisions>

Perhaps it's an overused phrase but "sometimes you win, sometimes you lose" has relevance to agriculture lately. It's a fitting response to several new decisions from the federal courts. Some of the decisions align with positions advocated by agricultural interests but others do not. [We wrote last week](#) about a case in the "sometimes you lose" category--the Court's ruling in favor of small refineries claiming exemptions from renewable fuels mandates. Several members of Congress have already proposed legislation that would nullify the Court's decision in that case. A second loss came with a challenge to California's animal welfare standards and a third with the court striking down a waiver of E15 ethanol blends. The sole win came with a challenge to a California statute allowing union organizing activities on private property. Here's a summary.



California Proposition 12 – North American Meat Institute v. Bonta

The U.S. Supreme Court announced that it would not grant certiorari and review a decision by the Ninth Circuit Court of Appeals' on California Proposition 12. Voters approved Proposition 12, the "Prevention of Cruelty to Farm Animals Act," in 2018. The Act establishes housing standards for egg-laying hens, breeding hogs and veal calves and prohibits the confinement of animals in spaces that don't meet the standards. Business owners and operators in California may not sell meat or egg products from animals that are not confined according to the standards. Standards for calves (43 square feet) and egg laying hens (1 square foot) became effective in 2020 while standards for breeding pigs and their offspring (24 square feet) and cage-free provisions for egg laying hens are to be effective beginning January 1, 2022.

The North American Meat Institute (NAMI) sought a preliminary injunction against Proposition 12 in 2019, arguing that it violates the Interstate Commerce Clause of the U.S. Constitution, which grants only Congress the authority to regulate commerce among the states. NAMI claimed that the Act establishes a "protectionist trade barrier" that would protect California producers from out-of-state competition and control conduct outside of its state borders.

Both the federal District Court and the Ninth Circuit Court of Appeals disagreed with NAMI. The appellate court affirmed the District Court's conclusions that Proposition 12 is not discriminatory on its face and does not have a discriminatory purpose or effect, as there was no evidence that the state had a protectionist intent and the Act treats in-state and out-of-state producers the same. Nor does the Act try to directly regulate out-of-state conduct or impose burdens on out-of-state producers, but instead only precludes sale of meats resulting from certain practices, the courts concluded. The federal government and 20 states joined NAMI in a request for a rehearing of the case by the full panel of judges on the Ninth Circuit but were unsuccessful.

NAMI turned to the U.S. Supreme Court, seeking a review of the case on the basis that the Ninth Circuit's decision conflicts with holdings by other appellate courts and the U.S. Supreme Court. The Supreme Court denied the request for review on June 28, offering no explanation for its decision. The legal challenges to Proposition 12 do not end with that denial, however. A separate case filed by the National Pork Producers Association and American Farm Bureau Federation is pending before the Ninth Circuit Court of Appeals. It also argues that Proposition 12 negatively impacts interstate commerce and will increase consumer costs for pork and that the federal district court judge who dismissed the case failed to examine the practical effects the law would have on producers. The Ninth Circuit heard the appeal in April, so we may see a decision in the next few months.

E15 waiver: American Fuel & Petrochemical Manufacturers v. EPA

The D.C. Circuit Court of Appeals held in favor of a claim by the American Fuel and Petrochemical Manufacturers (AFPM) challenging a Trump Administration rule in 2019 that waived restrictions on summer sales of E15 due to higher fuel volatility in summer temperatures. The decision could mean that current sales of E15 must end unless further legal challenges follow.

The 2019 Reid Vapor Pressure (RVP) waiver for E15 allowed fuel stations to sell 15% ethanol blends during the summer months rather than limiting those sales to 10% ethanol, a move that would increase ethanol sales. As expected, the oil and gas refining industry responded to the waiver issuance with a legal challenge, arguing that the administration lacked the authority to grant the RVP waiver for fuels over 10% ethanol. The volatility waiver authority derives from the Clean Air Act, which establishes when the EPA may alter volatility limits through the waiver process and specifically allows the EPA to grant an ethanol waiver for "fuel blends containing gasoline and 10 percent denatured anhydrous ethanol" in Section 745(h)(4). The EPA relied upon the ethanol waiver language in the Clean Air Act back in 1992 to waive volatility standards for E10. But whether the EPA could use the Clean Air Act language to issue a waiver for ethanol beyond 10 percent is the question at the heart of the dispute. The EPA and intervenors in the case representing biofuel interests claimed the language was ambiguous enough to allow the EPA to grant waivers for fuel with 10% ethanol or more.

In a unanimous decision, the Court of Appeals concluded that “the text, structure, and legislative history” of the Clean Air Act do not allow EPA to extend a waiver to E15. The court found the statutory language straightforward, lacking any modifiers that would establish a range of ethanol blends rather than the 10 percent stated in the statute. Legislative actions at the time also supported an interpretation that the 10 percent language addressed E10 and not ethanol blends in excess of 10 percent.

The next critical question for this case is what the Biden Administration EPA will do with case and the E15 waiver. A request for further review of the D.C. Circuit’s opinion is possible. Or perhaps the EPA will pursue a legislative fix that increases the statutory reference from 10 percent to 15 percent ethanol. And it’s always possible that no further action will occur and E15 summer sales will no longer be an option.

Union organizer access as a taking – Cedar Point Nursery v Hassid

In the “win” column for agricultural employers is a case that asks whether a state regulation granting access to private property for union activities is a “taking” of property under the Constitution. The U.S. Supreme Court’s answer to the question is “yes,” although three of the Justices dissented from the majority opinion. A regulation formed under the California Agricultural Labor Relations Act of 1975 gives labor organizations a “right to take access” to an agricultural employer’s property “for the purpose of meeting and talking with employees and soliciting their support.” The regulation requires agricultural employers to allow union organizers to be on the property up to three hours per day and four 30-day periods per year but cannot be “disruptive” and must provide written notice to employers. An employer who interferes with the organizers can be subject to sanctions.

After representatives from United Farm Workers accessed Cedar Point Nursery and engaged in disruptive conduct and sought to access Fowler Packing Company, both occasions without notice to the employers, the companies filed a lawsuit seeking an injunction from the federal District Court. They argued that the regulation was a physical taking of their properties because it granted an easement to the union organizers, which required compensation under the Fifth and Fourteenth amendments of U.S. Constitution.

The District Court did not grant the injunction and held that the regulation is not a physical taking because it doesn’t allow the public a permanent and continuous right of access to the property for any reason. The Ninth Circuit Court of Appeals affirmed that decision, agreeing that it wasn’t a physical taking, but a strong dissent argued that the union activities were a physical occupation and taking of property. The agricultural companies sought but were denied a hearing before all of the Ninth Circuit judges, leading to a request for review granted by the U.S. Supreme Court.

The majority of the Justices concluded that the California regulation is a physical taking because it grants union organizers a right to invade an agricultural employer’s property. Particularly important to the majority was the regulation’s removal of an owner’s right to exclude people from their private property, which is a “fundamental element” of property rights according to the Court. The Court rejected the argument that the access must be continuous and permanent to be a physical taking and dispensed with claims that the holding could endanger regulations that allow government entries onto private land. The Court’s holding was clear: the access regulation amounts to simple appropriation of private property.

Read the court opinions in these three cases here:

[Ninth Circuit’s Opinion North American Meat Institute v. Becerra/Bonta](#)

[American Fuel & Petrochemical Manufacturers v. EPA](#)

[Cedar Point Nursery v. Hassid](#)

Steps to Speed up Field Curing of Hay Crops

By: Mark Sulc, Jason Hartschuh, & Allen Gahler, OSU Extension

Source: <https://agcrops.osu.edu/newsletter/corn-newsletter/22-2021/steps-speed-field-curing-hay-crops>

The rainy weather in many regions of Ohio and surrounding states is making it difficult to harvest hay crops. We usually wait for a clear forecast before cutting hay, and with good reason because hay does not dry in the rain! Cutting hay is certainly a gamble but waiting for the perfect stretch of weather can end up costing us through large reductions in forage quality as the crop matures.

As we keep waiting for perfect haymaking weather, we will reach the point where the drop in quality becomes so great that the hay has little feeding value left. In such cases, it may be better to gamble more on the weather just to get the old crop off and a new one started. Some rain damage is not going to reduce the value much in that very mature forage.

Before cutting though, keep in mind that the soil should be firm enough to support equipment. Compaction damage has long-lasting effects on hay crops. We've seen many fields where stand loss in wheel tracks led to lower forage yields, weed invasion, and frustrating attempts to "fill in" the stand later.



This article summarizes proven techniques that can help speed up the process involved in storing good quality forage. While the weather limits how far we can push the limits, these techniques can help us improve the chances of success in those short windows of opportunity between rains, and hopefully avoid overly mature stored forages.

Haylage vs. Hay

Consider making haylage/silage or baleage instead of dry hay. Haylage is preserved at higher moisture contents, so it is a lot easier and quicker to get it to a proper dry matter content for safe preservation compared with dry hay. Proper dry matter content for chopping haylage or wrapping baleage can often be achieved within 24 hours or less as compared with 3 to 5 days for dry hay.

"Hay in a day" is possible when making hay crop silage. The forage is mowed first thing in the morning and laid in wide swaths to be raked in the late afternoon and chopped as haylage starting in early evening. Proper dry matter content for haylage ranges from 30 to 50% (50 to 70% moisture) depending on the structure used. Wrapped baleage usually requires 24 hours to cure. Wrapped baleage should be dried to 40 to 55% dry matter (45 to 60% moisture).

Dry hay should be baled at 80 to 85% dry matter (15 to 20% moisture), depending on the size of the bale package. The larger and the denser the dry hay package, the drier it must be to avoid spoilage. For example, safe baling moistures for dry hay without preservatives are 18-20% for small square bales (80 to 82% dry matter), 18% or less for large round bales, and less than 17% for large square bales. See below for more information on baling with preservatives.

Mechanically Condition the Forage

Faster drying of cut forage begins with using a well-adjusted mower-conditioner to cause crimping/cracking of the stem (roller conditioners) or abrasion to the stems (impeller conditioners). Adjust roller conditioners so at least 90% of the stems are either cracked or crimped (roller conditioners) or show some mechanical abrasion (impeller conditioners).

Some excellent guidelines for adjusting these mower conditioners can be found in an article by Dr. Ronald Schuler of the University of Wisconsin, available online at <https://fyi.extension.wisc.edu/forage/adjusting-the-conditioning-system-...>

Consider Desiccants

Desiccants are chemicals applied when mowing the crop that increase the drying rate. The most effective desiccants contain potassium carbonate or sodium carbonate. They are more effective on legumes than grasses and most useful for making hay rather than silage or baleage. Desiccants work best under good drying conditions. They do not help increase drying rate when conditions are humid, damp, and cloudy, such as we have often experienced this summer. Consider the weather conditions before applying them.

Maximize exposure to sunlight

I once heard someone say "You can't dry your laundry in a pile, so why do you expect to dry hay that way?" Exposure to the sun is the single most important weather factor to speed drying. The trick is to expose to sunshine as much of the cut forage as possible.

The swath width should be about 70% of the actual cut area. The mowers on the market vary in how wide a windrow they can make, but even those that make narrow windrows have been modified to spread the windrow wider.

Details can be found in articles at the Univ. of Wisconsin website mentioned above (see especially "Getting the Most from the Mower Conditioner" by Kevin Shinnery, <https://fyi.extension.wisc.edu/forage/getting-the-most-from-the-mower-conditioner/>).

Another way to spread out and aerate the crop for faster drying is with a tedder. Tedders are especially effective with grass crops. They can cause excessive leaf loss in legumes if used when the leaves are dry. Tedders can be a good option when the ground is damp, because the crop can be mowed into narrow windrows to allow more ground exposure to sunlight for a short time, and then once the soil has dried a bit the crop can be spread out with the tedder. Tedding twice may decrease drying time. Tedding shortly after mowing allows 100% ground coverage, then tedding the next day helps keep the crop off the ground. Be cautious to set tedder properly so that dirt is not incorporated into the hay but all hay is lifted off the ground.



Wide windrows are one or several techniques to speed hay drying

Take precautions to follow manufacturer recommendations on ground speed and RPM's when tedding. Many of the modern in-line "fluffer" type tedders are ground driven and operators often exceed recommended speeds, which can result in bunching and wrapping of the hay, which will increase drying time and make raking more difficult.

When making haylage, if drying conditions are good, rake multiple wide swaths into a windrow just before chopping. For hay, if drying conditions are good, merge or rake multiple wide swaths into a windrow the next morning when the forage is 40 to 60% moisture to avoid excessive leaf loss.

Research studies and experience have proven that drying forage in wide swaths can significantly speed up drying. Faster drying in wide swaths results in less chance of rain damage and studies by the University of Wisconsin showed that wide swaths (72% of the cut width) result in lower neutral detergent fiber (NDF) and higher energy in the stored forage.

Consider Preservatives

Sometimes the rain just comes quicker than we have time for making dry hay. As mentioned above, making haylage helps us preserve good quality forage in those short rain-free windows. A second option is to use a preservative. The most effective preservatives are based on propionic acid, which is caustic to equipment, but many buffered propionic preservatives are available that minimize that problem.

Preservatives inhibit mold growth and allow safe baling at moisture contents a little higher than the normal range for dry hay. Carefully follow the preservative manufacturer's directions and application rates for the hay moisture content at baling. Be sure the application is uniform to avoid spots that spoil. Most products are effective when hay moisture is less than 25% but become iffy between 25-30% and do not work if moisture is over 30%. When utilizing preservatives, safe baling moisture can go up to 26% on small squares and round bales, but only 23% on large squares, according to label guidelines on most propionic acid based products. Baling at these moistures requires properly calibrated equipment to apply the correct amounts of preservative, and it does not guarantee that bales will not generate internal heat.

While the acid works to limit the production of mold and fungal spores that can lead to additional heating, any type of bale made over 20% moisture always has the potential to heat. Although mold production may be limited, discoloration and caramelization of the higher moisture stems can still occur. This heating can also degrade proteins in the hay, reducing overall feed quality despite still helping to preserving the hay from spoilage and hopefully making it safe to store indoors. Keep in mind that preservative treated hay should be fed within a year or less, as the preservative effect will wear off over time.

If baling on the wet side, watch those bales carefully! If hay is baled at higher moisture contents that are pushing the safe limits, keep a close watch on them for two to three weeks. Use a hay temperature probe and monitor the internal temperature of the hay during the first three weeks after baling. See the following article for more information on monitoring wet hay: <https://agcrops.osu.edu/newsletter/corn-newsletter/15-2021/hay-barn-fires-are-real-hazard>

Grazing & Forage Field Day in Licking County on August 28

by: Dean Kreager, Licking County Ag & NR Educator

Extension in Licking and Knox Counties are teaming together with the Ohio Forage and Grasslands Council to provide a drive it yourself tour of two locations in Licking County and one in Knox County on August 28. Our tour will begin at Lightning Ridge Farm in Granville where Bill O'Neill raises Longhorn cattle utilizing intensive grazing. With twelve divided lots and the capability to increase divisions into twenty-four paddocks, cattle are moved daily and have access to portable piped water. We will also discuss the value of hay quality preservation while touring a new hoop barn constructed for hay storage. The second stop in the tour will move six miles north to a field managed by Ned Campbell who has provided space to plant about twelve varieties of forages following wheat harvest. Attendees will be able to observe and discuss the value of these forages for grazing or harvesting. For the final stop, we will move further north into Knox county to learn about the use of Conservation Reserve Program (CRP) approved warm-season grass production. This field day will begin at 6817 Cat Run Rd. Granville, OH 43023 at 11:00 a.m. and conclude at 3:00 p.m. There is a \$10 registration fee per person. Lunch is included with registration. A \$5 discount will be applied if the person registering is an OFGC Member or a resident of the host county. Payment will be collected at the field day. Please register within one week of the event you plan to attend by completing a quick [registration form here](#).

Questions about the Summer Forage Field Day can be directed to Gary Wilson by calling 419-348-3500, Dean Kreager 740-618-6332, or Sabrina Schirtzinger 740-397-0401 .



Scan Here to Register:



Late Wheat Harvest and Grain Quality Concerns

By: Laura Lindsey & Pierce Paul

Source: <https://agcrops.osu.edu/newsletter/corn-newsletter/22-2021/late-wheat-harvest-and-grain-quality-concerns>

Most of the winter wheat in Ohio has been harvested. However, persistent wet weather has delayed harvest in some areas of the state. Late harvest coupled with excessive rainfall means more time for late-season mold growth, mycotoxin accumulation, test weight reduction, and sprouting; all of which could result in poor overall grain quality. In a previous CORN newsletter article, we summarized some of our wheat harvest date research: <https://agcrops.osu.edu/newsletter/corn-newsletter/18-2021/don%E2%80%99t-delay-wheat-harvest>

Test weight (grain weight per unit volume or grain density) is one of the grain quality traits most likely to be affected by harvest delay and wet conditions. Low test weights usually occur if grain is prevented from filling completely or maturing and drying naturally in the field. Rewetting of grain in the field after maturity but prior to harvest is one of the main causes of reduced test weight. When grain is rewetted, the germination process begins, causing photosynthates (i.e., starch) to be digested. This leaves small voids inside the grain which decreases test weight. Additionally, grain will swell each time it is rewetted and may not return to its original size as it dries which will also reduce test weight. Thus, the enlarged kernels will take more space but weigh the same, allowing fewer kernels to pack in the measuring container, lowering the test weight.



Rain and harvest delay may also lead to pre-harvest sprouting in some varieties. Sprouting is characterized by the swelling of kernels, splitting of seed coats, and germination of seeds (emergence of roots and shoots) within the wheat heads. Some varieties are more tolerant to sprouting than others, and for a given variety, sprouting may vary from one field to another depending on the duration of warm, wet conditions. Sprouting affects grain quality (test weight). Once moisture is taken up by mature grain, stored reserves (sugars especially) are converted and used up for germination, which leads to reduced test weights. Even before visual signs of sprouting are evident, sugars are converted and grain quality is reduced. Since varieties differ in their ability to take up water, their drying rate, the rate at which sugars are used up, and embryo dormancy (resistance to germination), grain quality reduction will vary from one variety to another.

In addition to sprouting, the growth of mold is another problem that may result from rain-related harvest delay. To fungi, mature wheat heads are nothing more than dead plant tissue ready to be colonized. Under warm, wet conditions, saprophytic fungi (and even fungi known to cause diseases such as wheat scab) readily colonize wheat heads, resulting in a dark moldy cast being formed over the heads and straw. This problem is particularly severe on lodged wheat. In general, the growth of blackish saprophytic molds on the surface of the grain usually does not affect the grain. However, the growth of pathogens, usually whitish or pinkish mold, could result in low test weights and poor overall grain quality. In particular, in those fields with head scab, vomitoxin may build-up to higher levels in the grain, leading to further grain quality reduction and dockage. While vomitoxin contamination is generally higher in fields with high levels of wheat scab, it is not uncommon to find above 2 ppm vomitoxin in late-harvested fields that have been exposed to excessive moisture. Even in the absence of visual scab symptoms, the fungi that produce vomitoxin may still colonize grain and produce toxins if harvest is delayed.

To minimize grain quality losses, it is best to harvest wheat on the first dry-down. Harvesting at a slightly higher moisture level (18% for example) may also be useful for minimizing quality losses, particularly those associated with sprouting and mold growth due to rainfall and harvest delay. However, if grain is harvested at moisture above 15%, it should be dried down below 15% before storage to minimize mold growth and mycotoxins in storage.

Nutrient Value of Wheat Straw

By: Laura Lindsey & Ed Lentz

Source: <https://agcrops.osu.edu/newsletter/corn-newsletter/22-2021/nutrient-value-wheat-straw>

Before removing straw from the field, it is important farmers understand the nutrient value. The nutrient value of wheat straw is influenced by several factors including weather, variety, and cultural practices. Thus, the most accurate values require sending a sample of the straw to an analytical laboratory. However, “book values” can be used to estimate the nutrient values of wheat straw. In previous newsletters, we reported that typically a ton of wheat straw would provide approximately 11 pounds of N, 3 pounds of P₂O₅, and 20 pounds of K₂O.

The nitrogen in wheat straw will not immediately be available for plant uptake. The nitrogen will need to be converted by microorganisms to ammonium and nitrate (a process called “mineralization”). Once the nitrogen is in the ammonium or nitrate form, it is available for plant uptake. The rate of which mineralization occurs depends on the amount of carbon and nitrogen in the straw (C:N ratio). The USDA reports a C:N ratio of 80:1 for wheat straw which means there are 80 units of carbon for every unit of nitrogen. Mineralization rapidly occurs when the C:N ratio is $\leq 20:1$. At a C:N ratio of 80:1, mineralization will be much slower. (For comparison, corn stover is reported to have a C:N ratio of 57:1.) Rate of mineralization is also influenced by soil moisture and temperature. Since mineralization is a microbial-driven process, mineralization will be slowed (halted) in the winter when temperatures are cold. Thus, no N credit is given for wheat straw since it is not known when the N will mineralize and become available to the following crop. In addition to nitrogen, removal of straw does lower soil potassium levels. If straw is removed after heavy rainfall, some of the potassium may have leached out of the straw, lowering the nutrient value. However, a soil test should be done to accurately estimate nutrient availability for future crops. Besides providing nutrients, straw has value as organic matter, but it is difficult to determine the dollar value for it.



Pre-Harvest Sprouting & Falling Number

By: Pierce Paul, Laura Lindsey, Wanderson B. Moraes

Source: <https://agcrops.osu.edu/newsletter/corn-newsletter/22-2021/pre-harvest-sprouting-and-falling-number>

Persistent rainfall over the last several days has prevented some wheat fields from being harvested. This could lead to pre-harvest sprouting and other grain quality issues. However, the extent to which sprouting occurs will depend on the variety and how long the grain is exposed to warm, wet conditions before it is harvested. For instance, white wheats tend to be more susceptible to pre-harvest sprouting than the red wheats commonly grown here in Ohio. As a result, the level of sprouting will vary from one field to another. Sprouting is a trait that negatively affects grain quality. It actually is premature germination of the grain while it is still in the heads in the field. This process is driven by enzymes, including α amylase, and the activity of this enzyme can be measured to determine how bad pre-harvest sprouting it.

See: <https://agcrops.osu.edu/newsletter/corn-newsletter/22-2021/late-wheat-harvest-and-grain-quality-concerns> for more on delayed grain harvest and grain quality.



Falling number (FN in seconds) is a widely accepted measure of pre-harvest sprouting damage. The higher the FN, the lower the level of sprouting. **As a guide** an FN ≥ 300 sec would indicate that the grain is not sprouted, $200 \leq \text{FN} < 300$ sec would be indicative of some sprouting, $62 < \text{FN} < 200$ would indicate that the grain is

severely sprouted, and FN = 62 would mean that the grain is extremely sprouted. **However, PLEASE NOTE that the specific numbers and ranges will depend on the equipment used to measure FN, and what the numbers mean in terms of utilization of the grain, depends on the intended end use.** So, a grain buyer has some freedom to determine what he or she would consider to be an acceptable FN.

Falling number measures the time (in seconds) it takes for a weighted plunger to fall through a suspension of heated flour paste. In other words, it measures the thickness (viscosity) of the heated flour paste made from the grain being tested. Flour paste made from badly sprouted grain is thinner (less viscous) than paste made from healthy, unsprouted grain. As a result, the plunger taking less time to fall through the flour paste from sprouted grain, hence the lower falling number.

Western Bean Cutworm Numbers Beginning to Increase Across Ohio

Source: <https://agcrops.osu.edu/newsletter/corn-newsletter/22-2021/western-bean-cutworm-numbers-begin-increase-across-ohio>



Western bean cutworm (WBC) numbers for the week ending July 11 have increased to the point where scouting for egg masses is recommended in Fulton, Henry, Lorain and Lucas counties. Traps were monitored from July 5 – 11 and resulted in a statewide average of 3.9 average moths per trap, though higher in the counties noted; (Figure 1).

We used growing degree day calculations to predict approximate percentage of

adult WBC flight as of Sunday July 11th (Figure 2). At this time, the majority of counties in NW Ohio are seeing approximately 25% adult flight, whereas counties in central and NE Ohio remain at 10%. Once GDD numbers accumulate to 2704, approximately 50% of WBC flight will

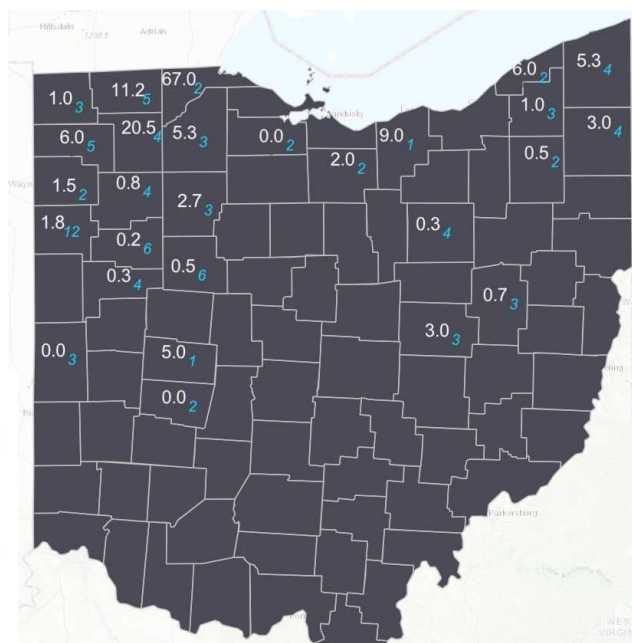


Figure 1. Average Western bean cutworm adult per trap (in white) followed by total number of traps monitored in each county (in blue) for week ending July 11, 2021. Map developed by Suranga Basnagala, Ohio State University, using ArcGIS Pro.

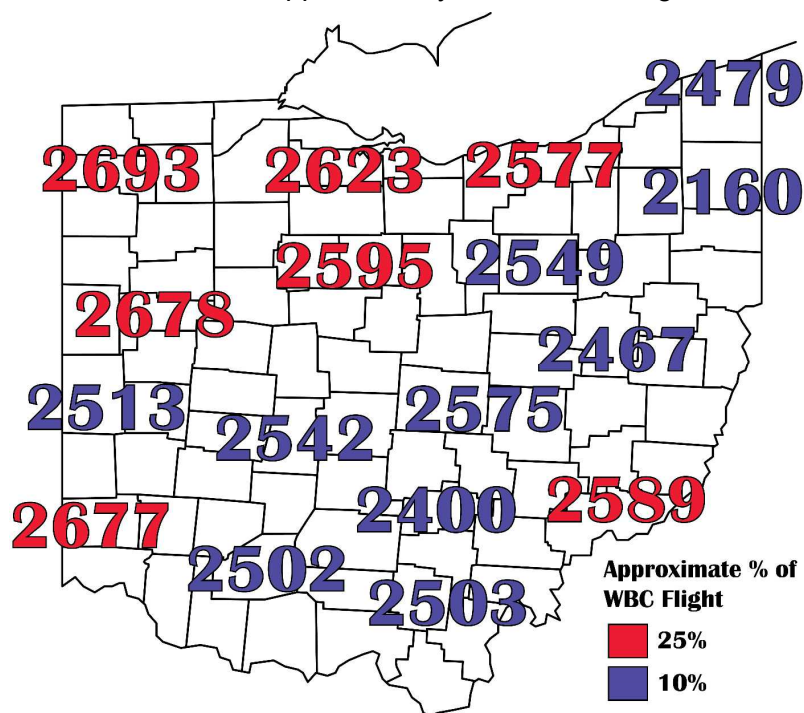


Figure 2. Growing degree day GDD accumulations from March 1, through July 11, 2021. Locations with red GDD accumulation numbers indicate approximately 25% Western bean cutworm (WBC) adult flight has occurred. Locations with blue GDD accumulation numbers have reached approximately 10% adult WBC flight. Map developed by Aaron Wilson, Ohio State

have occurred. For more information on calculating GDD and WBC please see the following article: <https://cropwatch.unl.edu/2021/degree-days-prediction-western-bean-cutworm-flight>

Scouting guidelines

Counties with adult WBC trap counts averaging 7 or more moths per week should begin scouting for WBC egg masses in corn fields that are pre-tassel approaching tassel. Freshly laid egg masses are white and turn a purplish color as they mature (Figure 3), close to hatch. To scout, randomly choose at least 20 consecutive plants in 5 locations within a field (a total of 100 plants per field). Inspect 3–4 leaves on the uppermost portion of the corn plant. It is very useful to look at leaves with the sun behind them – often the shadow of the egg mass will reveal it without having to examine the leaf closely. Field corn should be treated with a foliar treatment if more than 5 % of inspected plants have eggs or larvae. Sweet corn should be treated if more than 4 % of inspected plants have eggs or larvae (processing market), or 1 % of plants (fresh-market). For more scouting information, view our WBC scouting video <https://aginsects.osu.edu/news/western-bean-cutworm-video>

Treatment

If the number of egg masses/larvae exceed the threshold mentioned above, foliar applications of insecticides are available, especially those containing a pyrethroid. Timing an insecticide application is critical and must happen before the caterpillar enters the ear, but after the eggs hatch. If the eggs have hatched, applications should be made after 95% of the field has tassels. If the eggs have not hatched, monitor the egg masses for the color change. Newly laid egg masses will be white but turn purple as they mature. Hatch will occur within 24–48 hours once eggs turn purple.

Soybean Defoliation: It Takes A Lot to Really Matter

By: Curtis Young & Kelley Tilmon

Source: <https://agcrops.osu.edu/newsletter/corn-newsletter/22-2021/soybean-defoliation-it-takes-lot-really-matter>

The mid-season defoliators are beginning to show up in soybean fields across Ohio. These defoliators include first generation bean leaf beetles, Japanese beetles, grasshopper nymphs and several different caterpillars such as silver-spotted skippers, painted-lady butterflies and green cloverworms. Since all of these insects collectively add to the defoliation of soybeans, their collective feeding is used in the threshold to determine the need for an insecticide treatment, but it takes a lot of feeding to add up to significant damage. It often looks worse than what it truly is.



Japanese Beetle

When scouting soybean fields to assess levels of damage, it is important not to let one's eye and mind over estimate what is truly there. Japanese beetles and grasshoppers tend to hit edges of fields first before they start moving farther into the centers of the fields. And Japanese beetles tend to feed in aggregations and at the tops of plants producing a startling appearance that easily catches one's eye standing at the edge of a field looking in. It is imperative to assess the whole field and the entire plant from top to bottom to get a true picture of defoliation levels. It is very rare that we reach economic levels of defoliation here in Ohio.



Red-phase Bean Leaf Beetle with Spots

A rescue treatment is advised when defoliation levels reach 40% in pre-bloom stages, 15% in bloom, and 25% during pod fill to harvest. These defoliation levels apply to the plant as a whole, not just certain leaves. Damage is often worst at the top of the canopy but on closer examination most of the plant is relatively unharmed. Make your decision based on the average condition of whole plants, not a scan of the top

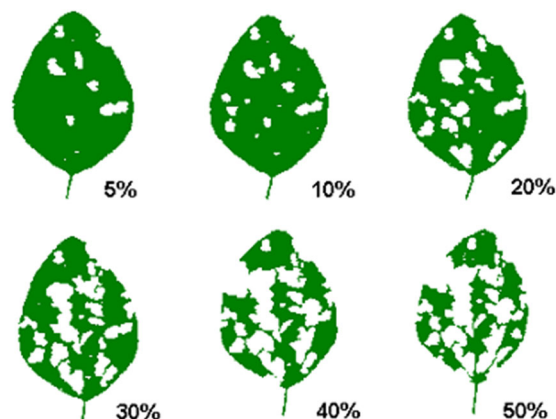
canopy. Also, defoliation tends to be worse on field edges, so make your assessment based on the field as a whole, including interior.



Later in the growing season, we will have to watch for pod injury from bean leaf beetle and grasshoppers. A different set of rules apply when dealing with pod injury.

A visual guide to defoliation is useful because it is very easy to over-estimate defoliation in soybean. Whether it is one species of foliage-feeding insect or several foliage-feeding insects present in soybean the same percent defoliation guidelines can be used for all of them collectively.

For more information about soybean defoliating insects visit our OSU Extension Entomology factsheet



at: https://aginsects.osu.edu/sites/aginsects/files/imce/ENT_39_14.pdf

To help train yourself about estimating soybean defoliation, look at the following soybean defoliation estimation exercise:

https://aginsects.osu.edu/sites/aginsects/files/imce/Leaf%20Defoliators%20PDF_0.pdf

Grid Pricing of Fed Cattle

By: Robert Hogan, Jr., David Anderson and Ted Schroeder

Source: <https://agrilifeextension.tamu.edu/library/ranching/grid-pricing-of-fed-cattle/>

Grid prices, or value-based marketing, refers to pricing cattle on an individual animal basis. Prices differ according to the underlying value of the beef and by-products produced from each animal. Schroeder et al. have reported that pricing fed cattle on averages is detrimental to the industry because it does not send appropriate price signals to cattle feeders, stockers and, ultimately, cow-calf producers. However, incentives to sell cattle on averages and problems associated with identifying beef quality have inhibited the development of value-based pricing. Both cattle feeders and packers have been reluctant to change from a live animal pricing system to a carcass pricing system.

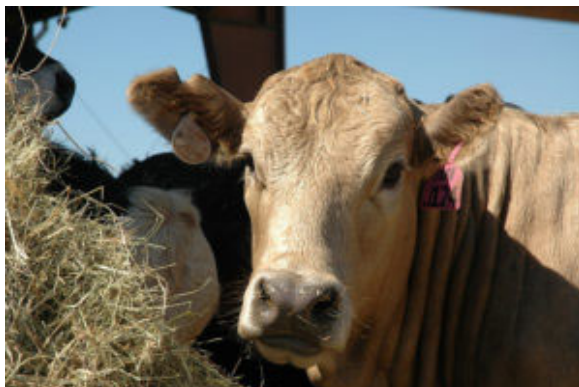
Opportunities to profit from better matching fed cattle prices to value have encouraged packers, alliances and producers to use carcass-based pricing. Now, there are several value-based fed cattle pricing systems,

including formula pricing, price grids and alliances. Is there one “best” pricing method? How are live weight, dressed weight and grid or formula prices related? The purpose of this publication is to help producers decide which form of fed cattle pricing may be most profitable for them.

Is Carcass Merit Pricing For You?

Should you market your cattle on a carcass merit basis? If so, does it matter which pricing system you use or which packer or alliance you sell to? The answer to both questions is, “It depends.” The most critical factors that influence the profitability of these decisions include:

1. the quality and dressing percent of the cattle you produce
2. the Choice-Select market price spread
3. production and feeding cost differences associated with targeting your cattle to a particular price grid or packer; and most important
4. your knowledge about the price/ quality distribution of your cattle and your (or the feeder’s) ability to sort your cattle to meet the criteria for a particular grid or formula. The following analyses focus on the price/ cattle quality relationship, without considering production costs. This is not to imply that production costs associated with attaining a particular quality-related price incentive are not important. They are critical to profitability. However, production costs differ with producers and cattle types and are not explicitly evaluated here.



Cattle Pricing Methods

Fed cattle usually are priced in one of three ways:

1. live
2. dressed weight or “in the beef”
3. carcass grade and yield or grid pricing

Live Cattle Pricing

When fed cattle are priced on a live basis, price is generally negotiated between the packer and the feedlot based upon the expected value of the cattle when processed (a 4 percent pencil shrink on the cattle from the feedlot to the packing plant is usually included). To establish a buy order, the packer starts with a base Choice carcass price and then adds or subtracts expected quality and yield grade premiums and discounts associated with quality traits the pen of cattle are expected to exhibit when processed. The adjusted carcass price is converted to a live animal price by multiplying it by the expected dressing percentage. This live price is adjusted with by-product and hide values and further adjusted for slaughter costs, transportation costs, and the packer’s profit margin¹ to establish an estimated live animal bid price. If packers can purchase a large number of cattle from one location at one time, they may increase their bid price to reflect reduced transactions and procurement costs.

Pricing cattle on a live basis is appealing to some cattle feeders who want to maintain complete flexibility in cattle pricing until the transaction price is established. Live pricing may also be referred if the producer does not know the characteristics of the cattle or expects the dressing percentage, quality grade or yield grade to be below average. However, because meat quality and carcass dressing percentage are difficult to predict accurately on live animals, premiums and discounts paid on a live basis generally do not reflect the true value of the final product. In other words, high-quality cattle are often undervalued and low-quality cattle often overvalued. This gives producers no incentive to invest in better genetics and produce a better product.

Dressed Weight Pricing

When cattle are marketed on a dressed-weight basis, the cattle seller assumes the risk of dressing percentage. Price is based upon the actual hot carcass weight. The dressed price offered is similar to the live price bid in that the buyer starts with a base Choice carcass price and adjusts it for expected quality and yield

grade, weight premiums and discounts, by-products, slaughter costs (seller generally pays transportation on dressed cattle sales), and the packer's profit.

In principle, the dressed-weight price will be comparable to a live price adjusted for dressing percentage for the same pen of cattle. In practice, the dressed price (after transportation costs) may be higher or lower because there are no errors in estimating dressing percentage. Over time, across a large number of pens, the average dressed price should be greater than the average dressing percentage-adjusted live price, other things being equal.

Grid Pricing

Pricing cattle on a grade and yield or grid basis is essentially the same as pricing on a dressed-weight basis, except that in addition to dressing percentage, the seller assumes the risk of the quality and yield grade of each animal in the pen. Many beef packers offer cattle producers the opportunity to price cattle on a carcass grid basis.

Most packer grids list a base price for a Choice, yield grade 3, 550- to 900-pound steer carcass. For example, a typical price premium and discount schedule offered by beef packers is shown in Table 1.

Table 1. Example grid, as presented by a packer (\$/dressed cwt).

Choice YG3 550- to 900-lb	Base price
Prime-Choice Premium	6.00
CAB-Choice Premium	1.00
Choice-Select Discount	-9.00
Choice-Standard Discount	-18.00
Yield Grade I	2.00
Yield Grade II	1.00
Yield Grade IV	-15.00
Yield Grade V	-20.00
Light Carcasses (<550 lb)	-19.00
Heavy Carcasses (>900 lb)	-19.00
Dark Cutters	-25.00
Bullocks/Stags	-25.00

The assorted premiums and discounts are then simply copied into the grid as shown in Table 2.

The rest of the grid is now filled in typically by just adding premiums and discounts. For example, to get the premium for Prime-Yield Grade 1, add the \$6.00 Prime premium and the \$2.00

Table 2. Example of grid premiums and discounts.

Quality grades	1	2	Yield grade 3 (\$/cwt carcass)	4	5
Prime			6.00		
CAB			1.00		
Choice	2.00	1.00	Base	-15.00	-20.00
Select			-9.00		
Standard			-18.00		
CARCASS WEIGHTS			OTHER		
550-900 lb		Base (105.00)	Dark Cutter, etc.	-25.00	
			Bullock/Stags	-25.00	
Less than 550 lb			-19.00		
More than 900 lb			-19.00		

Yield Grade 1 premium to get \$8.00. As another example, to compute the discount for Select-Yield Grade 5, add the \$9.00 Select discount and the \$20.00 Yield Grade 5 discount to get -\$29.00. The entire grid is shown in Table 3.

The price received for each carcass is the base price plus the particular premiums and discounts. For example, if the Choice, yield grade 3, 550- to 900-pound carcass price is \$105.00/cwt, a Select, yield grade 4, 700-pound carcass would receive a price of \$81/cwt (\$105.00/cwt – \$24.00/cwt, the Select-yield grade 4 discount).

The USDA reports a weekly survey summarizing selected beef packer grid premium and discount schedules. This report is on the internet at http://www.ams.usda.gov/mnreports/lm_ct155.txt (National Weekly Direct Slaughter Cattle – Premiums and Discounts). The LM CT155 report is useful for understanding average grid price premiums and discounts being offered by packers, and for raising awareness of the range of discounts and premiums.

Table 3 illustrates how quickly net price can decrease with yield grades 4 and 5 and with quality grades below Choice (Select and Standard). In this example, the discount from Choice to Select is a relatively severe \$9/cwt. The discounts between Choice and Select quality grades typically range from \$1.00/cwt to \$12.00/cwt, depending on the supplies of Choice versus Select carcasses, the demand for each, and seasonal purchasing patterns and habits. (The weekly Choice-Select spread has been as large as \$23.08 and as small as \$0.68 over the past 5 years.) There are usually large discounts for Standard grade carcasses, dark cutter carcasses, and carcasses lighter than 550 pounds or heavier than 900 to 950 pounds. Some grids also offer premiums and discounts for hide quality.

For many packers' grids, price premiums and discounts are additive. That is, the base price is adjusted in an additive manner for the associated characteristics of the carcass (as in our example above). For some packers, not all premiums and discounts in their price grid are additive. For example, some packers quote the same price for all Standard grade cattle regardless of yield grade. The USDA grid summary report assumes additive discounts and premiums. In addition, this report is not volume-weighted and includes only packer- stated grids, not actual purchases. As a result, the report does not represent market average grid prices. This is important to understand when interpreting the USDA price report and comparing it with any particular packers' grids you may be considering.

Summary of Pricing Methods

Table 4 summarizes and compares issues associated with typical fed cattle pricing arrangements. Differences in the various methods are important because they use different kinds of information and cause prices to differ even for the same pen of cattle. The key is that as a producer moves from live cattle pricing to dressed-weight to grid pricing, it is increasingly important to understand the type of cattle being marketed and the pricing system being used, and to assess probable net price received.

Over time, average cattle or cattle with little background information may sell better with live pricing. A somewhat better class of cattle may sell better with dressed pricing. First rate classes of cattle whose characteristics are known by the producer may sell better by pricing on the grid.

Formulas: Importance of Base Price

When fed cattle are priced on formula, an important consideration, in addition to the premium/discount structure, is the base price. In interviews with packers and cattle feeders, Schroeder et al. discovered several different types of base prices being used. One was the average price of cattle purchased by the plant where the cattle were to be slaughtered. The average price of cattle was usually for the week prior to, or the week of, slaughter. Other base prices were specific market reports such as highest reported price for a specific market for the week prior to, or week of, slaughter. One base price was tied to live cattle futures prices. Some base prices were negotiated. Some base prices were on a carcass weight basis, whereas others were on a live weight basis based upon yields of the cattle slaughtered.

Table 3. Example grid premiums and discounts.

Quality grades	Yield grade				
	1	2	3	4	5
(\$/cwt carcass)					
Prime	8.00	7.00	6.00	-9.00	-14.00
CAB	3.00	2.00	1.00	N.A.	N.A.
Choice	2.00	1.00	Base	-15.00	-20.00
Select	-7.00	-8.00	-9.00	-24.00	-29.00
Standard	-16.00	-17.00	-18.00	-33.00	-38.00
CARCASS WEIGHTS			OTHER		
550-900 lb		Base	Dark Cutter, etc.	-25.00	
		(105.00)	Bullock/Stags	-25.00	
Less than 550 lb		-19.00			
More than 900 lb		-19.00			

Table 4. Assessing ways to sell fed cattle.

Producer pricing attribute	Cattle pricing method		
	Live	Dressed	Grid
Pricing level	pen level	pen level	animal level
Paid for quality	No	No	Yes
Paid for yield	No	No	Yes
Paid for dressing %	No	Yes	Yes
Who pays trucking?	Buyer	Seller	Seller

Many packers have established base prices using plant average quality grades and dressing percentages of cattle slaughtered during the week. Before agreeing to deliver cattle to a particular packer on formula or grid, the producer should understand in detail how the base price is calculated and obtain some base price quotes over time from several packers. The producer does not want any surprises at this point.

Importance of Grid Premium/Discounts

When selling cattle on price grids, in addition to considering base prices, cattle producers should carefully evaluate the price premium/discount structures of various packers' grids and determine which grid is most advantageous to them. Different grids may offer significantly different prices for the same quality of cattle. In addition, packers value traits differently. For example, one packer might not discount select cattle and another packer might not discount Yield Grade 4 as much as another packer.

Pens of cattle that are fairly uniform generally bring similar prices with different packer grids. However, pens with even small percentages of higher or lower grade carcasses, heavier or lighter animals, or more than the average number of "out" cattle (dark cutters, stags, bullocks, etc.) have much more variable prices. For this reason, it is important for cattle producers to know their cattle, sort their cattle carefully for uniformity, and target them for specific packers.

Grid Price Determinants over Time

In addition to variability in prices across grids, it is important that producers understand determinants of price differences over time. Small changes in dressing percentage alter the relative advantages of selling on either a live or dressed basis. For example, with a \$65/cwt live steer price and a \$102.50/cwt dressed carcass price, cattle dressing higher than 63.4 percent will receive a higher price per head if sold dressed than if sold live, and cattle with a lower dressing percentage will receive a higher price on a live basis. With these prices, a 1200-pound live steer will gain \$6/head in value for each 0.5 percent increase in dressing percentage. Over time, one of the most important determinants of price grid premiums and discounts is the Choice-Select carcass price spread. The greater the Choice-Select spread, the greater the price discount for lower quality cattle. The Choice-Select price spread varies over time as the cattle supply and demand for specific quality grades change.

There is a seasonal pattern to the Choice- Select spread. It typically is the widest in May- June and narrowest in February and again in August. The Choice-Select spread widens and narrows based on seasonal patterns in relative supplies of Choice and Select cattle. Seasonal demand patterns for different cuts and qualities also affect the spread.

Yield grade premiums and discounts have remained relatively stable over time for all packer grids. Therefore, this pricing factor is expected to remain more predictable than the Choice-Select price spread.

***“Even if I knew that tomorrow the world would go to pieces, I would still plant my apple tree”
Martin Luther***

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OHIO STATE UNIVERSITY EXTENSION

BEEF QUALITY ASSURANCE

Re-certification Trainings for Livestock Producers

Coshocton County will be hosting a series of Beef Quality Assurance re-certification programs to allow beef and dairy producers to re-certify their beef quality assurance. Pre-registration is required for each session as space is limited.

Sessions Will Be Held:

July 12, August 9, September 13, October 11, November 3, December 1 & 14
7:00 to 8:30 p.m.

Coshocton County Services Building
724 South 7th Street - Room 145, Coshocton, OH 43812
Seating is limited, so please RSVP
Register by calling: 740-622-2265

Other Sessions are being offered in neighboring counties or can be completed on-line anytime at bqa.org.

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OSU EXTENSION – TUSCARAWAS COUNTY

Beef Quality Assurance (BQA) Recertification

Beef and dairy producers who have a BQA certification that expires in 2021 can attend one of the following sessions to satisfy recertification requirements.

- July 21 at 1pm
- July 29 at 7pm
- August 10 at 1pm
- August 25 at 7pm

Location:
Sugarcreek Stockyards
Cost:
No Charge

Pre-Registration is requested in order to have materials prepared.

Please call: **330-339-2337**

Chris Zoller, Associate Professor, Extension Educator, Agriculture & Natural Resources
OSU Extension, Tuscarawas County 419 16th St SW, New Philadelphia, OH 44663
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