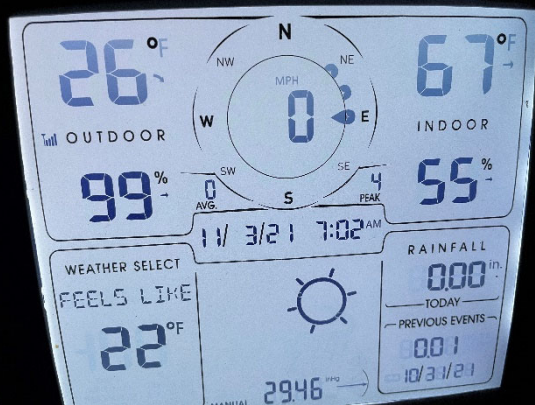


**COSHOCTON COUNTY AGRICULTURE & NATURAL RESOURCES**

Hello, Coshocton County! Last night brought a killing frost to our region marking the official end of our growing season. We were down to 26 degrees at our house overnight and it appears as we will have back to back to back frost events this week.

After harvest was virtually shut down due to rain and gloomy weather to close the month of October, it is good to see harvest picking back up. It looks like a much-needed drier and warmer stretch is upon us as we move into this weekend and into next week.

Congratulations our many local FFA Youth who traveled to Indianapolis last week for the National FFA Convention. We are very proud of all of our FFA youth especially those who received their American FFA Degrees.

Have a great week!

Sincerely,

*David L. Marrison*

Coshocton County OSU Extension ANR Educator

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Fall Reflections  
Farmland and Farmland Owner Tax  
Webinar  
BQA Re-certification Sessions Planned

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**THE OHIO STATE UNIVERSITY**

COLLEGE OF FOOD, AGRICULTURAL,  
AND ENVIRONMENTAL SCIENCES

## Take the Test to Beat the Pest

By: Horacio Lopez-Nicora

Source: <https://agcrops.osu.edu/newsletter/corn-newsletter/2021-37/take-test-beat-pest>

One of the main reasons soybean cyst nematode (SCN) remains the most economically important pathogen of soybean is that it can cause yield loss between 15 and 30% with absolutely no visible symptoms. Resistance to SCN remains the most effective management strategy when rotating to a non-host crop is not an option. The predominant source of resistance in most commercially available soybean cultivars comes from Plant Introduction (PI) 88788, which confers resistance to SCN Type 0 (formerly race 3). Soybean varieties labeled 'SCN-resistant' most likely have resistance from PI 88788. The use of the same source of resistance over the past 20 years has placed selection pressure on SCN populations resulting in a shift in virulence, leading to adaption to now infect PI 88788-derived resistant soybean cultivars. In other words, nematodes reproduce at higher levels than before on soybeans developed with PI 88788 resistance.

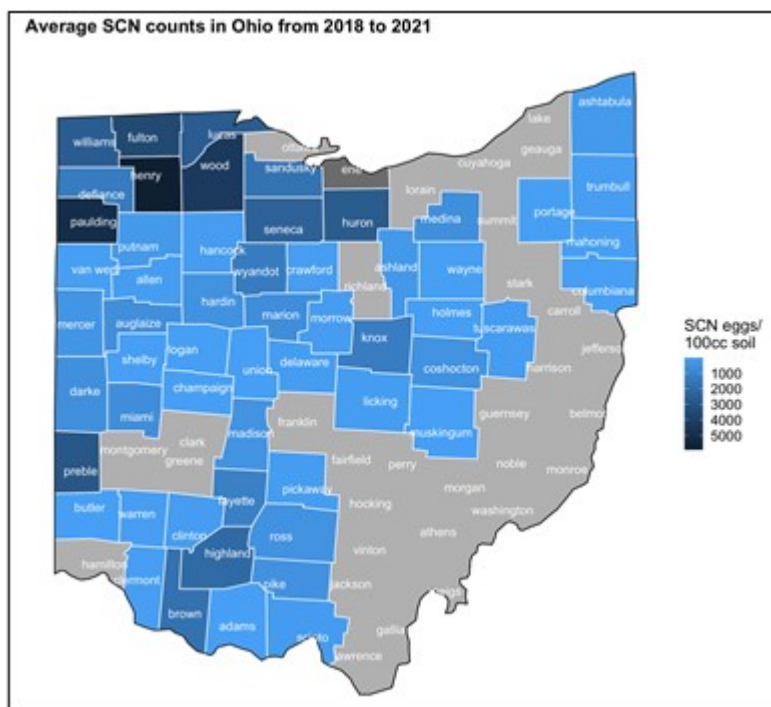
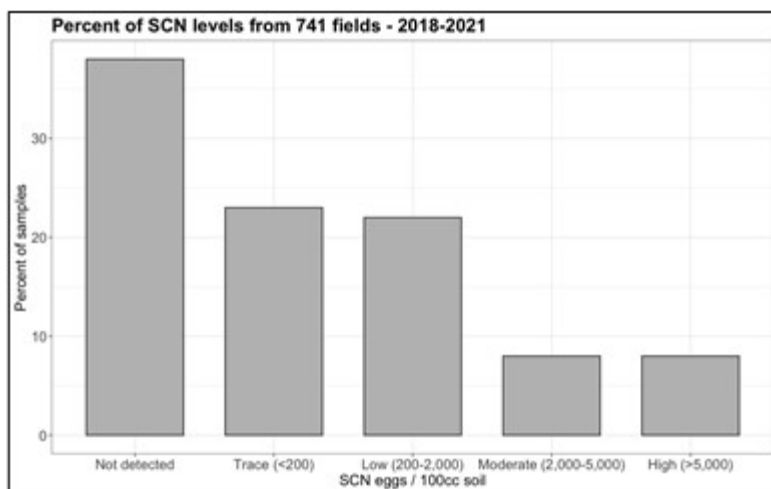


Figure 1. Mean SCN counts by county in Ohio. (top)

Figure 2. Levels of SCN (eggs/100cc soil) in Ohio. (Bottom)



**'What's your number,' Ohio?** Since 2018, with funding from the soybean check-off through the [Ohio Soybean Council](#) and [The SCN Coalition](#), and in collaboration with OSU Extension Educators and growers, we extensively sampled soybean fields in Ohio. To date, a total of 741 soil samples from 57 counties in Ohio were submitted for SCN testing (Fig.1). For most samples, SCN was either not detected (38% of samples) or present in very low numbers (23% of samples with less than 200 eggs/100 cc soil), however, 38% had SCN above 200 eggs/100 cc soil. Some fields (8%) had levels above 5,000 eggs/100 cc soil, which we know can significantly reduce soybean yield (Fig. 2). The number of SCN found in the soil sample will determine the best management plan for that field (Table 1).

**Can SCN populations reproduce on the most commonly used sources of resistance (i.e., Peking [PI 548402], PI 88788, and Hartwig [PI 437654])?** Samples with high SCN numbers were used to determine which source of resistance was still effective in limiting SCN reproduction in a greenhouse assay (i.e., SCN Type test). A resistant cultivar will allow less than 10% SCN reproduction compared to a susceptible cultivar. A total of 61 SCN Type tests have been completed so far, each from an SCN population from a single field. Only 10% of these samples were SCN Type 0, for which soybean cultivars with any source of resistance will be effective. More than 85% of these SCN populations in Ohio can reproduce on PI 88788 (SCN Type 2) at levels from 30 to 60% of a susceptible soybean. There are few SCN populations that can reproduce on Peking (SCN



Type 1) at very low levels (10 to 30% of susceptible). Hartwig remains highly resistance to our SCN populations, but it is not easy to find soybean cultivars with this source of resistance.

**And now what?** Soybean cyst nematode is silently gaining territory in Ohio as SCN numbers are rising. The ability to reproduce on soybean cultivars with 'SCN-resistance' will lead to an imminent loss in our battle to protect Ohio soybean production. To take action, we need to know our numbers. Managing SCN begins with an adequate and correct soil sample. [The SCN Coalition](#) has launched its next phase of raising awareness of SCN distribution and its virulence profile in the U.S. We are excited to continue sampling soybean fields in Ohio to test for SCN with funding from the [Ohio Soybean Council](#) and [The SCN Coalition](#). Our goal is to sample more soybean fields, targeting those that have consistently been yielding low, under continuous soybean or double crop, and with weed issues. Fall is a great time to sample for SCN and we are excited to help with this task by processing up to TWO soil samples, per grower, to be tested for SCN, free of charge. For more information on how to sample for SCN and where to send these samples, please visit our sampling article in this issue '[Collect Fall Soil Samples for SCN.](#)'

| Table 1. Best SCN management strategies for Ohio soybean producers |            |                  |  |
|--|------------|------------------|--|
| Egg Count Per 100 to 200 cc* of Soil                               | Cyst Count | Population Level | Management Strategies  |
| 0-40   | 0          | None Detected    | Continue to monitor field after two crops of soybean   |
| 40-200   | 1          | Trace            | May begin to measure some yield loss in susceptible varieties at or above 200 eggs/200 cc.   |
| 200-2000   | 1-4        | Low              | Plant SCN resistant variety or rotate to a non-host crop. At or above 2000 eggs, some yield loss may result on SCN resistant lines.  |
| 2000-5000  | 3-20       | Moderate         | Rotate to a non-host crop next year and return with SCN resistant soybeans the following year. 16 to 18 bu/A losses have been recorded in Ohio on susceptible varieties when grown at these populations. |
| 5000 and over  | 15-20+     | High             | Rotate to a non-host crop for two to three years, then sample the soil to determine nematode populations before planting SCN resistant varieties.  |
| *100 to 200 cc = approximately ½ to 1 cup                          |            |                  |  |

Table 1. SCN management

## ***Pasture, Rangeland, Forage (PRF) Enrollment Open- A Risk Management Tool Cattlemen Should Consider***

By: [Mike Estadt](#), OSU Extension Educator, Pickaway County

Source: <https://u.osu.edu/beef/2021/11/03/pasture-rangeland-forage-prf-enrollment-open-a-risk-management-tool-that-cattlemen-should-consider/>

Cattlemen and hay producers have an opportunity to enroll in an area-based insurance program that protects them against yield losses caused by low precipitation. This management tool is designed to give the policy holder the ability to help cover the replacement feed costs when a loss of forage for grazing or harvested for hay occurs because of the lack of rainfall.

Area-based means that indemnity payments will not be based upon individual producer's experience, rather, payments will be based upon a grid's deviation from historically normal rainfall. A producer will have to make several choices including the coverage level of forage production they wish to insure, the rainfall index (months of precipitation), the productivity level of the field or fields they wish to enroll and the number of acres they wish to insure.

Let us explore these choices in a bit of detail. It is important that the producer select the correct grid for the field or fields that they wish to insure against loss. Each grid is roughly a 17 square mile area equal to 0.25 degrees in latitude by 0.25 degrees in longitude. The pin in Figure 1 is the Eastern Research Station in Noble County. Each grid is given a specific number code. The grids do not follow state or county lines that other USDA crop insurance programs are based upon. (Figure 1.) The grid locator tool is available at: <https://prodwebnlb.rma.usda.gov/apps/prf>

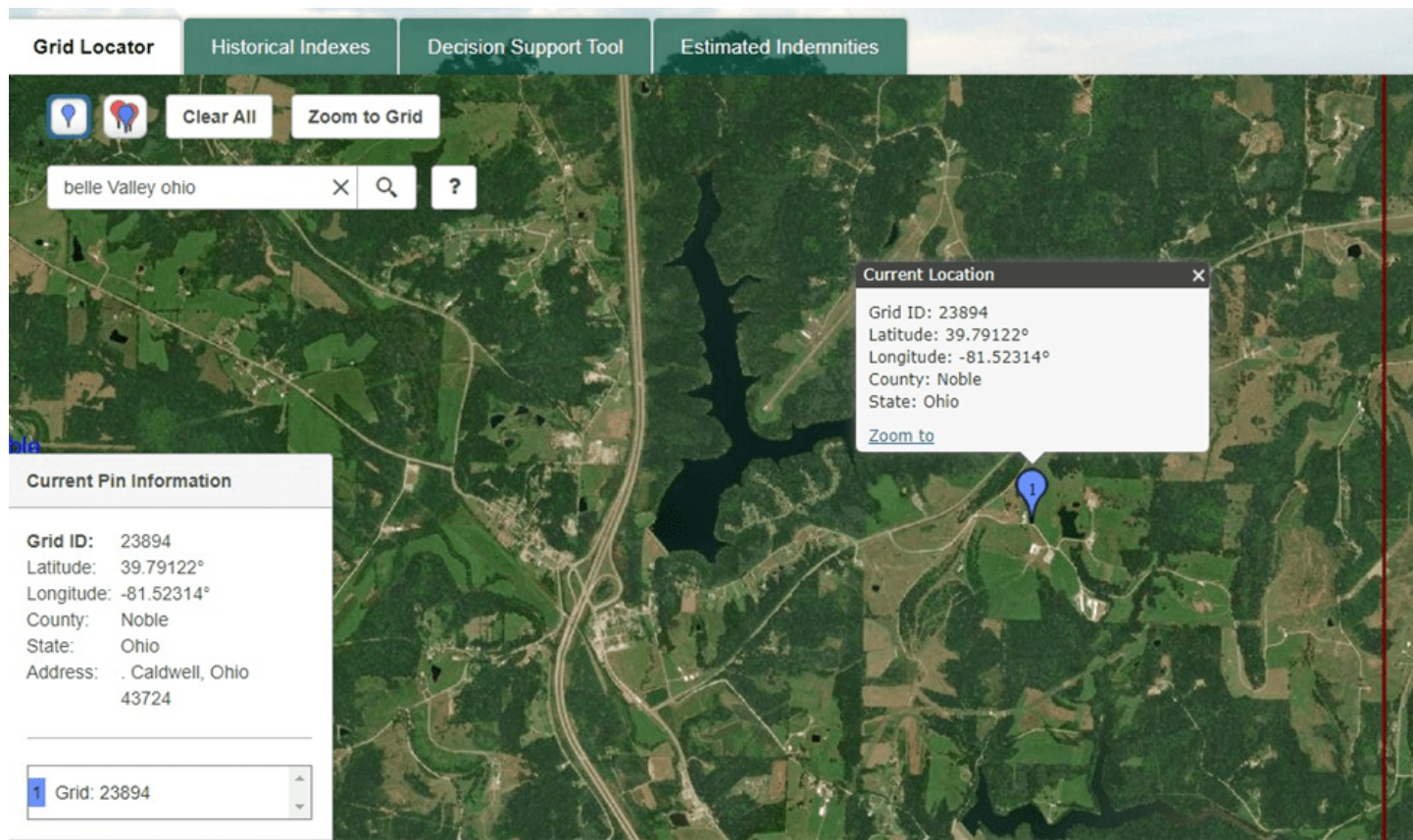


Figure 1. Grid locator will enable producers to identify their field locations for their insurance policy. The pin in this example is the Eastern Research Station located in Noble County.

Producers then must select two, two-month indexes to insure against. These indexes have been calculated using rainfall data based upon NOAA data from 1948 to the present. Rainfall data will then be collected by the National Oceanic and Atmospheric Administration Climate Prediction Center for the entire grid and not on rainfall that occurs at the farm level. This may result in your farm experiencing a loss of production but not the grid or vice versa. Producers should critically analyze the historical data for the grids they are selecting as this is probably the most critical element of the risk tool.

**Productivity Factor.** The producer may customize their PRF insurance policy based upon each individual farm. The selection factors range between 60% and 150% of the county-based value of production. Grazers and hay producers should match the amount of protection that best represents their specific grazing or hay operation. For example, a farmer with well fertilized hay or pasture ground may select a productivity factor greater than 100 percent to increase the level of coverage. Increases the productivity will increase the premium cost.

**Coverage Level.** A producer will select the coverage level between 70% and 90% in 5% increments. The coverage level establishes the rainfall deviation from the index when insurance pays an indemnity. The government will pay varying amounts of the premium based upon the level chosen. How is a payment triggered? When the interpolated precipitation falls below average for the index interval, it

triggers a loss payment to all producers who have signed up for the program in the grid that are covered under this interval. Losses are calculated based on whether the current year's precipitation in a grid has deviated from normal compared to the historical normal precipitation in the same grid, for the same period. Losses are not based on a single farm or a specific weather station in a general area. For example, if a farmer selected 90 percent coverage, then the final grid index must be below 90 for that two-month interval to trigger an indemnity payment.

**Decision Support Tool.** A [decision support tool](#) is available to assist growers assess the different possible outcomes based upon historical grid index rainfall and various levels of coverage. Producers can select their grid location and compare various protection levels, premium payments, subsidies, index values and indemnities that would have been paid for any historical year. (Figure 2).

Intended Use

Grazing

Irrigation Practice

Please Select

Organic Practice

Please Select

Coverage Level

85%

Productivity Factor

100%

Insurable Interest

100%

Insured Acres

200

Sample Year

2016

County Base Value

\$57.00

Dollar Amount of Protection

\$48.45

Total Insured Acres

200

Total Policy Protection

\$9,690

Subsidy Level

55.0%

Maximum Percent of Value per Index Interval

60.0%

Index Interval

Percent of Value (%)

Policy Protection Per Unit

Premium Rate Per \$100

Total Premium

Premium Subsidy

Producer Premium

Actual Index Value

Estimated Indemnity

|          |     |         |       |        |        |        |       |         |
|----------|-----|---------|-------|--------|--------|--------|-------|---------|
| Jan-Feb  | N/A | \$0     | 11.15 | \$0    | \$0    | \$0    | 66.7  | \$0     |
| Feb-Mar  | N/A | \$0     | 10.05 | \$0    | \$0    | \$0    | 115.9 | \$0     |
| Mar-Apr  | N/A | \$0     | 8.89  | \$0    | \$0    | \$0    | 110.1 | \$0     |
| Apr-May  | N/A | \$0     | 7.85  | \$0    | \$0    | \$0    | 85.6  | \$0     |
| May-Jun  | N/A | \$0     | 10.28 | \$0    | \$0    | \$0    | 64.9  | \$0     |
| Jun-Jul  | 60  | \$5,814 | 9.24  | \$537  | \$295  | \$242  | 49.5  | \$2,428 |
| Jul-Aug  | N/A | \$0     | 8.98  | \$0    | \$0    | \$0    | 71.9  | \$0     |
| Aug-Sep  | 40  | \$3,876 | 11.68 | \$453  | \$249  | \$204  | 103.0 | \$0     |
| Sep-Oct  | N/A | \$0     | 14.21 | \$0    | \$0    | \$0    | 99.0  | \$0     |
| Oct-Nov  | N/A | \$0     | 9.65  | \$0    | \$0    | \$0    | 72.7  | \$0     |
| Nov-Dec  | N/A | \$0     | 8.67  | \$0    | \$0    | \$0    | 99.6  | \$0     |
| Per Acre | N/A | N/A     | N/A   | \$4.95 | \$2.72 | \$2.23 | N/A   | \$12.14 |
| Total    | 200 | \$9,690 | N/A   | \$990  | \$544  | \$446  | N/A   | \$2,428 |

Calculate

This tool is using insurance data from 2022.

This tool is for illustration purposes only. Your actual information may differ.

Figure 2. Producers can use the decision tool website to compare of PRF insurance would have performed given different scenarios of coverage, index months insured and historical rainfall.

**Pasture Example.** Let assume the 200 acres of pastures in Noble County, Ohio, grid location 23894, Elected 90% coverage, 140% productivity factor. The selected index months of June-July (60%) and April-May(40%). Table 1. demonstrates what the expected indemnity payment would have been 2016, a dry year in Noble County. A premium of \$3.79 per acre would have resulted in an indemnity of \$20.80.

| Index interval | Percent of Value | Producer Premium | Index Value | Indemnity per acre |
|----------------|------------------|------------------|-------------|--------------------|
| April-May      | 40               | \$1.41           | 85.6        | \$1.41             |
| June-July      | 60               | \$2.38           | 49.5        | \$19.39            |
| Total          | 100              | \$3.79           | NA          | \$20.80            |



Table 1. PRF insurance, grazing example, per acre.

For a more detailed explanation of the Pasture, Rangeland and Forage protection program there is a comprehensive fact sheet at <https://www.rma.usda.gov/en/News-Room/Frequently-Asked-Questions/Pasture-Rangeland-Forage>

For more information about this insurance tool, contact a crop insurance agent. Crop insurance agents are the best source of information and can sit down with you and run through the decision tool to select the best options for your farming operation. Deadline for enrollment is December 1, 2021.

## ***FAQs about Cyanide or “Prussic Acid Poisoning in Ruminants***

By: Dr. Michelle Arnold, UK Veterinary Diagnostic Laboratory

Source: <https://u.osu.edu/beef/2021/11/03/faqs-about-cyanide-or-prussic-acid-poisoning-in-ruminants/>

When sorghum species including Johnsongrass, sorghum, sudan grass and hybrid sorghum-sudan is frosted, the plant cells are damaged and the plant enzymes can reach dhurrin and release cyanide gas.

Usually within the month of October when the first frosts are expected in KY, the questions begin regarding the risk of prussic acid poisoning from Johnsongrass (*Sorghum halepense*) after frost and when is it “safe to graze again”. Prussic acid, cyanide, or hydrocyanic acid are all terms relating to the same toxic substance. Hydrogen cyanide was first isolated from a blue dye (Prussian blue) and because of its acidic nature, it became known by the common name “prussic acid”. No matter which name is used, cyanide is one of the most rapid and deadly toxins that affects cattle.



**Where does the cyanide come from in a plant?** Certain plants contain compounds called “cyanogenic glycosides” which are not toxic by themselves but only when the plant is damaged. These cyanogenic glycosides and the enzymes necessary to convert them to free cyanide gas are separated in different locations within the plant cells. Sorghum species including Johnsongrass, sorghum, sudan grass and hybrid sorghum-sudan contain the cyanogenic glycoside “dhurrin”. When plant cells are damaged, the plant enzymes can reach dhurrin and cleave it, releasing cyanide gas (abbreviated as HCN). Dhurrin concentrations are highest in the leaves, particularly new growth. Peak concentrations occur in the first week after germination, declining markedly once the plant reaches approximately 2 ft in height. Regrowth (for example, after a light frost) contains extremely high dhurrin concentrations.

**Why is Johnsongrass and other Sorghum species only risky at certain times of the season but safe in others?** The cyanogenic glycosides are used by the plant as protection from grazing animals, insects, and parasites when the plant is most vulnerable. The cyanogenic “potential” of plants is affected by the type (species and variety) of the plant, weather, soil fertility and stage of plant growth. Cyanide poisoning of livestock has been associated with Sorghum species including johnsongrass, sorghum-sudangrass, and other forage sorghum; Prunus species (e.g., wild cherry, black cherry, and chokecherry); elderberry (*Sambucus* spp); serviceberry (*Amelanchier alnifolia*); and less frequently arrowgrass (*Triglochin* spp), white clover (*Trifolium repens*), birdsfoot trefoil (*Lotus* spp); and many others.

Certain environmental conditions reduce protein synthesis within a plant but nitrate conversion to amino acids continues and these form the “building blocks” of cyanogenic glycosides. Obviously factors that damage the plant such as crushing, wilting, freezing, herbicide treatment, drought, insects, and plant disease will reduce growth and protein synthesis. However, cool, cloudy days and moist growing conditions, high nitrogen fertilization, high soil nitrogen: phosphorus ratio, and low soil sulfur can also increase the cyanogenic potential. Application of herbicides such as 2,4-D have been shown to increase the cyanogenic potential of plants and

potentially increases palatability.

Highest cyanide potential occurs when these plants are growing rapidly after a period of retarded growth such as after drought or frost. The early stages of plant growth, especially young, rapidly growing areas and areas of regrowth after cutting also contain high levels of cyanogenic glycosides. The risk of poisoning decreases as forages mature. Leaf blades are higher risk than leaf sheaths or stems, upper leaves are higher risk than older leaves, and seed heads are considered low risk.

**How much cyanide is considered dangerous?** The lethal dose of cyanide is in the range of 2 to 2.5 mg/kg body weight. Forages can be tested for cyanide content. Hay, green chop silage or growing plants containing >220 ppm cyanide on a wet weight basis are very dangerous and <100 ppm is considered safe. On a dry weight basis, >750 ppm is considered hazardous, < 500 ppm is considered safe and suspect in between.

Conflicting information is available with regards to risk of cyanide in hay. A study from 2012 investigating methods to prepare sorghum for cyanogenic analysis found that whole leaves or entire plants can be harvested and dried then analyzed later, so air drying plants did not decrease dhurrin concentrations during storage. However, the enzyme beta-glucosidase which converts dhurrin to cyanide was significantly decreased during drying. Bottom line- hay is rarely hazardous if adequately cured but should be tested if the cyanide risk was high when cut. Ensiling plants will significantly reduce the cyanogenic glycoside content.

**How does cyanide attack the animal's system?** As ruminants consume these plant materials, hydrogen cyanide gas that is released in the rumen is quickly absorbed into the bloodstream. In addition, the rumen microflora contain enzymes that, in the presence of water, are also capable of converting cyanogenic glycosides in plants to free cyanide gas. Under conditions of low-level exposure, cattle can detoxify cyanide to thiocyanate which is excreted in the urine. If large quantities of cyanide are absorbed rapidly enough, the body's detoxification mechanisms are overwhelmed, and the animal soon dies.

Rumen pH is an important factor in determining rate and amount of HCN released in the rumen. The enzymes are more active at a higher pH of 6.5-7 so cattle on grass or hay diets are at higher risk than those on grain diets. Consumption of water, either before or after grazing, also increases the HCN risk. Animals that are most at risk are hungry and/or have not had time to adapt to these plants as they may tolerate higher amounts over time.

**What does an animal with cyanide poisoning look like?** Affected animals may begin showing signs of poisoning within 15-20 minutes and rarely survive more than 1-2 hours after consuming lethal quantities of cyanogenic plants. Death may be sudden without symptoms. If seen alive, cattle may exhibit rapid labored breathing, frothing at the mouth, dilated pupils, muscle tremors, and staggering prior to death. There may be a "bitter almond" smell to the breath but the ability to detect this smell is genetically determined in people, so this is an unreliable sign. The mucous membranes are bright red in color due to oxygen saturation of the hemoglobin but may become more cyanotic (blue) at the end of life.

**How is cyanide poisoning diagnosed?** History, clinical signs, and detection of cyanide in rumen contents support a diagnosis of cyanide poisoning. Cyanide is rapidly lost from animal tissues unless collected within a few hours of death and sealed in airtight containers. Liver, muscle (heart, especially the ventricular myocardium), whole blood, and rumen contents should be collected in airtight containers before shipment to a laboratory capable of performing cyanide analysis. Personal protective equipment should be worn when gathering samples from the animal. Minimal lethal blood concentrations are approximately 3 mcg/ml or less. Perhaps most important in the diagnosis of cyanide poisoning is to identify plants in the area accessible to the animals and determine if they are likely to contain cyanogenic glycosides. Cyanide concentration determinations in suspect plants can be performed if samples are collected and immediately sent on ice overnight to a diagnostic laboratory. Some diagnostic laboratories prefer samples to be frozen immediately after collection and prior to shipment.

**Is there an effective treatment?** Treatment can be attempted if affected animals are discovered quickly, but often animals are found dead. Contact a veterinarian immediately if cyanide poisoning is suspected. The

intravenous administration of sodium thiosulfate by a veterinarian is an effective treatment for cyanide poisoning although this compound has been difficult to find in recent years. The dose can be repeated after a few minutes if the animal does not respond. Administering 0.5-1.0 liter of a diluted vinegar solution (one gallon of vinegar diluted in 3 to 5 gallons of water) via stomach tube can lower rumen pH, reducing the production of hydrogen cyanide, however, stress of handling may exacerbate signs and possibly lead to the animal's death. Most animals that survive treatment recover fully.

### What can be done to prevent cyanide poisoning in cattle?

1. Graze sorghum, sorghum crosses, or Johnsongrass plants only when they are at least 18-24 inches tall. Young rapidly growing plants or regrowth have the highest concentrations of cyanogenic glycosides, especially in the newest leaves and tender tips. Do not graze plants with young tillers. Do not turn out hungry animals in high-risk pastures because they may consume forage too rapidly to detoxify the cyanide released in the rumen. Animals should be turned out to new pasture later in the day as potential for cyanide release is highest in the morning.
2. Do not graze plants during drought periods when growth is severely reduced or the plant is wilted or twisted. Drought increases the chance for cyanide because slowed growth and the inability of the plant to mature favors the formation of cyanogenic compounds in the leaves. Do not graze sorghums after drought until growth has resumed for a minimum of 4-5 days after rainfall.
3. Do not graze potentially hazardous forages when frost is likely (including at night). Frost allows rapid conversion to hydrogen cyanide within the plant. Do not graze for at least two weeks after a non-killing (>28 degrees) frost. Grazing after a light frost is extremely dangerous and it may be several weeks before the cyanide risk subsides. Do not graze after a killing frost until plant material is completely dry and brown (the toxin is usually dissipated within 72 hours).
4. Do not allow access to wild cherry leaves. After storms or before turnout to a new pasture, always check for and remove fallen cherry tree limbs.
5. If high cyanide is suspected in forages, do not feed as green chop. If cut for hay, allow to dry completely before baling. Allow slow and thorough drying because toxicity can be retained in cool or moist weather. Delay feeding silage 6 to 8 weeks following ensiling. Sorghum hay and silage usually lose > 50% of prussic acid during curing and ensiling. However, these feeds should be analyzed before use whenever the forage likely had an extremely high content prior to cutting.
6. Forage species and varieties may be selected for low cyanide potential. There are wide differences among plant varieties. Some of the sudangrasses, such as Piper, are low in cyanide.
7. Test any suspect forages before allowing animal access. A rapid field test is available that can provide on-site results. Contact your county Agricultural Extension Agent for further information.

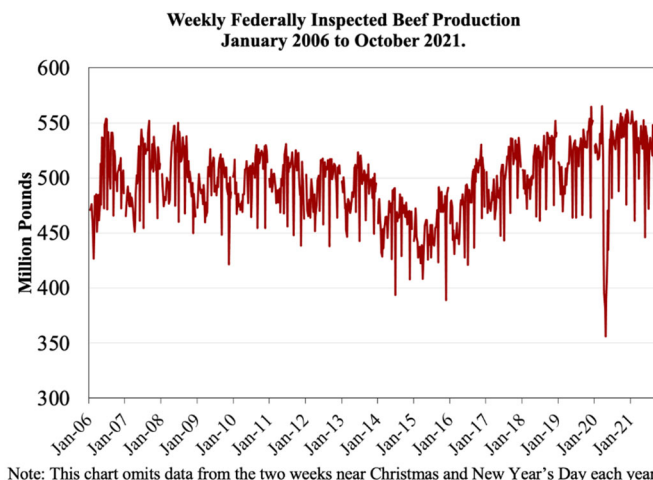
## Beef Production Totals

By: Josh Maples, Assistant Professor & Extension Economist, Department of Agricultural Economics, Mississippi State University

Source: <https://u.osu.edu/beef/2021/11/03/beef-production-totals/>

2021 beef production is expected to be an all-time high. Current [USDA forecasts](#) are for commercial beef production to total 27.8 billion pounds during 2021 which would be a weekly average of about 535 million pounds. This would be an approximately 2.4 percent increase above the 2020 total which is the current record.

The chart above shows weekly federally inspected beef production totals over the past 15 years. This chart is messy because it uses weekly data, but I chose this one because it shows the seasonal patterns within a year. There are also low points in the data each year due to weeks with holidays. I've





omitted the two weeks near Christmas and New Year's Day from the chart above, but there are still other holidays throughout the year that impact weekly beef production totals. Also immediately obvious are the low weeks during the spring of 2020 due to pandemic disruptions.

The chart shows beef production has increased steadily since 2015 which was the lowest annual total since 1993 at 23.7 billion pounds. The weekly average in 2015 was 456 million pounds. 2021 is on track to be about 17 percent above that 2015 low point. The major difference between the two years is the number of cattle processed. Through the first 43 weeks of 2021, there have been about 4 million more cattle slaughtered than during first 43 weeks of 2015. This total includes steers, heifers, cows, and bulls.

2015 was a transition year for beef production and the cattle cycle. The U.S. calf crop bottomed-out in 2014 before beginning a string of annual increases through 2018. Beef production has increased each year since 2015 but is expected to decline in 2022 as [cattle supplies tighten](#). Calf crop totals were 2.0 and 1.3 percent lower in 2019 and 2020. The mid-year USDA calf crop estimate for 2021 was a 0.1 percent annual decline. 2021 could likely be another transition year as the last of the annual beef production increases for this cycle.

## ***Scoring Pastures Yearly Can Help Identify Trends***

Tony Nye, OSU Extension Educator ANR, Clinton County

(Previously published in [Farm & Dairy: October 28, 2021](#))

Source: <https://u.osu.edu/sheep/2021/11/02/scoring-pastures-yearly-can-help-identify-trends/>

A well-managed pasture is both productive and sustainable. Important decisions such as livestock feed inventory, forage stand replanting, fertility needs, weed control, etc., all hinge on what we see in the pasture. That is why an objective evaluation of a pasture is a valuable tool.

Pasture condition scoring is a systematic way to check how well a pasture is managed and performing. If the pasture is located on the proper site and well managed, it will have a good to excellent overall pasture condition score.

By rating key indicators and causative factors common to all pastures, pasture condition can be evaluated and the primary reasons for a low condition score identified.

Conditions that can lead to one or more pasture resource concerns could include poor plant growth, weedy species invasion, poor animal performance, visible soil loss, increased, runoff and impaired water quality. Pasture condition scoring, to be most useful, should occur several times a year during key critical management periods throughout the grazing season.



Scoring should be performed at the following times:

- at the start before placing livestock on pasture,
- at peak forage supply periods,
- at low forage supply periods,
- as plant stress appears, and
- near the end of the grazing season to help decide when to remove livestock.

In addition, pastures used for year-round grazing benefit from pasture condition scoring: going into the winter season,

- late in winter, and
- during thaws or wet periods.
- Pasture condition scoring can be useful in deciding when to move livestock or planning other

management actions. It sorts out which improvements are most likely to improve pasture condition or livestock performance.

There are several factors that get included in the evaluation of pastures. The more obvious would include the following:

#### Percent desirable plants

This determines if the pasture has the kind of plants your livestock will graze readily and do well on.

#### Plant cover

This determines the percentage of soil surface covered by plants. A dense stand that is well managed and properly grazed will capture lots of sunlight; ensuring for a thick stand with lots of plants will allow for best forage growth and for high animal intake. Bare open spots allow for weeds to compete and lessor forages to develop or could lead to soil erosion in some circumstances.

#### Plant residue

This can be a positive or a negative to the quality of pasture and plant life. Positively it will add to ground coverage to prevent soil erosion and add organic matter back to the soil. On the negative side, too much residue can lead to thatch issues, reduced feed value of the forage and animal intake, and can inhibit new plant growth. A rule of thumb is to not have more than 25% of the standing forage dead or dying.

#### Plant diversity

This is what we all love but do not always achieve. A pasture with high diversity tends to be an older permanent pasture that is moderately grazed. A more diverse plant population is generally more productive through all growing seasons.

Low species diversity causes season-long pastures to be less reliable supplies of forages during the grazing season. An example would be cool season grasses that go dormant and/or become less productive during the hotter, drier months of summer.

#### Plant vigor

Desirable species should be healthy and growing at their potential for the season when rated. If not, they will be replaced by weeds and low quality forage plants. If plant growth conditions really suffer, bare soil will begin to appear. Some things to consider when rating plant vigor are color, size of plants, rate of regrowth following harvest, and productivity.

#### Soil fertility

Adequate fertility is very important to plant vigor. Soil testing is an important procedure to determine nutrient status and nutrient needs. During the growing season, plant tissue analysis can also determine nutrient availability to growing plants.

#### Soil pH

This has a big impact on nutrient availability. Correcting soil pH is usually the first step to correcting soil fertility.

#### Insect and disease pressure

Look for signs of insect and disease pressure on leaves, stem, and roots.

#### Climatic stress

All weather extremes such as drought, heat, and excess water threaten plant vigor.

#### Livestock concentration areas

This refers to how much area of your pasture is taken by areas where your animals congregate and frequent such as for water, mineral or salt, shelter, shade, or feeding.

## Uniformity

How uniform are the animals grazing throughout the pasture? Spotty grazing can be an indication of lesser forages influenced by nutritional value, palatability, and how long the animals may stay in the pasture.

Other items to evaluate for would be compaction, erosion throughout the pastures (sheet, rill, or gully), and erosion near and around stream banks if present. Percent of legumes are important as a source of nitrogen for pastures and can improve forage quality. Legumes should make up at least 20% of the forages on a dry forage basis. Nitrogen supplementation is necessary if legumes can not supply enough for optimum forage production.

## Severity of use

Grazing management is critical to productive pastures. Overstocking and understocking of pastures can have impact to pastures. Overstocking leads to close overgrazing of plants to causes loss of plant vigor and plant production. Understocking can promote selective grazing thus causing excessive residue built up in areas of the pasture.

It is easy to become overwhelmed when managing a grazing system. Don't try to make all of the changes at one time but prioritize forage and livestock management changes by setting short and long-term goals. Visit with accomplished pasture managers. Visualize what you expect to see before you get out and start your assessment. It is important to remember pasture condition varies throughout the year in response to management and climate.

Scoring pastures yearly and during the same periods each year can help to identify trends and help you make the necessary management decisions.

USDA NRCS has a great Pasture Condition Score Sheet that can be utilized. Google "pasture condition scoring" or go to [nrcs.usda.gov](https://nrcs.usda.gov) and search "pasture score." This can also be accessed at: [file:///C:/Users/marrison.2/Downloads/National Pasture Condition Scoring Guide and Score Sheet - January 2020.pdf](file:///C:/Users/marrison.2/Downloads/National%20Pasture%20Condition%20Scoring%20Guide%20and%20Score%20Sheet%20-%20January%202020.pdf)

## ***Small Ruminant Imports: Friend or Foe?***

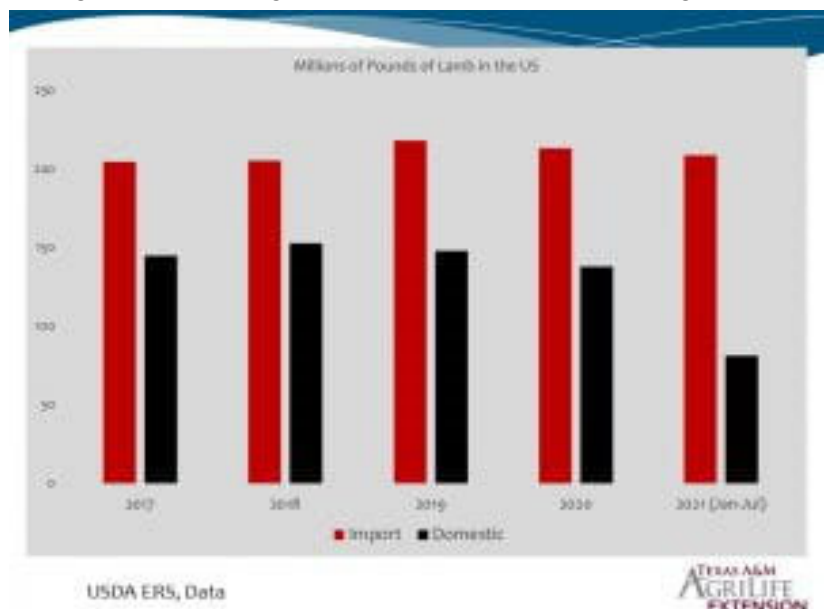
By: Dr. Reid Redden, Associate Professor and Extension Sheep and Goat Specialist, Texas A&M AgriLife Extension Service

Source: <https://u.osu.edu/sheep/2021/11/02/small-ruminant-imports-friend-or-foe/>

By now you know that I am a strong proponent of eating and promoting the consumption of lamb and goat meat. Bottom line, it is delicious, but the reasons to include lamb or goat in your meal rotation do not end there. It is nutritious and versatile in the ways it can be prepared. And as producers I believe it is important for us to be advocates of our own products.

When we cook and eat lamb and goat ourselves, we also become better advocates for it. I can't count the number of times, I've heard "I only like lamb when Reid cooks it." Over time, the fear of something different and we gain another advocate. Be Patient!

As a routine customer, I'm always inquiring about the origin of the product. Often, they are sourced from another country. Imported lamb is perceived by many consumers as exclusive





and superior products. In reality, most imported products are purchased by American restaurants or grocers because of price and availability. Currently, domestic products are sold by wholesalers at roughly double the price of imported products.

Over the last decade, half the lamb and a third of the goat meat consumed in the US are imported. So far in 2021, lamb imports are nearly double US production (Figure provided above). The top two countries that provide most of the lamb and goat meat are Australia and New Zealand, but that might be about to change. In September of 2020, the Biden administration lifted a 30-year-old ban on British lamb and mutton from being imported into the US. The ban was originally created in response to the first outbreaks of BSE, commonly known as mad cow disease. With U.S. markets off the table until now, most of their exports were going to Europe. While it is unclear how this will affect American producers, one silver lining is that lifting of the ban also allows for the import of United Kingdom (UK) sheep genetics, such as semen and embryos.

The UK is the third largest exporter of sheep meats globally, behind Australia and New Zealand. I had the privilege of touring the UK sheep industry in the fall of 2019. During this tour, we learned that the British export roughly half of their lamb during peak production and import a similar equivalent of lamb from New Zealand during the off season. This “trade off” seems to work given that the UK and New Zealand have similar production systems but are located in different hemispheres.

I’d anticipate that British lamb will likely be marketed at similar value to other imported lamb products. In theory, more supply will bring down lamb prices at the food counter and inevitably reduce value of lambs at the farm gate. But I’ve come to realize that the US lamb market is complex and difficult to project.

The US lamb industry grossly undersupplies the demand and it is unlikely that we will grow to a level to meet this demand any time in the near future. While I’d like to see our industry expand, it is more likely that we will see a further reduction in overall lamb and goat production. Both from farmers exiting the industry and operations that reduce flock or herd size. Furthermore, the rapidly growing non-traditional market prefers to harvest lambs at 25%-50% lighter weights than conventional markets. Harvesting lighter lambs results in even lower volume of domestic lamb production. To keep a supply of lamb for the growing American appetite for lamb, we are likely going to need more imports.

In my opinion, the negative impact of imports are due to a discrepancy in value. Imports tend to be cheaper for a variety of reasons. First, emerging domestic demand has driven up the market for lambs and goats above global prices. This is good for sheep farmers but it also creates opportunity for imports to gain a stronger foothold in traditional channels. Second, the imports tend to have lower costs of production due to limited predation, access to more animal health products, economy of scale, government support programs, etc.

The goat market isn’t as affected by imports as they lack a sizable volume of goat meat for export. Goat meat imports also come from Australia and New Zealand; however, their goats tend to be feral or very extensively managed. Based on my impression, export demand has impacted their national herd size and further long-term exports appears to be unsustainable. As an example, I have a friend in Australia that is proud to have successfully exterminated goats from their farm, as if they were pests.

In summary, the US lamb and goat industry is very much influenced by global trade. We need imported product to satisfy US demand and continue to grow the American appetite for lamb and goat meat. However, imports have a competitive advantage due a lower cost of production than US sheep and goat producers. I will be very interested to see how the markets react to future imports. What is still in our control though, is how we can be better advocates for lamb and goat meat. We’ll just have to take a page from Blue Bell’s playbook and “eat all we can and sell the rest.”



## **Fall Reflections**

By: David Marrison, OSU Extension

Originally published in The Beacon Newspaper, October 28, 2021

Hello Coshocton County! We were very pleased about the response to the 50th Coshocton County Fall Foliage & Farm Tour held on October 16-17 which featured the southeastern townships of Franklin, Linton and Lafayette.

The cooler weather allowed for a great turn-out of nearly 1,400 attendees from 7 states and from 29 of Ohio's 88 counties. What a great way to see the back roads of Coshocton County and to visit some incredible farm operations. Thank you to everyone who made this year's tour a success.

Fall also signifies the end of another growing season. The words of Solomon ring true when he wrote for everything there is a season and a time for every matter. Our beautiful October weather has allowed farmers to get a good jump on soybean and corn harvest. But holding true to what usually happens as we move deeper into fall, cooler temperatures and a greater probability of rain will most likely prevail as we work to complete harvest. Let's hope for minimal rain so our farmers can complete harvest in a timely manner.

Our fall harvest will be followed by a long winter's rest before the seeds of this year's harvest bring life back to our fields. In a sense, farm managers can mimic nature. We can harvest the lessons learned from 2021, take a deep breath during winter, and then chart our 2022 business strategies.

As you plan for 2022, I would like to share details about OSU Extension's newly released 2022 crop budgets, remind you about our custom farm rates publication, and encourage you to think ahead for continued labor and supply chain shortages.

**2022 Crop Budgets-** Barry Ward from OSU Extension recently released his 2022 crop budget forecasts. While crop prices are projected to remain strong, higher fertilizer, seed, chemical, fuel, machinery, and repair costs are expected for 2022. Factored together 2022 profit margins are predicated to be much tighter than we had in 2021.

For any producer who has not received the 2022 budget estimates for corn, soybean, and wheat, they can be found at: <https://farmoffice.osu.edu/farm-mgt-tools/farm-budgets> In addition to these row crop budgets, there are newly updated forage budgets. These include Alfalfa Hay, Alfalfa Haylage and Corn Silage. Also recently updated are two Market Beef Budgets which include Market Beef Budget (Self-Fed) and Market Beef Budget (Bunk-Fed).

**Ohio Farm Custom Rates-** One of OSU Extension's most popular bulletins is the Ohio Farm Custom Rates Bulletin. This guide helps farmers and landowners alike as they negotiate the price to hire farming tasks and operations.

For instance, if my combine is giving me fits during this year's harvest what price should I expect a neighboring farmer to charge to harvest my corn or soybeans. Other rates which can be found in the bulletin include the expected costs for hay harvest activities, brush-hogging a pasture, spreading lime and/or fertilizer, and much, much more. The Ohio Farm Custom Rates can also be accessed at: <https://farmoffice.osu.edu/farm-mgt-tools/custom-rates-and-machinery-costs>

**Plan B, C, D or maybe E-** Clear back to last spring, we have been discussing the lingering impacts of the coronavirus pandemic with regards to labor and supply chain issues. Time has not healed these woes as there are still major supply chain shortages with regards to machinery parts, herbicides, and fertilizer. The labor shortage is also impacting farmers especially finding part time labor to assist with corn and soybean harvest.

Looking forward to next year, our advice is to use any rainy days to look over your equipment. I recently heard Dr. John Fulton speak on this issue in Tuscarawas County and his advice was to make sure you have already gone over your planter and tillage equipment to see what parts you need and get them ordered.

Now more than ever, managers will have to develop contingency plans for almost every aspect of their operation. How will work get done if employees get sick or are in quarantine? What will you do when equipment breaks down and no parts are available? If there is a fertilizer or crop protection or weed chemical shortage next spring, what will you do? How will you respond to other slow-downs in the supply chain?

**Closing thoughts-** I hope each of you glean as much as you can from another crazy year and take time to make plans for 2022. I would like to share a quote from Brandon Jenner who stated, “Sometimes we let life guide us, and other times we take life by the horns. But one thing is for sure: no matter how organized we are, or how well we plan, we can always expect the unexpected.” Have a good and safe day!

### ***Farmland and Farmland Owner Tax Webinar***

Source: <https://farmoffice.osu.edu/tax/farmer-and-farmland-owner-income-tax-webinar>

Are you a farmer or farmland owner wanting to learn more about the recent income tax law changes and proposals? If so, join us for this webinar. If so, please plan to attend the Farmer and Farmland Owner Tax Webinar on Thursday, December 9, 2021 from 6:30 - 8:30 p.m.

This webinar will focus on issues related to farmer and farmland owner tax returns, COVID-19-related legislation introduced in 2020 and 2021 and federal legislative proposals and possible tax changes that may impact the farm sector.

This two-hour program will be presented in a live webinar format via Zoom by OSU Extension Educators Barry Ward and David Marrison along with Purdue faculty member Dr. Michael Langemeier. Individuals who operate farms, own property, or are involved with renting farmland should participate.

Topics to be discussed during the webinar include (subject to change based on tax law change):

- Tax Planning for Higher Income Years
- Sale of Farm Assets
- Tax Issues related to COVID-related legislation
- Federal Legislative Proposals and Possible Tax Impacts
- Like Kind Exchanges (farm machinery and equipment no longer are eligible for this provision) how this change may affect state income tax, Social Security credits and eventual payments
- New 1099-Misc and 1099-NEC

The registration fee is \$35 per person. Additional details can be found at:

<https://farmoffice.osu.edu/tax/income-tax-schools> For more information, contact Julie Strawser at [strawser.35@osu.edu](mailto:strawser.35@osu.edu) or call the OSU Extension Farm Office at 614-292-2433.



### ***BQA Re-certification Sessions Planned***

The Coshocton County Extension office will be offering a series of **Beef Quality Assurance (BQA)** re-certification meetings to help producers renew their BQA certification. These sessions will be held in Room 145 at the Coshocton County Services Building located at 724 South 7<sup>th</sup> Street in Coshocton County.

Producers can choose the session which best fits their schedule. Sessions will be held on: November 3, December 1 & 14. Each will be held from 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.

If you cannot attend one of our local sessions, our friends down in Muskingum County will also be holding a Beef Quality Assurance class on November 16 beginning at 7:00 p.m. at the Muskingum Livestock Auction in Zanesville. No pre-registration is required.

Online certification and recertification is also available and can be completed anytime at <https://www.bqa.org/beef-quality-assurance-certification/online-certifications>.

