Hello Northeast Ohio Counties!

We were making great progress on harvest before the rain moved in. Roughly 90% of the soybeans and 30% of the corn has been harvested in our region. Statewide corn yields are above average and beans about average, and that seems to be holding true for NE Ohio as well.

If you’re planning to head south this winter we have a pesticide recertification session on Nov. 4th with spaces still available. See the flyer at the end of the newsletter.

Have a great week!
Low Vomitoxin Levels in Corn but Rain and Delayed Harvest Could Change this Picture

By Pierce Paul, Wanderson B. Moraes, Marian Luis


After walking more than 40 corn fields and sampling more than 3,500 ears, we believe that Gibberella ear rot (GER), and consequently, vomitoxin levels likely will be much lower this year than they were last fall. This is because conditions during the weeks after silking were considerably less favorable for the disease to develop and the toxin to contaminate grain this year than last year. However, as is often the case, there were a few exceptions. We found low levels of GER in (sentinel-type) plots and research fields deliberately planted with hybrids that are highly susceptible to the disease, and these plots/fields will likely yield grain with some level of vomitoxin contamination (we are still processing our samples). Averaged across 10 locations, the incidence of GER on a susceptible hybrid ranged from 10 to 20%, i.e., 1 to 2 out of every 10 ears had visual symptoms of GER, and on average, less than 5% of the surface area of affected ears showed symptoms of the disease.

GER tends to be most severe, and the crop is usually as greater risk for vomitoxin contamination, when infections occur early (during silking), before the ears mature and grain dries down, and conditions are warm and wet during the first three weeks after silking. However, it is not uncommon for grain to become contaminated with vomitoxin as a result of infections occurring late in the season. This is particularly true when harvest is delayed by frequent rainfall, hybrids are susceptible, and ears dry-down in an upright position. Water collects at the base of upright ears, creating conditions suitable for the fungus to enter and infect the ear from the base upwards.

Fig 1. Gibberella ear rot developing from the tip down
It is not always possible to tell which fields were planted with GER susceptible hybrids, because this information is not readily available in all seed catalogs. However, it should be noted that no hybrid is 100% resistant or immune to GER. As a result, all fields that have not been harvested and have been exposed to rain over the last several days are at risk for Gibberella and other ear rots (including Trichoderma) and grain contamination with mycotoxins. Peel back the husk and examine about 10 ears in each of 8 to 10 sections (approximately 50-ft-long stretches of rows) spread out across the field for symptoms of GER either at the tip or at the base of the ear (see pictures). This will give you an idea of whether your field is affected by GER and vomitoxin will likely be a concern. Where possible, handle and store grain from severely affected fields separately from grain harvested from healthier fields (fields harvested before the rains with little or no GER).

**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](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.

‘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 resistant 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>
<thead>
<tr>
<th>Table 1. Best SCN management strategies for Ohio soybean producers</th>
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<tr>
<td><em><em>Egg Count Per 100 to 200 cc</em> of Soil</em>*</td>
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<tr>
<td>0-40</td>
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<td>40-200</td>
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<td>200-2000</td>
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*100 to 200 cc = approximately ½ to 1 cup
Ohio Certified Crop Adviser Pre-Exam Preparation

The Certified Crop Adviser (CCA) Exam Training program, delivered by members of the OSU Agronomic Crops Team, will be available online and in-person to help you prepare for the 2022 CCA exams. An in-person two day training class will be held on January 12 & 13 from 9AM to 5PM each day at the Shelby County Ag Building, 810-820 Fair Rd, Sidney, Ohio 45365. Provided as a great basic agronomy course, it will be used as a reminder on what is best to study in preparation for the local CCA exam. Cost for this program is $250/person which includes the publications below, lunch both days, and other program materials. Class size is limited to 25 and registration closes December 20, 2021.

Publications provided with the in-person option:

- Ohio Agronomy Guide
- Ohio, Indiana & Illinois Weed Control Guide
- The Ohio Corn, Soybean, Wheat and Forages Field Guide
- 2020 Tri-State Fertilizer Recommendations
- Modern Corn & Soybean Production

Course contact:
Lee Beers, CCA
Ohio State University Extension
Beers.66@osu.edu
330-638-6783

New this year is an online option. The self-paced recorded sessions offer a convenient option for those unable to attend the in-person session. Both the in-person and online options will help participants study for the performance objectives for the international and state CCA exams. Registration for the online course closes on November 15, 2021. Once registered participants will have access to the course until February 15, 2022. Cost for the online course is $155/person. Publications are not included, but can be purchased separately through your local Extension office or at https://extensionpubs.osu.edu.

Secure on-line registration for both the in-person and online options via credit card,
debit card or check is available on the Ohio AgriBusiness Association website: https://go.osu.edu/CCA2022.

Local and International Exams will be given on-line in 2022. Both international and local exams must be passed to obtain Certified Crop Adviser status. The international exam is available on-demand, but the local exam is only available during the exam week of February 2nd through February 9th, 2022. Registration for the February local CCA exam closes January 5th, 2022. You can register for both exams here: https://www.certifiedcropadviser.org/exams/registration.

For more information about the CCA program visit https://www.certifiedcropadviser.org/about-program

**USDA October Beef Outlook Report**

By Chris Zoller, Extension Educator, ANR, Tuscarawas County
Source: https://u.osu.edu/beef/2021/10/20/usda-october-beef-outlook-report/

The United States Department of Agriculture Economic Research Service (USDA-ERS) released the latest Livestock, Dairy, and Poultry Outlook on October 18, 2021. This monthly report provides an overview of production, use, exports, imports, and pricing. The full report is available here: https://www.ers.usda.gov/webdocs/outlooks/102400/ldp-m-328.pdf?v=1833.8. This article provides a summary of the beef outlook report.

**2021 Beef Production Forecast**

Because of heavier carcass weights and increased cow slaughter, USDA-ERS increased beef production to 27.8 billion pounds from the previous month’s report. The Agricultural Marketing Service collects slaughter weights each week as part of its Actual Slaughter Under Federal Inspection reports. As of September 25, the average carcass weight for cattle was 829 pounds. This is seven pounds heavier than the first four weeks of August 2021, but fourteen pounds less compared to September 2020. Dressed weights of steers and heifers were also heavier in September when compared to the previous month.
Slaughter numbers are higher. USDA NASS, in their Livestock Slaughter report, noted August beef and dairy cow slaughter was six percent higher than one year ago and September numbers were seven percent higher than the same month in 2020. Weak margins in the dairy sector and concerns about forage availability are likely contributing to these increased slaughter numbers. USDA-ERS expects these conditions to continue into the fourth quarter of 2021.

Weekly federally Inspected cow slaughter: 2020–2021

Cattle Price Forecasts – 2021
The five-area marketing region report for the first week of October put live steer prices at $122.56 per cwt. This is $15 higher than the same week in 2020. Large supplies of fed cattle pushed the fourth-quarter 2021 price forecast down $4 to $127 per cwt. Feeder steer prices (750-800 pounds) at Oklahoma City National Stockyards averaged $152.55 per cwt for the week ending October 4, 2021. This is more than $8 above the average price from the same week last year. Based on the expectation of higher placements, the fourth-quarter price was lowered to $151 per cwt from the previous
Ashtabula, Portage and Trumbull Counties

month’s estimate. The annual forecast for feeder steer prices for 2021 came in at $144.80 per cwt.

Cattle Price Forecast – 2022
USDA-ERS raised the fed cattle price for the second half of 2022, based on demand and tighter supplies.
It is anticipated that feeder cattle supplies will be tighter in 2022. Based on this, USDA-ERS increased the annual forecast for feeder cattle to $155.50 per cwt.

Farmland Values and Cash Rental Rates In Ohio – Will Strong Markets Continue?
By Barry Ward. Leader Production Business Management- The Ohio State University College of Food, Agricultural, and Environmental Sciences, Ohio State University Extension
Source: https://u.osu.edu/ohioagmanager/2021/10/25/farmland-values-and-cash-rental-rates-in-ohio-will-strong-markets-continue/

Farmland prices have strengthened in recent months and there are a number of key fundamentals that will likely continue to support land values in the near term. High crop prices and margins along with last year’s COVID-19 related government payments and continued low interest rates have all contributed to stronger land markets. Higher production costs and recent minor decreases in crop prices may decrease profit margins this next year and take some strength out of the market but farmland will likely continue to see increases in value through the end of this year and into the next year. Similar factors have impacted cash rental markets in Ohio and will likely continue to pressure rental rates higher in the near term.

Recent data from the United States Department of Agriculture National Ag Statistics Service (NASS) August Land Values 2021 Summary shows Ohio Farm Real Estate increasing 3.9% from 2020 to an average of $6,600 per acre in 2021. Ohio Cropland (bare cropland) showed an increase of 5.3% from 2020 to 2021. Average Cropland value is $6,800 per acre in 2021 according to this survey. Pastureland value in Ohio increased 2.1% to $3,440 per acre in 2021. Average cash rents in Ohio increased 2.6% in 2021 to $160 per acre according to this survey. The National Ag Statistics Service (NASS) also summarizes average cash rental rates by county available through Ohio NASS: www.nass.usda.gov/Statistics_by_State/Ohio/Publications/County_Estimates/2021/OH_2021_cashrent_CE.pdf

Each year, Ohio State University Extension (The Ohio State University College of Food, Agricultural, and Environmental Sciences) conducts an Ohio Cropland Values and Cash Rents Survey. The Ohio Cropland Values and Cash Rents study was conducted from January through April in 2021. The opinion-based study surveyed professionals with a
knowledge of Ohio’s cropland values and rental rates. Professionals surveyed were rural appraisers, agricultural lenders, professional farm managers, ag business professionals, OSU Extension educators, farmers, landowners, and Farm Service Agency personnel.

Ohio cropland varies significantly in its production capabilities and, consequently, cropland values and cash rents vary widely throughout the state. Generally, western Ohio cropland values and cash rents differ from much of southern and eastern Ohio cropland values and cash rents. The primary factors affecting these values and rents are land productivity and potential crop return, and the variability of those crop returns. Soils, fertility, and drainage/irrigation capabilities are primary factors that most influence land productivity, crop return and variability of those crop returns.

Other factors impacting land values and cash rents may include field size and shape, field accessibility, market access, local market prices, field perimeter characteristics and potential for wildlife damage, buildings and grain storage, previous tillage system and crops, tolerant/resistant weed populations, USDA Program Yields, population density, and competition for cropland in a region. Factors specific to cash rental rates may include services provided by the operator and specific conditions of the lease.

According to the Western Ohio Cropland Values and Cash Rents Survey, cropland values in western Ohio are expected to increase in 2021 by 3.8 to 5.3 percent from 2020 to 2021 depending on the region and land class. Cash rents are expected to increase from 3.6 to 3.9 percent depending on the region and land class. For the complete survey research summary go to: https://farmoffice.osu.edu/farm-management-tools/farm-management-publications/cash-rents

This survey and the results are reflective of the thoughts of survey participants in early 2021. Recent farmland sales would lead us to believe that farmland value has likely increased more than the 3.8 to 5.3 percent that the summary indicates for 2021. Continued high crop prices along with relatively strong predicted yields throughout much of Ohio have lent more strength to farmland markets in Ohio.

Others survey results in the eastern Corn Belt may be useful in gauging the magnitude of Ohio farmland value change thus far in 2021. The Federal Reserve Bank of Chicago (7th Fed District) surveys ag lenders in their districts each quarter. (The 7th Fed District includes parts of Michigan, Indiana, Illinois, Wisconsin and all of Iowa.) Their survey in July showed the value of good farmland in their district had increased by 14 percent from July 1, 2020 to July 1, 2021. The mid-year survey conducted by the Illinois Society of Professional Farm Managers and Rural Appraisers of their members revealed an increase of 20% in farmland values from the beginning of 2021. While Ohio is not Illinois nor does Ohio sit in the 7th Fed District, these surveys may give some guidance on the level of change in farmland values in Ohio in 2021.
**PERFECTLY POPPED – SORGHUM?**

By Susan V. Fisk


Popcorn is one of America’s favorite snacks. But did you know that a grain called sorghum can also be popped?

Researchers at Texas A&M University recently released a new variety of sorghum with excellent yield and superior popping quality.

Sorghum is the fifth most widely grown cereal grain in the world. It is a versatile crop grown to produce grain, forage, or syrup. Sorghum can also be used as a biofuel crop, because it’s very efficient in its photosynthesis and creates a large amount of biomass. In the United States, sorghum is predominantly used as animal feed in the form of grain or forage. In the past five years, U.S. interest in grain sorghum as a (human) food grain has increased. Sorghum is gluten-free, is not genetically modified, and some types are excellent sources of antioxidants.

Popped sorghum is another application for the grain. Like popcorn, certain genotypes of sorghum produce a white and generally spherical piece of popped “endosperm” when subjected to high heat. Popped sorghum is not a new concept, having been used in India and Africa as both human and animal feed.

To date, there has not been a sorghum hybrid specifically developed with popping characteristics as a primary selection trait. Mitchell Kent has been part of the team at Texas A&M working to breed a better popped sorghum.
Their paper was recently published in the Journal of Plant Registrations, a publication of the Crop Science Society of America.

“Compared to popcorn, popped sorghum has a smaller popped kernel size,” says Kent. “This quality makes it ideal in products where popcorn is too large to be used, like granola bars or candies. In addition, popped sorghum doesn’t have a strong flavor, which makes it desirable for added flavoring. The popped grain of sorghum is also more tender than popcorn and doesn’t contain hulls.”

“The starch and protein in popped sorghum is more digestible than in the un-popped grain,” says Kent. “This could lead to an increase of popped sorghum flour-based products and animal feed.”

For the past few years, the team at Texas A&M has evaluated and tested sorghum pollinator lines in hybrid combination. They wanted to identify hybrids with high:
- Popping efficiency: the percentage of kernels that pop.
- Expansion ratios: how much volume the grain gains when popped.
- Flake sizes: the size of individual pieces of popped sorghum; larger flake sizes are associated with being more tender.

“The hybrids we released are high yielding, agronomically adapted grain sorghum that can be used in the popped grain industry,” says Kent. Their technical names are Tx3489 and Tx3490.

The team began breeding this new sorghum by focusing on its agronomic qualities. These qualities include yield, and performance in variable weather and watering conditions. Then they tested popping quality.
Future plans for additional research in popcorn sorghum are possible. The group at Texas A&M Sorghum Breeding Lab will continue to pop and evaluate new genotypes as candidates for popping. They are also looking at ways to screen material more effectively, since popping large numbers of genotypes is very time consuming.

Seed of these new varieties, Tx3489 and Tx3490, are kept by personnel at Texas A&M University. Other breeders can request some seeds for use in their breeding programs. In addition, more seed is stored in the USDA-ARS National Plant Germplasm System.

Lee’s Monthly News Column

Hello Trumbull County! If there are any constants in life they are change, taxes, and Extension recommending a soil test. We recommend soil testing for a variety of reasons including economic, environmental, and diagnostics. This year we are highly recommending soil testing based on the increasing cost of fertilizer. Fertilizer has doubled, or tripled in price compared to a year ago. Higher input costs could erode any profit from higher crop prices and knowing your nutrient needs for each field could save you thousands of dollars.

As of October 11, 2021, monoammonium phosphate (MAP; 11-52-0) is currently over $800/ton, potash (0-0-60) is over $700/ton, and let’s not even start to discuss nitrogen prices. These prices are significantly higher than last year, and the outlook is not favorable for the prices to stabilize and come back down. Many people are wondering why there is a sudden spike in prices, but unfortunately there is no single issue to blame. Rather, a culmination of multiple issues is driving up the price related to lingering supply issues from COVID, foreign policy, and decreased output all contribute to the increase in price.

A relatively small cost of soil testing can have huge savings on your fertilizer bill. If you are planting corn or soybeans next year, your optimal range for phosphorus and potassium is between 40-80lbs/acre and 240-340lbs/acre in Mehlich 3 values, respectively. If your soil test report is within this range, applying crop removal rates is
recommended to replace the nutrients you are pulling off this fall. Applying fertilizer to fields with values above those ranges will provide no agronomic or economic benefit and will not result in an increased yield. Even if your soil test report is close to the upper end of that optimal range, you may be able to cut back your fertilizer rate without any loss of yield.

If you have not taken a look at the updated Tri-State Fertility Guide, you should check out the new crop removal rates. You can find a free pdf copy on our website at: https://trumbull.osu.edu/program-areas/agriculture-and-natural-resources/nutrient-management-0. Research over last several years on crop removal rates for corn and soybeans has shown that although we are harvesting more bushels per acre, we are not taking as much phosphorus and potassium per bushel as we were 30 years ago. Updated values for potassium are quite stark, with a 27% decrease per bushel in corn and an 18% decrease per bushel in soybeans. By using the latest data you can cut your potassium fertilizer cost quite significantly.

Let’s use an example for corn that yields 200 bushels per acre. You would be removing 0.35lb of P2O5 and 0.20lb of K2O for each bushel. On a per acre basis you are removing 70lbs of P2O5 and 40lbs of K2O. That is your crop removal, and to maintain fertility levels to support a successful crop that amount needs to be returned. Soybeans remove 0.80lbs of P2O5 and 1.15lb K2O per bushel. Although soybeans require more nutrients per bushel, yields are much lower than that of corn so overall you are not removing as much nutrients. Soybean yields average about 50 bushel/acre in our area which would remove 40lbs of P2O5 and 58lbs of K2O per acre.

With higher fertilizer inputs of corn, many farmers are considering dropping corn acres in favor of soybeans. While this may make sense in the short term, if the market changes you may be left behind if corn prices increase, or soybeans drop. If you have any questions about developing an economical fertility program for corn, beans, alfalfa, wheat, or hay in 2022 please give me a call and we can walk through several scenarios to maximize your profit.

Last month I wrote about an armyworm infestation. I want to end this month’s column on a similar note. The second generation is here and is causing more local damage than in September. If you have any questions about fall armyworm, soil testing, nutrient management, or any other gardening/farming topics give me a call at 330-638-6783 or email me at beers.66@osu.edu.

Take care, and stay healthy!

Northeast Ohio Agriculture

Ohio State University Extension
Ashtabula, Portage and Trumbull Counties
Are you looking to improve your records for your agribusiness? Many people would like to keep better records, but don’t know where to start. The Farm Record Keeping 101 program can be that first step towards keeping better records, having a cleaner office, and making more informed management decisions. The program is designed for both those starting out and those who want to improve their current records system.

During this program we will discuss the importance of keeping good records on your farm or agribusiness. We will also go over best practices and record keeping strategies, as well as what to avoid. No matter your current style of record keeping we will provide ways to improve it. Online, digital, and paper resources will all be discussed.

**Location:** Ashtabula County Extension Office – 39 Wall Street, Jefferson, OH 44047

**Cost:** There is no cost to attend this event

**Registration and Contact information:** As seating may be limited and to plan for handouts, please RSVP by **December 7th**. To register for this event, please contact the Ashtabula County Extension Office at 440-576-9008, or email Andrew Holden at Holden.155@osu.edu
Pesticide License Expires 2022? New Applicator?
Attend the NE Ohio “Earlybird” PAT Session

The Ohio State University, Lake County Extension. Thomas deHaas Agriculture Resource Educator

Save the date!
Thursday,
November 4th, 2021
9:00am to 1:30 p.m.

U-Lab
1981 Blasé Nemeth Rd.
Painesville, Ohio 44077

New Applicator Training  - $35
Pesticide Recertification - $35
Fertilizer Recertification - $10

Heading south for the winter? Want to get you PAT credit done early? Nothing better to do with your time? Don’t worry, you can still get your Private Pesticide Applicator and Fertilizer Applicator recertification credits early! OSU Extension in NE Ohio will again be offering our “Earlybird” session on November 4, 2021 at the U-Lab 1981 Blasé Nemeth Rd., Painesville, Ohio 44077. Pesticide recertification will be from 9 AM. to noon. with fertilizer recertification following at 12:30-1:30 p.m. New Applicator 9-noon.. Register by completing the form on the back of this flyer and mailing with payment to OSU Extension Lake County, 105 Main Street B402., Painesville, OH 44077. Please make checks payable to OSU Extension Lake County.

https://lake.osu.edu/home