Hello Northeast Ohio Counties!

We had a good crowd at the Ashtabula County Farm Bill Meeting yesterday! If you would like to attend an ARC/PLC Farm Bill event you still have a chance to this Thursday, December 12, at 1:00 pm located at the Geauga Co. Extension Office. If you are unable to attend or if you have any questions on the programs, give Andrew Holden a call at 440-576-9008 or email to Holden.155@osu.edu

The date is set for our NE Ohio Agronomy School so mark your calendars for March 11, 2020 9am to 3pm in Bristolville, OH

Stay safe!

Lee Beers
Trumbull County Extension Educator

Andrew Holden
Ashtabula County Extension Educator
Helping plant nurseries reduce runoff
By Kaine Korzekwa
Source: https://www.crops.org/science-news/helping-plant-nurseries-reduce-runoff

You may have heard how excess nutrients, such as phosphorus, can run off of crop fields. This can cause harm when the nutrients end up in rivers and lakes. However, there are other sources of excess nutrients you might not think of, such as the pots nursery plants come in.

Before being shipped to farmers and garden centers, many tree crops and ornamental plants are grown in pots at nurseries. The growers apply fertilizer with nutrients, including phosphorus, to the plants in containers. Phosphorus runoff, including that from container-grown plants, can be harmful to water quality. Because of this, researchers are looking into ways nurseries can keep phosphorus where it belongs - in the pots. Jacob Shreckhise of the USDA’s Agricultural Research Service has been looking into this problem.

“Specialty crops, including ornamental plants, small fruits, and fruit trees, may spend all or a part of their life in a pot or container,” explains Shreckhise. “Growing plants in containers saves space, helps with shipping and handling, and requires no arable land. These containers are usually filled with peat or bark instead of soil. Because peat and bark provide very little nutrients, plants are given fertilizer that release nutrients slowly over time.”

However, little research has previously been done to determine what additions to the peat or bark might help keep the phosphorus in the containers. To help answer this question, he and other researchers performed a laboratory study on pine bark-based potting medium and two ingredients nurseries often add to it: dolomite and micronutrient fertilizer.

Researcher Jake Shreckhise collects drainage water from columns containing pine bark growing media to determine how dolomite and micronutrient fertilizer amendments affect different forms of phosphorus.

Credit: Alex Niemiera
Milled pine bark, a byproduct of the lumber industry, is the basis of most growing media used to grow shrubs and trees in containers. Credit: Jake Shreckhise

“It's important to remember that the growing media used to produce nursery crops in containers is totally different than the field soils other crops are grown in,” says Shreckhise. “Bark and peat-based growing media can’t stop the phosphorus from moving around as easily. So, it’s free to drain from the containers when they are watered. That's what we are trying to prevent.”

For their lab experiment, they filled columns with the potting material, a fertilizer and ingredients thought to help with keeping phosphorus around. Then, they watered the columns and collected the drainage water to analyze.

They found that the two additives, dolomite and micronutrient fertilizer, reduce the concentrations of a particular form of phosphorus by an average of 70%.

The additives work because of complex chemistry. Phosphate, a form of phosphorus that plants can use, has a negative charge. This means it likes to stick to things with a positive charge, such as dolomite and micronutrient fertilizer. In addition to improving
Ashtabula and Trumbull Counties

plant growth, this research shows that these amendments help keep phosphorus in the pot.

Shreckhise and his team also studied how long dolomite and micronutrient fertilizers help to retain phosphorus in containers. Their next step is seeing if that retained phosphorus is in a form that plants can use.

Phosphorus runoff is becoming a bigger and bigger problem for the environment. Farms, including nurseries, must continue to combat it. “This research shows that we should continue exploring the use of amendments to help reduce the phosphorus that washes away from the containerized plants,” says Shreckhise.

“This research was just the first step toward understanding the phosphorus chemistry occurring in these pots,” he says. “Since plants were not involved in this study, we cannot make specific recommendations to growers based solely on this research. The general public should know that nursery growers routinely add these amendments to the potting medium. This is a step in the right direction to keeping the green industry ‘green.’”

Northeast Ohio Agriculture

Pulverized dolomite, an amendment commonly added to growing media, can also reduce the amount of phosphorus draining from nursery pots. Credit: Jake Shreckhise

Ohio State University Extension
Ashtabula and Trumbull Counties
In 2019, 163 corn hybrids representing 20 commercial brands were evaluated in the Ohio Corn Performance Test (OCPT). Four tests were established in the Southwestern/West Central/Central (SW/WC/C) region and three tests were established in the Northwestern (NW) and North Central/Northeastern (NC/NE) regions (for ten test sites statewide). Hybrid entries in the regional tests were planted in either an early or a full season maturity trial. These test sites provided a range of growing conditions and production environments.

The spring of 2019 was one the wettest on record and resulted in major planting delays throughout Ohio. According to the National Agricultural Statistics Service, only 33% of Ohio's corn was planted by June 2. Five of the 10 OCPT test sites were planted in June (with dates ranging from June 4 to June 22). Excessive rainfall continued into late June and early July and was followed by much drier and warmer weather from July to September, which created stressful conditions for crop growth in some regions. Warm, dry conditions during grain fill were most evident at the South Charleston, Greenville, and Washington CH test sites in the Southwestern/West Central/Central region, and, to a lesser extent, at the Bucyrus and Columbiana sites in the North Central/Northeastern region. The Northwestern test sites, Van Wert, Hoytville and Upper Sandusky, received adequate, timely rainfall throughout the growing season that was favorable for corn development. Foliar diseases (Northern Corn Leaf Blight and Gray Leaf Spot) and ear rots, including Gibberella and Diplodia, were observed at several OCPT locations but were generally present at low levels. Stalk rot (primarily Anthracnose) was present but stalk lodging was generally negligible and limited to a few hybrids. Due to late planting dates and unfavorable drying conditions (especially in the Northwestern region), average harvest grain moisture levels were much higher and test weights much lower.
than is normal. At Upper Sandusky (planted June 22), killing frosts occurred on November 6-9 as corn was nearing maturity.

Despite late planting dates and warmer and drier than normal conditions during grain fill, OCPT yields exceeded expectations. Averaged across hybrid entries in the early and full season tests, yields were 252 bu/A in the Southwestern/West Central/Central region, 234 bu/A in the Northwestern region, and 264 bu/A in the North Central/Northeastern region. Yields at individual test sites, averaged across hybrid entries in the early and full season tests, ranged from 215 bu/A at Hoytville to 282 bu/A at Hebron. Performance data for the Columbiana site in the North Central/Northeastern region is not presented due to excessive rainfall shortly after establishment and dry conditions during grain fill, which resulted in inconsistent yields. As of the publication date, Upper Sandusky in the Northwestern region was not harvested because of high grain moistures due to a late planting date. Results from Upper Sandusky will be available on-line shortly after harvest.

Tables 1 and 2 provide an overview of 2019 hybrid performance in the early maturity and full season hybrid trials by region. Averages for grain yield and other measures of agronomic performance are indicated for each region. In addition, the range in regional test site averages is shown in parentheses. Complete results are available online at: [http://oardc.osu.edu/corntrials/](http://oardc.osu.edu/corntrials/). A bulletin containing the results, *2019 Ohio Corn Performance Test*, is also published as an insert in *Ohio’s Country Journal*.

As you review 2019 test results, it is important to keep the following in mind. Confidence in test results increases with the number of years and the number of locations in which the hybrid was tested. Avoid selecting a hybrid based on data from a single test site, especially if the site was characterized by abnormal growing conditions. This is especially important in 2019 given the wide range in planting dates and growing conditions. Look for consistency in a hybrid's performance across a range of environmental conditions. Consider the table providing a “Combined regional summary of hybrid performance” which indicates the performance of hybrids common to eight statewide test sites and the six tests in western Ohio. Differences in grain moisture percentages among hybrids at harvest can provide a basis for comparing hybrid maturity. Yield, % stalk lodging, grain moisture, and other comparisons should be made between hybrids of similar maturity to determine those best adapted to your farm.
Table 1. A regional overview of the early maturity 2019 Ohio Corn Performance Test.

<table>
<thead>
<tr>
<th>Region</th>
<th>Entries</th>
<th>Grain Yield (Bu/A)</th>
<th>Moisture (%)</th>
<th>Lodging (%)</th>
<th>Emergence (%)</th>
<th>Final Stand (plants/A)</th>
<th>Test Wt. (lbs/bu)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SW/WC/C</td>
<td>52</td>
<td>248 (229-266)</td>
<td>18.8 (16.2-20.6)</td>
<td>0 (0-1)</td>
<td>95 (88-99)</td>
<td>33800 (28300-36200)</td>
<td>57.0 (53.2-59.6)</td>
</tr>
<tr>
<td>NW</td>
<td>52</td>
<td>232 (205-249)</td>
<td>22.6 (20.1-26.3)</td>
<td>1 (0-5)</td>
<td>94 (85-99)</td>
<td>33000 (27600-37600)</td>
<td>53.8 (50.7-57.3)</td>
</tr>
<tr>
<td>NE/NC</td>
<td>56</td>
<td>260 (228-292)</td>
<td>19.9 (17.6-22.7)</td>
<td>2 (0-21)</td>
<td>95 (87-99)</td>
<td>33300 (28300-36400)</td>
<td>56.7 (53.0-58.9)</td>
</tr>
</tbody>
</table>

Table 2. A regional overview of the full season 2019 Ohio Corn Performance Test.

<table>
<thead>
<tr>
<th>Region</th>
<th>Entries</th>
<th>Grain Yield (Bu/A)</th>
<th>Moisture (%)</th>
<th>Lodging (%)</th>
<th>Emergence (%)</th>
<th>Final Stand (plants/A)</th>
<th>Test Wt. (lbs/bu)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SW/WC/C</td>
<td>50</td>
<td>257 (245-275)</td>
<td>21.4 (19.0-25.7)</td>
<td>0 (0-2)</td>
<td>97 (90-99)</td>
<td>34400 (31300-36600)</td>
<td>56.6 (54.5-58.5)</td>
</tr>
<tr>
<td>NW</td>
<td>63</td>
<td>237 (214-251)</td>
<td>26.9 (23.2-31.8)</td>
<td>2 (0-10)</td>
<td>95 (82-98)</td>
<td>33700 (28100-36700)</td>
<td>52.2 (48.8-55.0)</td>
</tr>
<tr>
<td>NE/NC</td>
<td>56</td>
<td>268 (240-291)</td>
<td>23.8 (21.9-27.0)</td>
<td>1 (0-7)</td>
<td>96 (88-99)</td>
<td>34100 (30100-37000)</td>
<td>54.5 (51.4-56.4)</td>
</tr>
</tbody>
</table>
Beyond organic matter: the world of soil carbon
By Angela Straathof
Source: https://dl.sciencesocieties.org/publications/cns/articles/52/6/6?q=publications/cns/articles/52/6/6

What should we be testing for in our agricultural soils? Ask 10 different soil scientists that, and you’ll get 15 different answers. Even if they all agreed on what we should be measuring, it would be more difficult to agree on when and how. One thing they may all agree on, however, is why. Why are we soil testing? To inform management decisions in ways that maximize yields and benefit the agroecosystem. And the what, soil scientists may all agree, should therefore be an indicator of that soil’s potential to support yields and sustain net benefit agroecosystem services.

Perhaps the best and most routinely measured indicator of a soil’s capacity for these potential benefits is organic matter (OM) content. In its crudest but most widely used method, OM is determined by heating a soil sample to more than 550°C. The mass lost from the heated sample is the proportion of the sample that burned off because it is organic carbon based; hence, the method’s name, “loss on ignition.” The proportion of soil that is made of OM is positively correlated with soil water infiltration and retention, aggregate stability and soil structure, and beneficial soil biological properties, including microbial biomass, activity, and diversity.

Organic matter content varies with soil type and management practice, but agricultural soils are generally in the 2–5% range, with 5% being a good minimum target although sandy soils encounter difficulty increasing OM beyond 2.5%. From a soil-testing and agronomic perspective, however, more informative than the value of percent OM in a given field for a given year is the direction and magnitude of percent OM change between years. A farmer with a field that has tested 4.6% OM in May 2018 and 5.0% OM in May 2019 may want to apply the practice that caused that net gain of OM to other fields the following season to replicate that gain. The 5.0% value on its own is not overly informative (depending on soil type, this could actually be quite low; or it may have dropped from 5.5% the year before), but the 0.4% gain indicates good management, and so measuring OM annually is the most informative practice.
But OM is a broad-brush measurement; just as a soil’s total P content isn’t necessarily indicative of plant-available P, total OM between soil types can vary in its quality, including the bioavailability of the OM’s carbon (C) and its resistance to decomposition. This variability in OM quality may be driven by its source (think wheat vs soybean residue and municipal compost vs. liquid manure), the soil type (well-structured sandy loams have older, more resistant OM than sands with fewer aggregates to physically protect OM), and the plants and microorganisms present (plant-derived OM is less resistant to decomposition than microbially derived OM). Based on all this inherent variability, are we measuring at the right scale when we measure total percent OM? And if not, what should we be targeting instead of that total value?

Soil organic matter can be subdivided different ways: physically or chemically, operationally or molecularly. Organic matter is a complex and highly variable mix of compounds, but a typical conversion factor is that soil OM is 58% C. Pools of OM that make up total OM include soluble organic C, which is mobile in soil water and includes polysaccharides and metabolites that are byproducts of root exudation and decomposition. Light fraction, or particulate, organic C still has a discernable mass, so it is less decomposed and insoluble (or not yet dissolved) OM. And finally, the most persistent and most contentious pool of OM C: humus (or humic acids) or resistant and thus “stable” C. Compounds are in a constant state of flux between these three states, and each pool has varying degrees of biological and agronomic relevance.

The last decade of advancement in soil science, microbial ecology, and soil–plant–microbe interactions has ignited a paradigm shift in production agriculture’s research priorities. The (micro)biological component of soil fertility is increasingly understood as critical to sustainable productivity and sensitive to changes in land management. Microbial activity (most often measured as microbial respiration, or CO$_2$ production from the soil), and the nutrient cycling and biochemical processes fueled by microbial activity, are driven by the soil C, which microorganisms consume as fuel. More specifically, the processes are driven by those most bioavailable or soluble forms of C within OM. Research has shown that adding organic amendments with more bioavailable, soluble, and less complex forms of organic C results in higher rates of soil respiration (Straathof et al., 2014). Measurements of soil OM’s proportion of organic C, the proportion of the most bioavailable forms of C, and the proportions of different organic C pools relative to one another may be the best indicators of a soil’s capacity to sustain microbial activity, microbial populations, and beneficial agroecosystem services.

Commercial labs are increasingly offering “complete package” soil health tests, many of which include a measurement of baseline C respiration or substrate-induced respiration (respiration of C that’s added to the soil). Alternatively, microorganisms can be measured using C that is already present in dry soil, provided with a “flush” of this C by rewetting the soil. This releases (as CO$_2$) the carbon from microbial cells that lysed
during drying. All of these tests are essentially indicators of the soil microbial community’s size and capacity to use C, and both of those factors are positively related to soil health. Heterotrophic fungi and bacteria consume C and drive rates of N fixation and P mobilization, but they also provide crops with disease resistance against soil-borne plant pathogens and even aboveground threats such as insects. These microorganism’s activity rates, biomass, and diversity are often directly linked to diversity in C sources available to them. For instance, lab-based studies of 50 field soils found a soil’s ability to suppress the growth of soil-borne plant pathogens such as *Rhizoctonia solani* were related to organic matter content and microbial biomass, which was related to reduced tillage and manure application (van Agtmaal et al., 2018). With this multitude of functions performed by soil microorganisms, and the differences in C preference among organism types, the question of what to measure still looms and must also be inspired by one’s goals for the soil in question.

Producers, and therefore agronomists and researchers, are essentially seeking a “silver bullet” soil test, or at least a stronger indication of a soil’s capacity to resist stress, promote growth, and point to a required best management practice. The disagreement on when and how remains, alongside the odd experiment or soil type that exhibits the opposite of relationships we expect between microbial variables and soil health. Soil organic C, as the fuel that sustains the processes required for crop protection and nutrient acquisition, is a more accessible and easier to interpret parameter. Pools of bioavailable, soluble organic C to fuel imminent microbial processes; light fraction organic C to promote aggregation and provide microhabitats to bacteria and fungi; and resistant organic C to sustain the other pools and long-term C sequestration are equally important components of total OM. By diversifying crop rotations and OM inputs, physically preventing OM degradation through residue or cover crop management and reduced tillage, and managing inputs to preserve soil biological integrity, the diversity of C in OM can also be maximized to the production system’s benefit.

**Certified Crop Adviser Pre-Exam Training to be held January 8 & 9**

By: Harold Watters, CPAg/CCA

Source: https://agcrops.osu.edu/newsletter/corn-newsletter/2019-40/certified-crop-adviser-pre-exam-training-be-held-january-8-9

The Certified Crop Adviser (CCA) Exam Training program, sponsored and delivered by members of the OSU Agronomic Crops Team, will be offered at the Shelby County Ag Building, 810-820 Fair Rd, Sidney, Ohio 45365 on January 8th and 9th beginning at 9:00 a.m. on the 8th and adjourn by 5:00 p.m. on the 9th. This is an intensive two-day workshop somewhat
directed toward the local exam – to be used as a reminder on what best to study in preparation for the CCA exams.

The price for the exam preparation class is $250.

Secure on-line registration via credit card, debit card or check is available: https://associationdatabase.com/aws/OABA/input_form/display_form_01_show?form_no=74&host=retain.

If you have questions, the course contact is:
Harold Watters, CPAg, CCA
Ohio State University Extension
1100 S. Detroit St
Bellefontaine, OH 43311
Phone 937 604-2415 cell. Or by email: watters.35@osu.edu.

We will provide the following publications in addition to the lectures:
- Ohio Agronomy Guide
- Ohio, Indiana & Illinois Weed Control Guide
- The Ohio Corn, Soybean, Wheat and Forages Field Guide
- Tri-State Fertilizer Recommendations and recent updates
- Modern Corn & Soybean Production
- Many handouts, and access to all digital content

This class has limited seating. We interact with participants and wish to answer all their questions, so we keep it small. Register soon as we always fill up well before the start of class.

Additional information about CCA certification:
The Certified Crop Adviser (CCA) and Certified Professional Agronomist (CPAg) programs of the American Society of Agronomy are the benchmarks of professionalism. The CCA certification was established in 1992 to provide a benchmark for practicing agronomy professionals in the United States and Canada.

Steps to Certification:
- Pass two exams – local and international. Registration information can be found at: https://www.certifiedcropadviser.org/exams
- Document education and experience.
- Sign and agree to uphold CCA code of ethics.

Once Certified:
• Earn 40 hours of continuing education every two years and pay an annual renewal fee (fees are subject to change).

The next CCA Exam is given on-line in the period February 7 to February 14, 2020
The registration period ends December 13, 2019

Once you are certified, specialty certifications are also available to add to your CCA qualifications:

4R Nutrient Management, Precision Agriculture, Resistance Management, and Sustainability.

Lee’s Monthly News Column
Hello Trumbull County! Despite the snow and wet weather harvest is almost wrapped up for 2019! I estimate corn to be about 85% complete and soybeans a little ahead about 95% with a few lingering fields out there. Yields for corn are all over the board from less than 100 to over 230 bushels/acre. For reference the county average is about 175 in a normal year, and I expect the overall average to be down from that number about 5% or a little more. This decrease is due to the wet weather earlier this year that delayed planting. Fortunately, soybean yields are going to be about average this year. Growing conditions for soybeans were pretty good from the end of June to now.

By now you may have heard about Gov. DeWine’s H2Ohio Water Quality Plan aimed at increasing water quality and reducing harmful algal blooms. While details on the specifics of the plan will be coming out shortly, the general outline involves implementing a set of best management practices (BMPs) to reduce phosphorus runoff, the primary culprit for the algal blooms. These BMPs include soil testing, variable rate fertilizer, incorporating fertilizer, crop rotation, cover crops, drainage management, two-stage ditches, field buffers, and wetlands. Although many farmers already have some, if not all, of these BMPs, there are incentives to increase the adoption in the form of economic incentives.

To be eligible for the economic incentives farmers must complete a certification process that will likely involve site visits and in-depth consultation and adopt a set of the BMPs listed above. This certification will co-exist with the already established Fertilizer Applicator Certification which all farmers that apply fertilizer to 50 acres or more must obtain. The new H2Ohio certification is not a mandatory program, but the possible economic incentives may make it an attractive option to some. This program will rollout in 2020 to the Maumee watershed in NW Ohio, and increase to the rest of the state there after. It is unlikely that we will see a push for NE Ohio farmers to become certified in 2020. If you want more information about this new program please reach out to me, or the Trumbull Soil and Water Conservation District as they will be spear heading this effort locally.
With the recent legalization of industrial hemp in Ohio there are a lot of questions about how to grow and process this new crop. We will be discussing the agronomic and legal aspects of industrial hemp at our upcoming Trumbull County Farmer Lunch Series on January 15th at the Ag Center in Cortland. This educational lunch series is back for 2020 and is a joint effort between OSU Extension, Trumbull SWCD, and USDA NRCS. The cost for this program is $5/person, and includes lunch that is sponsored by the Trumbull County Holstein Club. To register for the program please call OSU Extension at 330-638-6783 by January 8 to ensure an accurate count for lunch.

Also mark your calendars for March 11, 2020 as OSU Extension’s Agronomy School returns to Bristolville, OH! We will have an agenda together shortly, but the cost for the program will be $15/person.

I truly hope you are able to enjoy the upcoming holidays with family and friends. Please stay safe during your travels and while working on the farm! 
Lee Beers can be reached at beers.66@osu.edu or 330-638-6738

2019 Ashtabula County Plat Book Available
The new 2019 edition of the Ashtabula County Plat Book is now available for purchase for $25 + tax at Ashtabula County - OSU Extension Office located at 39 Wall Street in Jefferson. Premium wall maps are also available. For more information contact the office at (440) 576-9008. Traditional landownership maps by township and range, a landowner index for easy cross referencing, and other county information are all available in the new plat book. Visit mappingsolutionsGIS.com for digital versions of Ashtabula County landowner maps. Mapping Solutions is the publisher.

Trumbull County Farmer Lunch Series Returns for 2020
OSU Extension, Trumbull SWCD, and USDA-NRCS have teamed up again to offer a series of educational luncheons in 2020. We’ll kick off the series on January 15th with a discussion on the agronomic and legal requirements for growing industrial hemp. On February 19th we’ll be talking about how to implement grass waterways to prevent erosion which is highly relevant with our recent bouts of heavy rains creating washouts throughout the region. We will be taking a break in March and hope you attend our NE Ohio Agronomy School on March 11th, but we’ll be back on April 15th with a farmer discussion on cover crops and what works in our region, and what does not. Each of these events is $5/person and this includes lunch. Lunch is again sponsored by the Trumbull County Holstein Club to keep costs down. The programs start at 11:30A.M. and will conclude by 1:00P.M. If you would like to register or have further questions, please call 330-638-6783 or email beers.66@osu.edu.
Upcoming Events

December 12, 2019 1:00pm  
ARC/PLC Public Meeting – Geauga Co. Extension Office

January 15, 2020 11:30AM  
Trumbull Farmer Lunch Series – Hemp: What You Need to Know

February 12, 2020 11:30AM  
Trumbull Farmer Lunch Series – Grass Waterways for Erosion Control

March 11, 2020 9AM to 3PM  
Northeast Ohio Agronomy School – Bristolville, OH

April 15, 2020 11:30AM  
Trumbull Farmer Lunch Series – Cover Crops – A Farmer Discussion

Lee Beers  
Trumbull County Extension Office  
520 West Main Street  
Cortland, OH 44410  
330-638-6783  
beers.66@osu.edu  
trumbull.osu.edu

Andrew Holden  
Ashtabula County Extension Office  
39 Wall Street  
Jefferson, OH 44047  
440-576-9008  
holden.155@osu.edu  
ashtabula.osu.edu

CFAES provides research and related educational programs to clientele on a nondiscriminatory basis. For more information: http://go.osu.edu/cfaesdiversity.
Geauga County Farm Bill Update: Agricultural Risk Coverage (ARC)/Price Loss Coverage (PLC)

THURSDAY, DECEMBER 12TH, 1:00 P.M.

The 2018 Farm Bill allows the choice to enroll in ARC or PLC for 2019-2023. Enrollment for 2019 is currently open with the deadline set as March 15, 2020. Join OSU Extension and the Farm Service Agency for an informational meeting to learn about changes to the ARC/PLC, important dates and deadlines, crop insurance – supplemental coverage option, and using decision tools to evaluate program choices to make informed program decisions.

Location: Geauga County Extension Office, 14269 Claridon-Troy Road; P.O. Box 387 Burton, OH 44021

Cost: Free

Contact information: Call Les Ober at 440-834-4656 to RSVP
It’s not the most talked about topic on the farm, but yet it is one of the more important things to think about if you own livestock. Livestock mortality is part of raising livestock, so you need to have a plan in place when the need arises. Composting is a common practice, but there’s some things you should know before you try it. Join us to learn more and become certified in Livestock Mortality Composting.

LOCATION: Mahoning County Extension, 490 S. Broad St., Canfield, OH 44406
CONTACT: 330-533-5538
COST: $25 per person
*Lunch is provided

MONDAY, DECEMBER 9 • 12 P.M. – 2 P.M.
SPEAKER: Rory Lewandowski, OSU Extension

REGISTRATION INFORMATION. Registration includes Lunch, LMC Book, materials and handouts. Please mail to 490 S. Broad St. Canfield, OH 44406, fax (330-533-2424), or drop off the registration to the OSU Extension Office in Canfield. The program is filled on a “first come, first served basis.”

Name: ___________________________________________
Address: ___________________________________________
Email: ___________________________ Phone: ___________________________
Number Attending ($25): ___________________________

Mortality Compost
WHEN
January 8, 2020
8:00am to 3:30pm

WHERE
NEW Location:
Champions Center
4122 Laybourne Road
Springfield, OH

HOW
Registration Cost: $50
RSVP by January 3 at
go.osu.edu/precisionu

CONTACT
Amanda Douridas
douridas.9@osu.edu
937-484-1526

FEATURED SPEAKERS
Dr. Scott Shearer - The Ohio State University
Dr. Ian McDonald - Ontario Ministry of Agriculture
Dr. Mark Hanna - Iowa State University
Dr. Jason Warren - Oklahoma State University

COMBATING COMPACATION
Learn how to minimize compaction and maximize soil productivity from industry and academic experts.

The Ohio State University
College of Food, Agricultural, and Environmental Sciences
ohiostateprecisionag.com
extension.osu.edu
TRUMBULL COUNTY FARMER LUNCH SERIES

JANUARY 15, 2020  11:30A.M. – HEMP: WHAT YOU NEED TO KNOW
FEBRUARY 19, 2020  11:30A.M. – GRASS WATERWAYS FOR EROSION CONTROL
APRIL 15, 2020  11:30A.M. – COVER CROPS: A FARMER DISCUSSION

The Trumbull County Farmer Lunch Series returns for 2020! This series of education events is brought to you by OSU Extension Trumbull County, Trumbull County SWCD, and the USDA NRCS. Sponsoring lunch again this year is the Trumbull County Holstein club. We request reservations one week in advance for an accurate count for lunch. To register call OSU Extension at 330-638-6783.

Location: Trumbull County Ag and Family Education Center, 520 West Main St, Cortland, OH 44410

Cost: $5/person

Contact information: OSU Extension, 330-638-6783 or beers.66@osu.edu

OHIO STATE UNIVERSITY EXTENSION

CFAES provides research and related educational programs to clientele on a nondiscriminatory basis. For more information, visit cfaesdiversity.osu.edu. For an accessible format of this publication, visit cfaes.osu.edu/accessibility.
Managing Stored Grain – 2019 Considerations

FRIDAY, DECEMBER 20TH, 2019
3:00 - 4:00 PM

2019 conditions led to variable grain quality causing many potential storage issues. Dr. Ken Hellevang, North Dakota State University, will join us for a webinar to share information on managing stored grain including high moisture and damaged grain.

Register: go.osu.edu/StoredGrain

Cost: Free

For more information, contact: Elizabeth Hawkins, hawkins.301@osu.edu
Are you looking to take obtain your private or commercial pesticide license or wish to add an additional category to your existing license? The Ohio Department of Agriculture will be holding testing sessions in 2020 in Northeast Ohio. These tests are administered by the Ohio Department of Agriculture and are held at Extension offices in northeast Ohio as a courtesy to producers. Pre-registration is required for each location and can be made by calling the ODA at 614-728-6987 or 1-800-282-1955 (press 3 then 1).

<table>
<thead>
<tr>
<th>Locations</th>
<th>Dates and Times</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ashtabula County</strong></td>
<td><em>Testing Begins at 10:00 a.m.</em></td>
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</tbody>
</table>
| Location: Ashtabula County Extension Office  
39 Wall Street  
Jefferson, OH 44047  
For Directions Call 440-576-9008 | January 21  
March 5 |
| **Geauga County**    | *Testing Begins at 10:00 a.m.*        |
| Location: Geauga County Extension Office  
Patterson Center Basement  
14269 Claridon – Troy Road  
Burton, OH 44021  
For Directions Call 440-834-4656 | February 19  
March 18  
April 15 |
| **Lake County**     | *Testing Begins at 9:00 a.m.*         |
| Location: Richard L. Martin Learning & Business Center (ULAB)  
1981 Blase Nemeth Road  
Painesville Twp., OH 44077  
For Directions Call 440-350-2582 | February 10  
April 13 |
| **Portage County**  | *Testing Begins at 10:00 a.m.*        |
| Location: Portage County Extension Office  
705 Oakwood Street  
Ravenna, OH 44266  
For Directions Call 330-396-6432 | March 19  
May 21  
July 16  
September 17  
November 19 |
| **Trumbull County** | *Testing Begins at 10:00 a.m.*        |
| Location: Trumbull County Extension Office  
520 West Main Street, Suite #1  
Cortland, OH 44410  
For Directions Call 330-638-6783 | January 13  
February 10  
March 9  
April 13  
May 11 |

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