Hello Northeast Ohio Counties!

Welcome to 2020! We are off and running with a busy programming season this winter. Be sure to check out our upcoming events in the newsletter to help you stay up to date with your certifications. We'll be also be working to bring you new information that will make farming in 2020 more profitable – as long as the weather cooperates.

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Your Weekly Agriculture Update for January 7, 2020

Ashtabula and Trumbull Counties

Lee Beers
Trumbull County Extension Educator

Andrew Holden
Ashtabula County Extension Educator
**Considerations for Stored Seed**
By: Alexander Lindsey, Andrew Evans, and John Armstrong
Source: https://agcrops.osu.edu/newsletter/corn-newsletter/2020-01/considerations-stored-seed

2019 was full of challenges, including what to do with purchased seed that did not get planted. If the purchased seed was not returned and was stored with intent to use it in the 2020 season, producers should consider re-testing the seed lots for germination and possibly add a seed vigor test to help make planting decisions for 2020. Most seed germination percentages on a seed tag for agricultural seeds (like corn and soybeans) are valid for 12 months from the last date of the month in which they were completed, with the exception being cool season grasses which are valid for 15 months beyond the month of testing (Ohio Revised Code, Chapter 907.07).

Seed quality is key to establishing a good crop, with major components of quality being genetic quality, physical purity (% other crops, % inert, and % weeds), and physiological quality (seed germination and vigor). Over time the physiological quality of a seed lot can change, especially as a result of its storage environment. Storing seed where the temperature (in degrees F) plus the % relative humidity are less than 100 (Harrington’s rule) helps to minimize the rate of seed deterioration (or loss in germination and vigor). However, in non-conditioned storage conditions viability may vary dramatically after 12 months with different seed lots that had similar initial germination rates (Table 1).

Seed germination is an important consideration for determining seeding rate to ensure the critical final stand for yield is achieved for crops like corn and soybeans. Check the seed tag for both the date of the test as well as the

<table>
<thead>
<tr>
<th>Crop</th>
<th>Lot</th>
<th>Period of open storage (months)</th>
<th>Germination (%)</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>Corn</td>
<td>A</td>
<td>98</td>
<td>97</td>
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<td></td>
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<td>E</td>
<td>96</td>
<td>94</td>
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<tr>
<td>Soybean</td>
<td>A</td>
<td>86</td>
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<td>B</td>
<td>94</td>
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<tr>
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<td>E</td>
<td>86</td>
<td>56</td>
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</tbody>
</table>

Table 1. Change in germination over time for five corn and five soybean seed lots stored in a non-conditioned warehouse.
germination when planning seeding rates. This percentage is usually derived from the results of a standard warm germination test, which often assesses seed germination under optimal conditions (warm moist temperatures). To determine a seeding rate for a targeted harvest population (e.g. 32,000 plants/ac for corn), then divide your harvest population by the germination (e.g., 95%) as a decimal. In this example, 33,684 seeds/acre (32,000/0.95) would need to be planted to achieve the desired harvest population given an 95% germination rate.

A seed vigor test can provide further insight into how a seed lot may perform in the field under stressful conditions compared to other seed lots. This information could help producers plan for what lots should be planted early vs. later, as well as positioning fields that are typically more stressful for seedlings. A higher vigor score is usually more tolerant of adverse conditions than a lot with a lower vigor score. These can be used on carry over seed lots, but also can be conducted on new seed lots prior to planting.

Common seedling vigor tests include a cold test (cold moist soil) or a saturated cold test (cold moist soil conditions plus embryo is placed directly into soil). The cold test and saturated cold test provide insight into germination of a seed lot under cool conditions common to April planting dates. The cold test uses of cool moist conditions with the addition of soil, and can be conducted using rolled towels or shallow trays. The saturated cold test is a more standardized version of the cold test that uses sieved soil, the soil contains more water content (lower oxygen content as well), and places the embryo directly into the cold wet soil. The accelerated aging test helps estimate longevity of seed in storage, and has been related to field emergence and stand establishment. The seeds in this test are exposed to a short period of high heat and humidity conditions (ex: 2-3 days, 105 degrees F, 100% relative humidity) before a standard germination test is conducted. Others, such as a seedling growth rate test, can provide insight into germination as well as the amount of energy storage reserves in the seeds.

The recommendation for sampling a specific seed lot for testing is that a sample should be collected from 5 bags plus 10% of the remaining bags for that lot to ensure a representative sample. Please look to the NCR bulletin 403 - Seed Lot Sampling for more specific guidelines (https://www.ag.ndsu.edu/fss/seed-increase-program/seed-lot-sampling-ncr-bulletin-403).

Source:

OHIO FARMER AND FARMLAND OWNER INCOME TAX WEBINAR

Are you a farmer or farmland owner wanting to learn more about the recent income tax changes? If so, join us for our Ohio Farmer and Landowner Income Tax Webinar on January 13 from 1 p.m. to 3 p.m. Register for just $35 and if you can’t attend, you will be sent a link to view it later at your convenience.

This webinar will focus on issues related to farmer and farmland owner tax returns and the additional changes introduced in 2019.

The two-hour program will be presented in a live webinar format by OSU Extension Educators Barry Ward, Chris Bruynis and David Marrison. Individuals who operate farms, own property, or are involved with renting farmland should participate.

Topics to be discussed during the webinar include:

• Tax planning in an unusual year: prevented planting crop insurance indemnity payments, Revenue Crop Insurance Payments, Market Facilitation Payments, cost-share payments, disaster aid payments
• Like Kind Exchanges (farm machinery and equipment no longer are eligible for this provision – this is a significant change), how this change may affect state income tax and how this change may affect your Social Security credits and eventual payments
• Qualified Business Income Deduction
• Qualified Business Income Deduction for sales to cooperatives (different from the QBI Deduction for sales to non-cooperatives and more complex)
• Which farmland lease income may qualify for the QBI Deduction
• Estate and gift tax update
• C-Corporation to S-Corporation Conversions
• Tax issues related to getting out of the farming business
• Tax from income related to pipeline construction and easements
• Other tax strategies to consider under the Tax Cuts and Jobs Act

You can choose to view the live webinar or watch the recording at a time more convenient. Either way, register for the event now. If you do not attend, the link to view the recording will be sent to you once the video is ready. This typically takes 1-2 business days.

http://www.cvent.com/events/ohio-farmer-and-farmland-owner-income-tax-webinar/event-summary-fb104f417964e5efa17a620b7782e23d.aspx
**Genes controlling mycorrhizal colonization discovered in soybean**


Source: University of Illinois College of Agricultural, Consumer and Environmental Sciences, [https://www.sciencedaily.com/releases/2020/01/200106141608.htm](https://www.sciencedaily.com/releases/2020/01/200106141608.htm)

Like most plants, soybeans pair up with soil fungi in a symbiotic mycorrhizal relationship. In exchange for a bit of sugar, the fungus acts as an extension of the root system to pull in more phosphorus, nitrogen, micronutrients, and water than the plant could on its own.

Mycorrhizal fungi occur naturally in soil and are commercially available as soil inoculants, but new research from the University of Illinois suggests not all soybean genotypes respond the same way to their mycorrhizal relationships.

"In our study, root colonization by one mycorrhizal species differed significantly among genotypes and ranged from 11 to 70%," says Michelle Pawlowski, postdoctoral fellow in the Department of Crop Sciences at Illinois and co-author on a new study in Theoretical and Applied Genetics.

To arrive at that finding, Pawlowski grew 350 diverse soybean genotypes in pots filled with spores of a common mycorrhizal fungus. After six weeks, she looked at the roots under a microscope to evaluate the level of colonization.

"It was a little bit of a gamble because we didn't know much about soybean's relationship with mycorrhizae and did not know if differences in colonization among the soybean genotypes would occur. So when we screened the soybean genotypes and found differences, it was a big relief," Pawlowski says. "That meant there was a potential to find genetic differences, too."

The process of root colonization starts before fungal spores even germinate in the soil. Roots exude chemicals, triggering spores to germinate and grow toward the root. Once the fungus makes contact, there's a complex cascade of reactions in the plant that prevents the usual defensive attack against invading pathogens. Instead, the plant allows the fungus to enter and set up shop inside the root, where it creates tiny tree-like structures known as arbuscules; these are where the fungus and plant trade sugar and nutrients.
The study suggests there is a genetic component to root colonization rates in soybean. To find it, Pawlowski compared the genomes of the 350 genotypes and honed in on six genomic regions associated with differing levels of colonization in soybean.

"We were able to use all the information we have on the soybean genome and gene expression to find possible causal genes within these six regions," she says.

According to the study, the genes control chemical signals and pathways that call fungus toward roots, allow the plant to recognize mycorrhizal fungus as a "good guy," help build arbuscules, and more. "For almost every step in the colonization process, we were finding related genes within those regions," Pawlowski says.

Knowing which genes control root colonization could lead breeders to develop soybean cultivars with a higher affinity for mycorrhizal fungus, which could mean improved nutrient uptake, drought tolerance, and disease resistance.

"This environmentally friendly approach to improving soybean production may also help reduce the overuse of fertilizers and pesticides and promote more holistic crop production systems," says Glen Hartman, plant pathologist in the Department of Crop Sciences and crop pathologist for USDA-ARS.

Dr. Peter Thomison Retires
By: Laura Lindsey
Source: https://agcrops.osu.edu/newsletter/corn-newsletter/2020-01/dr-peter-thomison-retires

Dr. Peter Thomison, Professor and Extension State Specialist for corn production, retired from Ohio State University at the end of December 2019 after 30 years of service.

Peter was an active member of OSU Extension’s Agronomic Crops Team. He contributed hundreds of timely, high-impact articles to the CORN newsletter, wrote several bulletins and Fact Sheets, and could be seen throughout Ohio during winter extension meetings and field days. Peter was at the forefront of corn production research, including corn hybrid by management interactions, causes and identification of abnormal corn ears, phenological responses of corn to heat accumulation, and agronomic performance and grain quality of specialty corn. Peter’s extension and research efforts to develop cropping systems that minimize production inputs and...
impact on environmental quality will have a lasting effect on extension, farmers, and the ag industry.

On a personal note, I will thoroughly miss Peter. Peter was extremely instrumental in helping me establish my extension and research program at Ohio State (and even served a mentor on my advisory committee during my Master’s degree program). Peter was always available to answer questions and provide guidance, and I enjoyed talking with him almost every day.

Congratulations on your retirement, Peter! You will be greatly missed by all of us on the Ag Crops Team. Thank you for your efforts over the past 30 years and best wishes for the future.

A LOOK BACK: AGRICULTURAL LAW IN 2019
By: Peggy Kirk Hall
Source: https://farmoffice.osu.edu/blog/thu-01022020-143pm/ohio-ag-law-blog-look-back-agricultural-law-2019

I often receive quizzical looks when someone asks me what kind of law I practice and I say, “agricultural law.” A common response is “what in the world is that”? A look back at agricultural law in 2019 provides a pretty good answer to that question. Our review of major developments in the last year illustrates the diversity of legal issues that make up the world of agricultural law. It’s never dull, that’s certain.

Here are the highlights of what we saw in agricultural law in 2019:

- **The Lake Erie Bill of Rights (LEBOR).** Toledo citizens gained national attention when they passed a charter amendment granting legal rights to Lake Erie and its ecosystem to “exist, flourish, and naturally evolve.” The amendment also allowed Toledoans to sue corporations and governments that violate the lake’s legal rights. Ohio’s legislature quickly enacted a law prohibiting any attempt to enforce LEBOR, and Drewes Farm challenged LEBOR as unconstitutional in a lawsuit that is still tied up in federal court. While Toledoans won’t be able to use LEBOR to recognize legal rights for the lake, the measure raised awareness of the water quality frustrations felt by Toledoans and others with ties to Lake Erie, and brought attention to similar efforts around the country to protect natural resources by granting them legal rights. Read our review of LEBOR [here](https://farmoffice.osu.edu/blog/thu-01022020-143pm/ohio-ag-law-blog-look-back-agricultural-law-2019).

- **Watersheds in Distress tug-of-war.** Controversial rules proposed by the Kasich administration would have expanded areas in Ohio designated as “watersheds in distress” and added regulations for farmers operating within those areas. Governor DeWine’s new Director of Agriculture [yanked the rules](https://farmoffice.osu.edu/blog/thu-01022020-143pm/ohio-ag-law-blog-look-back-agricultural-law-2019) upon
taking office in January, however, effectively ending the controversy over whether more regulations for farmers are the solution to Ohio’s water quality problems. The governor’s H2OH initiative offers an alternative to the Watersheds in distress approach.

- **Hemp hemp, hooray.** After the 2018 Farm Bill legalized hemp by distinguishing it from marijuana under federal law, then authorized states to allow hemp production, Ohio passed legislation also decriminalizing hemp. Ohio’s proposed rules for cultivating and processing hemp are now out, and ODA held a hearing on the proposed rules on December 18, 2019. ODA also submitted Ohio’s Hemp Production Plan to the USDA in December, and the USDA approved the plan. Once the state rules become final, Ohio’s hemp program will open up and applicants can apply for cultivation licenses and begin growing hemp as a commodity crop in 2020. ODA’s hemp program page is [here](#).

- **Waves of WOTUS.** We began 2019 with the Trump administration’s proposed WOTUS rewrite in February, which is still under review and not yet effective. We followed that with the administration’s announced repeal of the Obama-era 2015 WOTUS rule in September; the repeal became effective on December 23, 2019. There’s more: the administration published a reinstatement of the WOTUS definition from 1996/1998 until its proposed rule becomes final. But that’s not all. Sprinkled in and around those dates were a slew of lawsuits and injunctions challenging the Obama-era rule, the rulemaking process, and the pre-2015 definitions of WOTUS. By the end of the year, we were left with a patchwork of different WOTUS rules across the country and uncertainty about which are actually in effect. Read our latest WOTUS post [here](#).

- **Third Roundup cancer lawsuit is biggest yet.** A jury awarded a whopping $2 billion to a California couple who claimed that Monsanto failed to warn them about the health risks of using Roundup, which they believe caused their non-Hodgkins lymphoma. This was the largest of three verdicts against Monsanto to date, but the court later reduced the amount to $87 million. Approximately 13,000 more Roundup cases are pending in state and federal courts across the country, and more Roundup lawsuits are also underway against Home Depot and Lowe’s. Bayer announced in June that it would invest $5.6 billion on weed management research to find alternatives to the glyphosate used in Roundup.

- **Ohio’s Right to Farm law expanded.** Buried deep in Ohio’s budget bill were significant changes to Ohio’s Right to Farm law, the law that gives agricultural activities immunity from civil nuisance lawsuits. The changes were an obvious response to the Lake Erie Bill of Rights initiative. The revisions allow agricultural activities on any CAUV land and agricultural activities conducted by a person pursuant to a lease agreement to qualify for the immunity, in addition to the pre-
existing law’s coverage for land owners enrolled in the “Agricultural District Program” with the county auditor. The new law also attempts to clarify the types of agricultural activities that receive protection under the law, including fertilizer and manure applications and any expansions or changes in farm operations. Read more about the changes, which became effective October 17, here.

- **Congress increases farm bankruptcy limit.** Sometimes Congress can agree on something. The Family Farmer Relief Act of 2019 is one example. The federal bill, effective August 23, 2019, raised the debt limit for family farmers and fishermen seeking to use Chapter 12 bankruptcy law to reorganize debts and stay in business. Farmers may now have an aggregate debt of up to $10 million when using Chapter 12, rather than the previous limit of $4.4 million.

- **Revisions to H-2A rules begin.** Long awaited revisions to the H-2A program are underway. In October, changes were made to the labor market test for H-2A labor certification, which determines whether qualified American workers are available to fill temporary agricultural positions and if not, allows an employer to seek temporary migrant workers. Employers will no longer have to advertise a job in a print newspaper of general circulation in the area of intended employment. For the final rule, visit this link.

- **Meat and eggs are not so simple anymore.** While all is quiet in Ohio, the country continues to battle over what exactly is “meat” and when eggs must come from cage free hens. The most recent egg law arose in Michigan, whose lawmakers passed a bill that will require all eggs sold in the state by 2024 to be from birds housed in cage-free facilities. Oregon and Washington passed similar laws in 2019. Meanwhile, litigation in Arkansas has put a hold on carrying out a state law that prohibits labeling a food product as “meat” if it doesn’t derive from an animal. A similar law and lawsuit developed in Missouri last year. And in Washington DC, the USDA and FDA jockeyed for regulatory authority over “cell cultured meat” and finally agreed to divide labeling and inspection authority between the two agencies. We expect these food battles to continue in 2020.

- **Solar leasing on the rise.** Yes, solar leasing in Ohio. Thousands of acres of farmland in Ohio will soon be home to utility-scale solar energy facilities under long-term solar energy leases. The Ohio Power Siting Board has approved six solar facilities, with eight more in the works. We’ve examined the legal issues raised by solar energy leasing on farmland and have summarized them in our *Farmland Owner’s Guide to Solar Leasing*, available here.

What might the wide world of agricultural law see in 2020? We’ll tackle that question next, so stay tuned for more.
CENSUS VIDEO AWARDS COMING TO ATECH

It’s time to roll out the red carpet! On Wednesday, January 15, 2020 at 6PM, ATECH, 1565 OH 167, Jefferson will be hosting the Ashtabula County 2020 Census Video Awards at a public ceremony. The event, sponsored by the Ashtabula County Census Committee and ATECH, will give an opportunity for students from Jefferson, Edgewood, Lakeside, and Grand Valley to be recognized for their efforts in creating 30 second informational videos about the 2020 Census. This project was assigned to the Multimedia classes at these schools and worked into their curriculum for the first nine weeks.

Those participating included Jefferson students (instructor Craig Smylie) Jordan Campbell, James Folsom, Ryan smith, Samuel Vincente, Hannah Dennis, Rachel Salway, Henna Neely, Justin Miller, Laken Slawson, and Andrew Hamper; Edgewood student (instructor Lea Nesbitt) Jenna Wolfe; Lakeside students (instructor David Miller) Yuli Padilla, Iris Arrieta, Ashley Runnion, Esther Espada, and Mayra Ramirez; and Grand Valley students (instructor Nate Schick) Katie Potsko and Danielle Neely. Each student will have an opportunity to be announced and walk in on the red carpet and then have their video shown to those in attendance. After all, 9 videos are shown, an envelope containing the winning team will be brought forth and the winner will be announced as their name is revealed from the envelope. The submissions were judged on Audio and Video Quality, Editing, Creativity, Message, and Overall Presentation. Members of the Census Complete County Committee made up the panel of judges. The winners will be recognized and receive a limousine ride and meal courtesy of Ducro Funeral Services.

Participation in the Census is critical to be sure local communities receive their fair share and appropriate portion of $675 Billion of Federal and State Grant Funding that is distributed to communities. The funds support programs related to childcare, healthcare, infrastructure, economic development and senior services. Some studies estimate that for each person not counted, a community could lose up to $2000 per year for 10 years in funding.

Parents, family, friends, classmates, and teachers are all welcome and encouraged to attend the event. Light refreshments will be served. For more information, contact Chairman of the Ashtabula County Census Committee, Commissioner J.P. Ducro at jpduco@ashtabulacounty.us or 440-969-4914.
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

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

January 16, 2020 1:00 PM
New Pesticide Applicator Training – Jefferson, OH

January 22, 2020 11AM
Trumbull Dairy Discussion Economic Updates

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

February 19, 2020 6 – 9 P.M.
Fertilizer Applicator Certification Training (New Applicators)

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

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CFAES provides research and related educational programs to clientele on a nondiscriminatory basis. For more information: http://go.osu.edu/cfaesdiversity.
Fertilizer Applicator Certification Training

FEBRUARY 19, 2020  6 – 9 P.M.

Do you apply fertilizer to 50 acres or more for crops that are primarily for sale? If so, you are required by Ohio law to attend a training session or take a test to become certified. OSU Extension Trumbull County is offering a training session (no test) that will meet all certification requirements. **Pre-Registration is required a week in advance.** Cost for this training session is $35/person and includes training materials, and handouts. To register, complete the back portion of this flyer and mail with check to the address below. Please make checks payable to OSU Extension

**Location:** OSU Extension Trumbull County, 520 West Main St, Cortland, OH 44410

**Cost:** $35/person

**Contact information:** 330-638-6783 or beers.66@osu.edu

trumbull.osu.edu
2020 Fertilizer Applicator Training
Trumbull County

Name ______________________________________________

Address ______________________________________________

City ___________________ State_____ Zip_________________

Phone ____________________Email ____________________

Number of People Attending: ___________ X $35/person ___________

Please make checks payable to: OSU Extension

OSU Extension Trumbull County, 520 West Main Street, Cortland, OH 44410

For questions, contact Lee Beers at 330-638-6783 or by email at beers.66@osu.edu
Industrial Hemp: What You Need To Know

JANUARY 15, 2020  11:30A.M.

The Trumbull County Farmer Lunch Series returns for 2020! We’re kicking off the series with a presentation on the newly legal industrial hemp and will discuss agronomic, legal, and markets. If you are thinking about growing this crop in 2020, don’t miss this opportunity to learn more. To register call our office at 330-638-6783.

This series of education events is brought to you by OSU Extension Trumbull County, Trumbull County SWCD, and the USDA NRCS. 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 (Includes Lunch)

**Contact information:** 330-638-6783 or beers.66@osu.edu

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Ohio State University Extension

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USDA is an Equal Opportunity Employer, Provider, and Lender.
Questions for Speakers

Due to the complex and important topics to be discussed at the meetings, we are asking participants to pre-submit questions. There will be time for questions at the meetings, too. Pre-submitting questions will make sure that the speakers cover the information on the questions you have.

(Be specific and give details in your questions.)

1.

2.

3.

4.

You can submit more details or questions on separate paper if needed.

Meet the Speakers

Dr. Abby van den Berg, is a Research Associate Professor and Assistant Director at the University of Vermont Proctor Maple Research Center. Current research includes the long-term effects of tapping on tree growth and health and developing guidelines for tapping practices that optimize yields and sustainability, the effects of processing technologies on syrup composition and flavor, and developing tapping guidelines and best practices for birch sap collection and syrup production. She has been with the Proctor Center since 2001, and earned her Ph.D. in Plant Biology from UVM in 2007.

Mr. Steve Childs, is a Maple Specialist for Cornell University. His Maple programming focused research and Extension efforts in the areas of maple value added products, grading, management of the forest tent caterpillar, tap hole sanitation and maple tubing systems. Steve has had a long background in maple as a producer in Allegheny County New York and now as a maple specialist for Cornell.

Mr. Dan Milo, is a Food Safety Supervisor with the Ohio Department of Agriculture Division of Food Safety and a hobby maple producer in Northeast Ohio. Dan has been working for the benefit of Ohio maple producers at ODA for many years.

Dr. Gary Graham, State Maple Syrup Specialist for Ohio State University Extension and County Educator in Agriculture and Natural Resources in Holmes County.

Ohio Maple Days is a statewide program sponsored by the Ohio Maple Program, Dr. Gary Graham and OSU Extension and Ohio Agricultural Research and Development Center.
To: All Interested Maple Producers & Enthusiasts

It’s time once again to make plans and you are cordially invited to participate in the Winter 2020 Ohio Maple Days Workshops in Morrow County Thursday January 23, or Holmes County Friday January 24, or Geauga County Saturday January 25. As is our custom, the same program will be offered at all three locations.

Pre-registration is required to ensure enough materials are made for the meetings

**Topics To Be Covered:**

**FSMA Implementation Update:** The Food and Drug Administration (FDA) is implementing more portions of the Food Safety Modernization Act (FSMA) law. Producers will hear the latest sections of FSMA to be implemented in 2020 and the latest on registration requirements.

**Research on Reverse Osmosis (RO) and Syrup Flavor and Quality:** A summary of research conducted by Proctor Maple Research Center on the effects of standard and high brix sap on the composition, properties, and flavor of the syrup produced.

**Keys to High Yield Maple Production:** A summary of recent and ongoing research conducted by Proctor Maple Research Center to assess the sustainability and yields of various current tapping and sap collection practices and investigate the potential impacts of tapping on tree growth and health.

**Cornell Research Update:** A summary of recent work on tubing cleaning, tap hole sanitation, 3/16” tubing, re-tap experiments, filtering sap, syrup flavors and sap oxygen levels, maple regeneration and deer management.

**Maple Value Added Project:** A summary of improved efficiency in making maple sugar shapes (candy), making smooth maple cream, projects with maple cotton candy, maple soft drinks, maple sports goo, and making sure syrup is right for the products you are making.

**Maple Nuggets:** Every year there are lots of important updates and news to share with maple producers. Covered will be any questions submitted with the registration forms not covered by the other speakers.

**FREE Testing of Hydrometers & Refractometers:**

Hydrometers & refractometers are vital in every sugaring operation, so be sure they remain accurate. The papers can shift and read off, which could result in improper finishing density. Too low of density and syrup could mold or ferment. If finished with too high of density, the syrup will crystallize. Bring your hydrometers with you to the meetings for testing; that way you will know going into the 2020 season that your instrument is reading properly.

Sincerely, Dr. Gary W. Graham, Ohio State University Extension Specialist, Natural Resources

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**Registration Form**

Please return before January 17th

*Please checkmark the meeting attending*

- Morrow County Meeting
  - Thursday, January 23, 2020 - 8:00 AM - 4:00 PM
  - Lutheran Memorial Camp
  - 2790 State Route 61, Fulton, Ohio 43321

- Wayne/Holmes County Meeting
  - Friday, January 24, 2020 - 8:00 AM - 4:00 PM
  - Mennonite Christian Assembly Church
  - 10664 Fryburg Road, Fredericksburg, Ohio 44627

- Geauga County Meeting
  - Saturday, January 25, 2020 - 8:00 AM - 4:00 PM
  - Huntsburg Community Center
  - 12396 Madison Road
  - Middlefield, Ohio 44062

**Pre-registration is required**

(please list all who are attending)

1. ____________________________
2. ____________________________
3. ____________________________
4. ____________________________

**Address**

City __________ Zip __________

Telephone __________________

Number Attending: _____ X $40 = $ _____

Pay at the door fee $45

Please make checks payable to: OSU Extension

**MAIL REGISTRATION TO:**

OSU Extension Holmes Co.

75 East Clinton Street, Suite 109

Millersburg, OH 44654

- NO REFUNDS AFTER JANUARY 11th -

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