Hello Northeast Ohio Counties!

Today marks the last day of 2019, as well as the final day of this decade! If your new years resolution is to become a certified private pesticide applicator well then, you're in luck. We are holding new applicator training across NE Ohio (see flyer at the end of the letter) with the first being held in Ashtabula Co. on January 16th. Sign up today for a comprehensive course to help you pass the ODA core pesticide applicator exam in the new year.

As we close the book on 2019, I wish everyone a happy and prosperous new year in 2020.

Stay safe and Happy New Year!

Lee Beers
Trumbull County Extension Educator

Andrew Holden
Ashtabula County Extension Educator
Choosing Varieties & Hybrids for 2020 - Check Disease Resistance Ratings
By: Anne Dorrance, Pierce Paul

The seed suppliers want your early orders and the catalogues are all spread out on the tables. Now to begin the process of choosing the best variety or hybrid for your fields that can hold up to the all of the challenges facing soybeans and corn in Ohio. Our recommendation is to first focus on the disease and insect scores. Every company uses a different scale based on 1 to 10 – but for some companies 1 is best and for others, 10 best – so first read the fine print. In addition, some companies use a distributive disease rating scale, using words like “excellent disease package,” “good disease package,” or “poor.” While this scale is unclear as to which specific disease the hybrid is most resistant to, it can still be used as a guide for hybrid/variety selection. For instance, a hybrid listed as having an “excellent disease package” should be less susceptible to the primary diseases than one listed as having a “good disease package.” Next step – what key diseases and insect pests do we need to focus on.

**Soybeans**: the four diseases that impact Ohio farmers the most are: Phytophthora (on poorly drained soils), Frogeye leaf spot (continuous soybean fields from central Ohio-south), Sclerotinia (fields with poor air drainage – Northeast and Eastern regions), and SCN (more than 50% of fields now have detectable populations of SCN – with more than 7% in severely high populations).

**Phytophthora root and stem rot.** This pathogen, *Phytophthora sojae*, can be found in most fields in Ohio but causes disease when those fields are saturated with rains for 24 hours or more. Under these conditions highly susceptible varieties can have 100% yield loss. The heavy clays of Northwest Ohio are particularly prone to this disease. During 2019, we detected Phytophthora stem rot over a broader geographic region due to the amount of rain. In the seed catalogues, there are two ratings for resistance, 1) a listing of a *Rps* gene and 2) a quantitative resistance score on a 1 to 9 scale. The *Rps* genes were the first line of defense and have been used since the 1960s (Rps1a was the first). Based on recent check-off funded research, we can confirm that most fields in Ohio have populations of *P. sojae*, where these genes are no longer 100% effective. They might work in one spot in the field, but not 2 feet away. The next line of soybean defense is the quantitative resistance, which is many, many genes working together to limit the growth of the pathogen. Much like a teenager that is immune to all of the badgering to do their chores – it isn’t bothered at all by the presence of the pathogen. This quantitative resistance has been called many things in the seed catalogues: partial resistance, field resistance, and tolerance. Our best varieties have scores of 3 on a scale of 1 to 10 where 1 is very high resistance (really an
effective \textit{Rps} gene\) and 10 is dead. Focus on the best score rating for that seed company.

**Frogeye leaf spot.** This has now become a recurring problem for soybeans in southern up to Central Ohio. High levels of inoculum (lots of leaf spots) in the fall that can overwinter in Ohio, so this is especially important for those fields that are continuous soybean. The first thing is if you had Frogeye at the end of the season in 2019, please do not plant the same variety back in that field. I do that to create the best opportunity for our research plots to develop disease for fungicide studies, and since I have that covered, you don’t need to do that. Any frogeye in fields in 2019 (conditions were not as favorable as previous years) means it’s time to choose something with better resistance scores. A resistant cultivar will not develop frogeye, so no yield hit and no added input costs for fungicides if conditions are favorable for disease to develop.

**Sclerotinia stem rot.** The infections for this disease occur during flowering under conditions of cool temperatures (70s F) and high humidity. High plant population and poor air drainage can also favor this disease. Resistance to this pathogen, \textit{Sclerotinia sclerotiorum}, is also quantitative (many genes) and some are associated with limiting pathogen growth but also with longer internodes to help with disease escape. The structure, sclerotia, looks like a mouse or rat dropping, and can survive for long periods of time if they are buried. This is one soybean disease where no-till can favor the degradation of the sclerotia.

**Soybean Cyst Nematode.** This nematode continues to expand in the number of fields it can be detected in (> 50%) in Ohio. More importantly, we are also identifying fields with super high numbers of SCN (7% of those sampled during 2018 & 2019)! It is very important to continue to purchase varieties with SCN resistance. This is a success story. Planting soybean varieties with resistance has kept this nematode at very low levels for over 20 years. Based on earlier reports from the ’90s, it had the potential to become a major problem, but then the companies all worked hard to provide new varieties with SCN resistance. Now, as you would expect, similar to Phytophthora, where the same resistance has been deployed for 20 years, we do have a number of fields in Ohio where the SCN populations are adapting to PI 88788 or Peking or both sources of resistance. Interestingly, not like the \textit{Rps} genes of Phytophthora where they work or they don’t, SCN adapts slowly by increasing the number of successful feeding sites on the roots of resistant plants. So early in the process, we don’t see the decline in SCN numbers when soil tests are collected and yields begin to drop. Later in the process, increases in SCN occur overall in the field and yield loss is similar to that of a susceptible variety. We are in the midst of wrapping up this statewide survey as part of the SCN coalition (https://www.thescncoalition.com/) to assess where SCN is in Ohio and if it has adapted. Summary results from this for Ohio will be coming in April.
Gray leaf spot (GLS) of corn. This is still the most frequently occurring foliar disease of corn in Ohio and neighboring states, but thanks to genetic resistance, the impact of this disease is low in most years. On rare occasions when susceptible hybrids are planted under warm, humid conditions in river-bottom fields, yield loss can exceed 50%. Resistance in the case of GLS does not mean “no disease,” it means less disease or low disease severity. Compared to susceptible hybrids, fewer and smaller lesions develop on resistant hybrids, leading to slower disease spread from the lower to the upper leaves. Some companies rank their hybrids for resistance to GLS on a 1 to 9 scale, with 1 being most resistant and 9 being most susceptible. However, some companies do the opposite, with hybrids with higher scores being more resistant than those with low scores.

Northern Corn Leaf Blight (NCLB). Like GLS, this is one of the most common leaf diseases of corn in Ohio, and over the last few years, NCLB has been more severe than GLS. Two types of resistance are available to protect against races of the fungus that cause NCLB: partial resistance (non-race specific), which protects against all known races of the fungus, and race-specific resistant, which is controlled by single Ht genes and, as the name suggests, protects against specific races of the pathogen. Partial resistance is expressed as a reduction in the number and size of the lesions, and the amount of spores produced in the lesions, as well as an increase in the length of time it takes for new lesions to develop and a new crop of spores to be produced. Race-specific resistance is controlled by one or more Ht genes, such as Ht1, Ht2, Ht3, and HtN. Resistance conferred by Ht1, Ht2, and Ht3 is expressed as small chlorotic lesions with limited sporulation, whereas resistance conferred by HtN results in fewer, smaller lesions, similar to what is observed with partial resistance. For years, races 0 and 1 were the most predominant races of the NCLB fungus in Ohio. If we assume that these races are still the most prevalent, the fact that we continue to see susceptible reactions on multiple hybrids at multiple locations across the state suggests that we are either planting hybrids without Ht genes (susceptible to races 0 and 1) or with Ht1 only (susceptible to race 1). Avoid planting hybrids without Ht resistance. Click here for more on NCLB resistance: https://agcrops.osu.edu/newsletter/corn-newsletter/select-hybrids-resistance-northern-corn-leaf-blight-how-does-it-work

For diseases like ear rots for which there is very little information in seed catalogs on disease resistance, use your own experience as a guide for making hybrid selection. For instance, if the hybrid you planted this or last season (or five seasons ago) ended up with high levels of Gibberella ear rot and vomitoxin, it means that the hybrid is susceptible. Avoid planting it in that same field next year. Also, since resistance may change over time, your experience with a hybrid may be just as good as or even better than the information in some seed catalogs when it comes to disease susceptibility.
Was this the year you expected or hoped for?

By Chris Penrose, Extension Educator, Agriculture and Natural Resources, Morgan Co.

Source: https://u.osu.edu/beef/2019/12/31/was-this-the-year-you-expected-or-hoped-for/

I now have been writing articles in this column for around 25 years and I am always trying to come up with something different and beneficial for beef producers around the state. As I thought about a topic, with age and experience, we also gain perspective. For those of us that have been in the beef business for more years than we care to admit, was this the year you expected or hoped for? Many times what we expect and what we hope for are not the same, are they? Maybe we can close the gap between the two. For example, I expected to have more problems this past summer with invasive weeds like Spotted Knapweed, but I hoped I would not and I did not. Why? Because in 2018, I was very aggressive on controlling every plant I could find. I did the same this past summer. I hoped to have had put up more square bales of hay this summer but the help was not there or it was about to rain, so I made more round bales. I expected that might be the case, so I tried to save as many square bales as I could last winter and I have extra two year old hay carried over for this winter to fill in a potential void. I now hope and expect to have enough to get me through the winter, even if it is a bad one.

I hoped I would get hay up sooner this past summer, but I expected that would not happen, so I grazed some hay fields in early April to set them back a few weeks and hay quality from those fields was a little better. However, I expect that I will need to provide a supplement to my cattle to help balance the nutritional needs for some of the winter. Hay quality was very poor last year and some cows around the state starved to death with a full stomach. Early forage test results from this year’s hay crop suggests we could have the same problem this winter.

My point here is that we do have some control to align the differences between what we hope for and what we expect. Who is in control, the cattle or you? The forages or you? We can take control by planning, anticipating what may go wrong and being prepared to address whatever situation arises.

Things are different now than they were 30-40 years ago. We have more challenges with wildlife, invasive plants and insects, more eyes on us, and some groups that think we should not be raising cattle or eating beef. Planning for these issues and issues we usually face such as weather, illness, fence, forages and facilities will help us have a more successful 2020. Genetics have improved tremendously over the years and succeeding with our herd is more than one pasture, July cut hay, and Ohio River salt. We are weaning calves twice the size that we did 40 years; we have less room for error now.
I hoped for better feeder calf prices this past fall and got what I expected but more than it could have been. Developing relationships and improving the quality of your product as I have tried to do over the years gave me a good price for the environment we are in. As Mark Wahlberg said in the movie Deepwater Horizon, “Hope is not a good plan”. Hoping for something without doing anything will lead in disappointment and disaster. So now is the time to inventory our feed supplies, determine if we have enough feed for the winter, even in a worst case scenario. If not, what are we going to do? Let’s make a plan now. When you have a chance, walk through your hay and pasture fields and determine what can be done to improve them such as frost seeding, lime and fertilizing, potential weed control, and potentially improving grazing practices. Check fence; see if posts or wire needs replaced, and inspect working facilities and buildings to see if repairs need to be made before something major occurs.

When you have the chance, let people and groups know about the benefits of grazing cattle. I bet there are no trees sequestering carbon during this time of the season, but if snow is not on the ground, I bet some of my grass is. Our cattle take an otherwise unusable crop for humans but beneficial for the environment and convert the sustainable crop into nutrient dense, delicious food and many other valuable products.

With proper planning now, evaluating our situation and needs, developing a strategy to handle issues, and even promoting the good things we do, maybe what we hope for and expect can be the same. This year wasn’t the year that I hoped for but it was better than I expected.

**The Ohio Ag Law Blog -- Ag Law Harvest**

By: Ellen Essman, Senior Research Associate, Senior Research Associate Monday, Source: [https://farmoffice.osu.edu/blog/mon-12232019-1141am/ohio-ag-law-blog-ag-law-harvest-0](https://farmoffice.osu.edu/blog/mon-12232019-1141am/ohio-ag-law-blog-ag-law-harvest-0)

Hemp, drones, meat labeling and more—there is so much going on in the world of ag law! With so much happening, we thought we’d treat you to another round of the Harvest before the holidays.

**Hemp for the holidays.** As 2020 and the first growing season approach, there has been a flurry of activity surrounding hemp. States have been amending their rules and submitting them to the USDA for approval in anticipation of next year. In addition, just last week USDA extended the deadline to comment on the interim final hemp rule from December 30, 2019 to January 29, 2020. If you would like to submit a comment, you can do so here. To get a refresher on the interim rule, see our blog post here.
In other hemp news, EPA announced approval of 10 pesticides for use on industrial hemp. You can find the list here. Additional pesticides may be added to the list in the future.

**Congress considers a potential food safety fix.** It’s likely that over the last several years, you’ve heard about numerous recalls on leafy greens due to foodborne illnesses. It has been hypothesized that some of these outbreaks could potentially be the result of produce farms using water located near CAFOs to irrigate their crops. A bill entitled the “Expanded Food Safety Investigation Act of 2019” has been introduced to tackle this and other potential food safety problems. If passed, the bill would give FDA the authority to conduct microbial sampling at CAFOs as part of a foodborne illness investigation. The bill is currently being considered in the Senate Health, Education, Labor, and Pensions Committee.

**Animal welfare bill becomes federal law.** In November, the President signed the “Preventing Animal Cruelty and Torture Act” (PACT), into law. PACT makes it a federal offense to purposely crush, burn, drown, suffocate, impale, or otherwise subject non-human mammals, birds, reptiles, or amphibians to serious bodily injury. PACT also outlaws creating and distributing video of such animal torture. The law includes several exceptions, including during customary and normal veterinary, agricultural husbandry, and other animal management practices, as well as during slaughter, hunting, fishing, euthanasia, etc.

**No meat labeling law in Arkansas?** Last winter, Arkansas passed a law that made it illegal to “misbrand or misrepresent an agricultural product that is edible by humans.” Specifically, it made it illegal to represent a product as meat, beef, pork, etc. if the product is not derived from an animal. Unsurprisingly, the law did not sit well with companies in the business of making and selling meat substitutes from plants and cells. In July, The Tofurky Company sued the state in the U.S. District Court for the Eastern District of Arkansas, Central Division, claiming the labeling law violates the First and Fourteenth Amendments, as well as the dormant Commerce Clause. On December 11, the District Court enjoined, or stopped Arkansas from enforcing, the labeling law. This means that the state will not be able to carry out the law while the District Court considers the constitutionality of the law. We will be following the ultimate outcome of this lawsuit closely.

**Ag wants to be part of the drone conversation.** The Senate Committee on Commerce, Science, and Transportation is currently considering a bill called the “Drone Advisory Committee for the 21st Century Act.” If passed, the bill would ensure that the Federal Aviation Administration (FAA) includes representatives from agriculture, forestry, and rangeland, in addition to representatives from state, county, city, and Tribal governments on the Drone Advisory Committee (DAC). Thus, such representatives would be part of the conversation when the DAC advises the FAA on drone policies.
Ag financing tools may get an upgrade. The “Modernizing Agriculture and Manufacturing Bonds Act,” or MAMBA (what a great name) was introduced very recently in the House Committee on Ways and Means. Text of the bill is not yet available, but when it is, it should be located here. According to this fact sheet, the bill would make a number of changes to current law, including increasing “the limitation on small issue bond proceeds for first-time farmers” to $552,500, repealing “the separate dollar limitation on the use of bond proceeds for depreciable property” which would mean farmers could use the full amount for equipment, breeding livestock, and other capital assets, and modifying the definition of “substantial farmland” to make it easier for beginning farmers to gain access to capital.

Shoring up national defense of agriculture and food is on the docket. The Committee on Agriculture, Nutrition, and Forestry sent the National Bio and Agro-Defense Facility Act of 2019 (NBAF) to the floor of the Senate for consideration. Among other things, the bill would allow the USDA, through the National Bio and Agro-Defense Facility, to address threats from human pathogens, zoonotic disease agents, emerging foreign animal diseases, and animal transboundary diseases, and to develop countermeasures to such diseases. Essentially, USDA and NBAF would see to national security in the arena of agriculture and food.

We hope you have a wonderful holiday season! We will be sure to continue the ag law updates in the next decade!

What’s in my Corn? Insect Management Traits in Corn Hybrids

By: Kelley Tilmon, Andy Michel

Corn hybrid selection is about more than maturity and agronomic properties. Many corn hybrids also come with a package of Bt traits for the management of various insects below-ground (for example corn rootworm) and above-ground (for example, corn borer) pests. These traits can add substantially to the cost of the seed so it’s worth evaluating which ones you really need. In fields without a consistent history of insect pest pressure Bt traits are an added cost that likely won’t pay for itself. Sometimes you only need protection against soil pests, sometimes against above-ground pests, and sometimes neither. But how do you know what Bt traits the various hybrids contain and what insects they are meant to manage? This can be confusing or hard to figure out.
There is an excellent resource available to help with this – the Handy Bt Trait Table. This invaluable reference is written by Dr. Chris DiFonzo at Michigan State University and is updated every year. In one place it lists what types of Bt are present in which corn hybrids, what insects they are targeted for, and for which insects resistance to a given Bt protein has been documented (leading to a loss of efficacy). You can find the Handy Bt Trait Table linked on the OSU Ag Insects website. Check it out to learn which Bt traits are in which hybrids so you can make the most informed and economical decisions for your farm.

https://aginsects.osu.edu/bt-corn-trait-table

What’s on our Christmas wish list? More written farmland leases in 2020
By: Peggy Kirk Hall, , Associate Professor, Agricultural & Resource Law, Associate Professor, Agricultural & Resource Law
Source: https://farmoffice.osu.edu/blog/wed-12182019-325pm/what%E2%80%99s-our-christmas-wish-list-more-written-farmland-leases-2020

Christmas is a good time to make wishes for the peace and well-being of others. One of our top wishes this year does that: we hope for all Ohio farmers to have written farmland leases. It’s an odd wish, we know. But putting leases in writing can help landowners and farm tenants live in peace, and we like that.

Farm leases have always been prone to being verbal agreements, sealed with a handshake. Simplicity and trust are two plausible reasons we’ve done business that way. But a written farm lease can be simple, and using one doesn’t have to mean that the parties don’t trust each another. Instead, a lease can keep distrust from arising between the parties by anticipating needs and foreclosing uncertainties and disagreements.

One of the strongest disagreements we hear about verbal farm leases is whether one party can terminate the lease without giving the other much notice of that termination. For example, if Riley has rented land from Dale every year for the past ten years, can Dale terminate the lease for the 2020 planting season in February of 2020? What if Riley has already purchased inputs, added nutrients, or planted a cover crop? Or perhaps Dale passes away at the end of the year. Will Riley lose the lease if Dale’s children sell the land before planting season begins? These are the uncertainties that can lead to fighting, distrust, and sometimes, costly and difficult litigation.

A written farmland lease can prevent these uncertainties that can arise with verbal leases. A written lease can state how much notice is required in order for one party to terminate the lease. It can address other potentially problematic issues, such as who
repairs drainage tiles, fences and access points, how to address new subsurface
drainage and soil fertility needs, and whether and how to adjust annual lease rental
rates. When an issue or question about the arrangement develops, the written farm
lease can provide the already agreed-upon answer or solution.

When it comes to the peace and well-being of farmers, written farmland leases are a
good thing to wish for. So let’s keep the Grinch of uncertainty from showing up in 2020,
and put those farmland leases in writing. For our resources on what to include in a
written farm lease, how to create an enforceable lease, and other farm lease needs,
please visit this page.

**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

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

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

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

January 22, 2020 11AM  
Trumbull Dairy Discussion  
Economic Updates

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

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

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Ashtabula County Extension Office  
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Jefferson, OH 44047  
440-576-9008  
holden.155@osu.edu  
ashtabula.osu.edu
2020 New Pesticide Applicator Trainings Offered In NEO

A Private Pesticide Applicator’s License is for those who want to apply restricted-use pesticides on his/her own land (or rented land) and produce an agricultural commodity. ODA requires each private applicator to take & pass the CORE (safety) test and any category(ies) that correspond to the crops he/she produces. This training will focus primarily on the CORE test.

There are 7 categories in which one may be certified via testing through ODA: Grain and Cereal Crops (category 1), Forage Crops and Livestock (category 2), Fruit and Vegetable Crops (category 3), Nursery and Forest Crops (category 4), Greenhouse Crops (category 5), Fumigation (category 6), and Specialty Uses (category 7).

Training Dates:

All New Pesticide Applicator Trainings are from 1:00pm to 4:00pm and will cost $35 per person.

Thursday, January 16, 2020 at the Ashtabula Co. Extension office in Jefferson, Ohio. 440-576-9008
* To Register for this training make check payable to OSU Extension and mail to:
Ashtabula County OSU Extension, 39 Wall Street, Jefferson, OH 44047

Monday, February 10, 2020 at the Geauga Co. Extension office in Burton, Ohio. 440-834-4656
* To Register for this training make check payable to OSU Extension and mail to:
Geauga County OSU Extension, P.O. Box 387, 14269 Clairdon Troy Rd., Burton, OH 44021

Monday, March 2, 2020 at the Trumbull Co. Extension office in Cortland, Ohio. 330-638-6783
* To Register for this training make check payable to OSU Extension and mail to:
Trumbull County OSU Extension, 520 West Main Street, Suite 1, Cortland, OH 44410

Registration Information: Cost for the training is $35 per person. Cost includes CORE training materials, handouts, and light refreshments. Category study materials can be purchased at an additional cost at each Extension Office.

Name__________________________________________

Address__________________________________________

Phone_________________________ Email address__________________________

Training I will be attending (check one):

____ January 16, 2020 at the Ashtabula County Extension office. Registration due by January 9
____ February 10, 2020 at the Geauga County Extension office. Registration due by February 3
____ March 2, 2020 at the Trumbull County Extension office. Registration due by February 24
Ashtabula County  
**January 16, 2020**  
Ashtabula County  
Extension Office  
39 Wall Street,  
Jefferson, OH 44047  
440-576-9008

Geauga County  
**February 10, 2020**  
Geauga County  
Extension Office  
14269 Claridon-Troy Road,  
Burton, Ohio 44021  
440-834-4656

Trumbull County  
**March 2, 2020**  
Trumbull County  
Extension Office  
520 West Main Street,  
Cortland, Ohio 44410  
330-638-6783

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**CFAES**  
**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.
2020 Northeast Ohio ODA Testing Sessions

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>
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<tbody>
<tr>
<td>Ashtabula County</td>
<td>*Testing Begins at 10:00 a.m.</td>
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<tr>
<td>Location: Ashtabula County Extension Office</td>
<td>January 21</td>
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<tr>
<td>39 Wall Street</td>
<td>March 5</td>
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<tr>
<td>Jefferson, OH 44047</td>
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<tr>
<td>For Directions Call 440-576-9008</td>
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<td>Geauga County</td>
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<td>February 19</td>
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<tr>
<td>Patterson Center Basement</td>
<td>May 20</td>
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<tr>
<td>14269 Claridon – Troy Road</td>
<td>October 15</td>
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<tr>
<td>Burton, OH 44021</td>
<td>April 15</td>
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<tr>
<td>For Directions Call 440-834-4656</td>
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<td>Lake County</td>
<td>*Testing Begins at 9:00 a.m.</td>
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<td>Location: Richard L. Martin Learning &amp; Business Center (ULAB)</td>
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<tr>
<td>1981 Blase Nemeth Road</td>
<td>April 13</td>
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<td>Painesville Twp., OH 44077</td>
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<td>For Directions Call 440-350-2582</td>
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<tr>
<td>Portage County</td>
<td>*Testing Begins at 10:00 a.m.</td>
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<tr>
<td>Location: Portage County Extension Office</td>
<td>March 19</td>
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<tr>
<td>705 Oakwood Street</td>
<td>September 17</td>
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<tr>
<td>Ravenna, OH 44266</td>
<td>May 21</td>
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<td>For Directions Call 330-396-6432</td>
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<td>Trumbull County</td>
<td>*Testing Begins at 10:00 a.m.</td>
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<tr>
<td>Location: Trumbull County Extension Office</td>
<td>January 13</td>
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<tr>
<td>520 West Main Street, Suite #1</td>
<td>April 13</td>
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<tr>
<td>Cortland, OH 44410</td>
<td>February 10</td>
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<tr>
<td>For Directions Call 330-638-6783</td>
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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

ohiostateprecisionag.com
extension.osu.edu
Industrial Hemp: What You Need To Know

JANUARY 15, 2020 11:30 A.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

trumbull.osu.edu
No matter the size of your woodlot, your trees have value that increase with time, proper management, and optimal health. Join us as we explore tools and resources to sustainably and profitably manage woodlands on your property. Learn about federal programs that can help you achieve your timber and wildlife goals for the new year!

This workshop is being offered in Trumbull County on 1/23/2020 and Portage County on 2/20/2020. All are welcome to attend either workshop location regardless of residence.

This workshop is FREE, but registration is requested in order to prepare materials. If you need special accommodation for this meeting, please contact Kara MacDowell at 330-282-8622.
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

Visit [trumbull.osu.edu](http://trumbull.osu.edu) for more information.
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
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.)*

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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.

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.

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

DETAILS:
8:00 Registration Table and Trade Show
8:30 Welcome, Introductions, OSU Extension & OMPA Reports
9:00 FSMA Update Mr. Dan Milo
9:30 RO Impact On Maple Flavor Dr. Abby van den Burg
10:45 Tubing Research Update Mr. Steve Childs
12:00 Lunch & Trade Show
1:00 Keys to High Yield Dr. Abby van den Burg
2:00 Maple Value Added Project Mr. Steve Childs
3:00 Maple Nuggets Dr. Gary Graham
3:30 Speaker Panel Abby, Steve, Dan, Gary
4:00 Trade Show Closes

DATES/LOCATIONS:
Thursday, January 23 - Morrow County Lutheran Memorial Camp 2790 State Route 61 Fulton, Ohio 43321
Friday, January 24 - Wayne/Holmes County Mennonite Christian Assembly Church 10664 Fryburg Road Fredericksburg, Ohio 44627
Saturday, January 25 - Geauga County Huntsburg Community Center 12396 Madison Road Middlefield, Ohio 44062

These workshops will happen on the scheduled dates/times NO matter the weather conditions. Plan accordingly for your safe travels.

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

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*** To Help Us Prepare *** we are asking that you pre submit your questions/concerns/comments regarding any of the topics to be presented at the meetings (see back of registration form). The meeting forum will allow for questions from the floor and a speaker panel at the end of the day for more questions.

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

MAIL REGISTRATION TO: OSU Extension Holmes Co. 75 East Clinton Street, Suite 109, Millersburg, OH 44654 - NO REFUNDS AFTER JANUARY 11th -
Contact: Ashley Gerber—330-674-3015

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)
Name(s):  

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

Registration Payment Deadline is January 17th