Hello Northeast Ohio Counties!

We have a several great program opportunities coming up in the next couple of weeks at OSU Extension! This Saturday we will be at Hartford Orchards where you can learn how to prune fruit trees, on Tuesday our Trumbull Crop Lunch will focus on the weather for the 2019 season, then we have the Beef Clinic and the New Pesticide Applicator Training on the 12th.

You can find more information on each of these upcoming programs in the newsletter, or you can also call 330-638-6783 or 440-576-9008 for more information.

Stay safe!

Lee Beers
Trumbull County Extension Educator

Andrew Holden
Ashtabula County Extension Educator
Trumbull Farmer Lunch – Tuesday, March 5, 2019

The next installment of our Trumbull Farmer Lunch series will be on March 5 at 11:30AM at the Trumbull Count Ag and Family Education Center in Cortland, OH. Our speaker will be Dr. Aaron Wilson with the Ohio State University Byrd Polar and Climate Research Center. Dr. Wilson will discuss our changing climate in Ohio and what that means for our agriculture in our region. If you want to know what to expect for the 2019 planting and growing season, here is your chance to talk with a climate expert.

Cost for the lunch is $7/person and includes lunch, handouts, and refreshments. Please call 330-638-6783 to register. Registration is requested by Friday, March 1st.

Legal defenses for agricultural production activities
By: Peggy Kirk Hall, Associate Professor, Agricultural & Resource Law
Source: https://farmoffice.osu.edu/blog/sun-02242019-606pm/ohio-agricultural-law-blog-legal-defenses-agricultural-production-activities

Whether producing crops, livestock, or other agricultural products, it can be challenging if not impossible for a farmer to completely prevent dust, odors, surface water runoff, noise, and other unintended impacts. Ohio law recognizes these challenges as well as the value of agricultural production by extending legal protections to farmers. The protections are “affirmative defenses” that can shield a farmer from liability if someone files a private civil lawsuit against the farmer because of the unintended impacts of farming. A court will dismiss the lawsuit if the farmer successfully raises and proves an applicable affirmative legal defense.

In our latest law bulletin, we summarize Ohio’s affirmative defenses that relate to production agriculture. The laws afford legal protections based on the type of activity and the type of resulting harm. For example, one offers protections to farmers who obtain fertilizer application certification training and operate in compliance with an approved nutrient management plan, while another offers nuisance lawsuit protection against neighbors who move to an agricultural area. Each affirmative defense has different requirements a farmer must meet but a common thread among the laws is that a farmer must be a “good farmer” who is in compliance with the law and utilizing generally accepted agricultural practices. It is important for farmers to understand these laws and know how the laws apply to a farm’s production activities.

To learn more about Ohio’s affirmative defenses for agricultural production activities, view our latest law bulletin HERE.
The 2019 Western PA Grazing Conference

Clarion, PA – This year’s 22nd Annual Western PA Spring Grazing Conference will feature Dr. Fred Provenza; a professor emeritus of Utah State University, and a pioneer in understanding forage behavior and how behavior links soils and plants with herbivores and humans. The two-day conference will be held Wednesday, March 13th and Thursday, March 14th, 2019 at the Trinity Point Church of God, located just south of Interstate 80, Clarion exit 62.

Dr. Fred Provenza is an accomplished professor, researcher, author, and rancher. He has spoken at over 325 international meetings and has authored or co-authored 250 publications. He will lead discussions on the connections of behavior and the health of soil, plants, herbivores, and humans.

Informative sessions will be offered not only for beef farmers, but for equine and dairy farmers as well.

Breakout Sessions include the following: Managing Soil Fertility in Pastures & Hayfields, Grazing Management to Balance Animal Feed Demand & Pasture Forage Supply (Ed Rayburn), Grazing Management for Equine Farms, Links Between Sugars, Starches & Equine Laminitis (Laura Kenny), Dairy Grazing – Perennial & Annual Plants (Dave Hunsberger), Grass Fed Meat – Improving Locally – Farmers, Soil & Consumer Health (Junia Isiminger), Regenerative Management Using Diverse Native Species & Tall Grass Grazing, Finding Solutions to Annoying Problems (Russ Wilson), Soil Health in Grazing Systems (Bob Hendershot), Why Grass Fed Makes Sense, The Medical Reason Grass Fed Beef is Healthier (Ron Gargasz), Winter Grazing & Soil Impacts (George Lake). There will also be a farmer panel with Chris Leiden, AJ O’Neil, Bob Whittaker, in addition to the speaker panel.

Registration required by 03/06/19. $85 for 2-days & evening session, $45 for 1-day only (Continental Breakfast & Lunch included). Bonus evening session with Dr. Fred Provenza on March 13 $20.

To register or for more information visit Headwaters RC&D. | 814-503-8653 | info@headwaterspa.org | www.headwaterspa.org

Consider rotating use of GMO seeds to avoid resistance

By: Alayna DeMartini & Curtis Young
Source: https://agnr.osu.edu/news/consider-rotating-use-gmo-seeds-avoid-resistance
It may be that a certain type of genetically modified corn or soybean seed works well, bringing high yields and sizeable profits.

But planted in the same field, year after year, the same seed might not be the right choice, said Curtis Young, an entomologist with The Ohio State University College of Food, Agricultural, and Environmental Sciences (CFAES).

When the same genetically engineered crops are grown in the same field repeatedly—crops developed to produce toxins that kill insects, for example, or to survive weed-killing sprays—the target insects or weeds begin to adapt. They can become resistant to the toxins or weed killer.

Take, for example, soybean seeds that are genetically engineered to tolerate glyphosate, a chemical that kills weeds. A farmer might want to plant soybeans that tolerate glyphosate so he or she can later spray a weed killer containing glyphosate, not hurting the crop but killing the weeds that are sucking up the nutrients and water.

The problem is that soybean seeds that can withstand glyphosate were followed by the creation of corn seeds that can also tolerate the chemical. So in a field where corn and soybeans are rotated, glyphosate could be used every year, multiple times, resulting in the rapid development of weeds that can tolerate glyphosate.

“The number of weeds that are now glyphosate-resistant is incredible,” Young said.

“We have to remember that genetically modified seeds are tools we can choose to use and not abuse,” Young said. “We can’t allow ourselves to get pulled into doing one thing over and over again.”

Young will be one of the numerous speakers at the upcoming Conservation Tillage and Technology Conference set for March 5–6 on Ohio Northern University’s campus in Ada, Ohio. The event is an annual program during which speakers cover a range of topics including nutrient management, digital technologies for farmers, cover crops, soil health, and best management practices to improve water quality. The conference is sponsored by CFAES and includes speakers from the college as well as the agriculture industry.

As farmers decide on seed purchases to plant this spring, Young recommends that they consider alternatives to using the same genetically modified seed on a given field.

For example, a grower who has been using soybeans that can tolerate glyphosate might opt to plant seeds that don’t offer that ability. When weeds surface, the grower might try a different weed killer to eliminate the weeds from the field, Young said.
Is it risky? It might be, Young said. But paying every year for higher cost genetically engineered seeds when they might not be needed comes at a cost, he said.

“That’s where you really have to put the pencil to the paper and figure out whether your main goal is maximum yield or maximum profit.”

Ohio Agricultural Law Blog – Hemp Bill Introduced in Ohio Senate

By: Evin Bachelor, Law Fellow, OSU Extension Agricultural & Resource Law Program
Source: https://farmoffice.osu.edu/blog/thu-02212019-1045am/ohio-agricultural-law-blog-%E2%80%93-hemp-bill-introduced-ohio-senate

Ten of Ohio’s thirty-three state senators have introduced and sponsored legislation that would decriminalize licensed hemp cultivation and production in the state of Ohio. These senators represent a bipartisan mix of seven Republicans and three Democrats. After the passage of the Farm Bill, we sent out a blog post that explained how current Ohio law does not distinguish hemp from marijuana, meaning that hemp is currently just as illegal under Ohio law as marijuana. Senate Bill 57 would change that, if passed.

What Senate Bill 57 would change.

Senate Bill 57, if passed in its current form, would effectively decriminalize hemp cultivation and the production and sale of hemp products, so long as the activities are conducted under a license. The bill establishes definitions for cannabidiol and hemp under Ohio law. Specially, hemp would be defined as:

“the plant Cannabis sativa L. and any part of that plant, including the seeds thereof and all derivatives, extracts, cannabinoids, isomers, acids, sales, and salts of isomers, whether growing or not, with a delta-9 tetrahydrocannabinol concentration of not more than three-tenths per cent on a dry weight basis.”

Importantly for hemp cultivators and producers, this bill would remove hemp from Ohio’s Controlled Substances Act. We previously noted in a blog post that Senate Bill 229 from the last General Assembly was set to remove Ohio’s controlled substances schedules from the Ohio Revised Code, and instead would allow the Ohio Board of Pharmacy to create the schedules by rule. That bill passed, and would have allowed sales of CBD oils that had obtained approval from the U.S. Food and Drug Administration. However, if Senate Bill 57 passes the Ohio General Assembly, the Ohio
Board of Pharmacy would no longer be able to adopt rules designating hemp and hemp products as controlled substances.

**The (potential) Ohio Hemp Cultivation Program.**

The Director of the Ohio Department of Agriculture (ODA) would be required to establish a program to monitor and regulate hemp cultivation consistent with the requirements of the Farm Bill that Congress passed last year. The Farm Bill authorizes the cultivation of hemp and the production of hemp products through state licensing programs. Ohio’s program would include a licensing program. Licenses will be valid for five years. ODA and universities would not be required to obtain a license, but their activities would be limited to certain activities listed in the bill. Hemp cultivation would still be illegal without a license, and could result in criminal misdemeanor charges.

The bill authorizes ODA to adopt regulations regarding:
- What the license application looks like
- What information the license application requires
- How much a license costs
- How background check will be conducted, and what they will examine
- How ODA will issue, renew, deny, suspend, and revoke hemp cultivation licenses
- How ODA will keep track of the lands where hemp is grown
- How ODA will test for delta-9 tetrahydrocannabinol concentration
- How hemp products must be labeled
- How ODA will enforce the rules and conduct inspections
- “Any other requirements or procedures necessary to administer and enforce” Ohio’s hemp cultivation program

The bill would deny licenses to any person who has pleaded guilty to or been convicted of a felony relating to controlled substances in the ten years before submitting their application, along with any person found to have falsified information on their application.

To administer the program, the bill would create a Hemp Cultivation Fund in the Ohio Treasury. Application fees, fees collected from program operations, money appropriated to the program by the General Assembly or ODA, and any gifts or grants may be deposited into the fund for use in program administration.

At this time, the bill has only been introduced and referred to the Ohio Senate Agriculture Committee. Bills are often subject to amendment, so stay tuned to the Ag Law Blog for updates on Senate Bill 57. For the text of the bill, click HERE, or visit the Ohio General Assembly’s Senate Bill 57 webpage HERE.
**Plants short-cut evolution by taking genes from neighbors**

By: University of Sheffield

Source: [https://www.sciencedaily.com/releases/2019/02/190218153211.htm](https://www.sciencedaily.com/releases/2019/02/190218153211.htm)

Scientists have discovered that grasses are able to short cut evolution by taking genes from their neighbours.

The findings suggest wild grasses are naturally genetically modifying themselves to gain a competitive advantage.

Understanding how this is happening may also help scientists reduce the risk of genes escaping from GM crops and creating so called "super-weeds" -- which can happen when genes from GM crops transfer into local wild plants, making them herbicide resistant.

Since Darwin, much of the theory of evolution has been based on common descent, where natural selection acts on the genes passed from parent to offspring. However, researchers from the Department of Animal and Plant Sciences at the University of Sheffield have found that grasses are breaking these rules. Lateral gene transfer allows organisms to bypass evolution and skip to the front of the queue by using genes that they acquire from distantly related species.

"Grasses are simply stealing genes and taking an evolutionary shortcut," said Dr Luke Dunning.

"They are acting as a sponge, absorbing useful genetic information from their neighbours to out compete their relatives and survive in hostile habitats without putting in the millions of years it usually takes to evolve these adaptations."

Scientists looked at grasses -- some of the most economically and ecologically important plants on Earth including many of the most cultivated crops worldwide such as: wheat, maize, rice, barley, sorghum and sugar cane.

The paper, published in the journal *Proceedings of the National Academy of Sciences*, explains how scientists sequenced and assembled the genome of the grass *Alloteropsis semialata*. Studying the genome of the grass *Alloteropsis semialata* -- which is found across Africa, Asia and Australia -- researchers were able to compare it with approximately 150 other grasses (including rice, maize, millets, barley, bamboo etc.). They identified genes in *Alloteropsis semialata* that were laterally acquired by comparing the similarity of the DNA sequences that make up the genes.
"We also collected samples of *Alloteropsis semialata* from tropical and subtropical places in Asia, Africa and Australia so that we could track down when and where the transfers happened," said Dr Dunning.

"Counterfeiting genes is giving the grasses huge advantages and helping them to adapt to their surrounding environment and survive -- and this research also shows that it is not just restricted to *Alloteropsis semialata* as we detected it in a wide range of other grass species."

"This research may make us as a society reconsider how we view GM technology as grasses have naturally exploited a similar process.

"Eventually, this research may also help us to understand how genes can escape from GM crops to wild species or other non-GM crops, and provide solutions to reduce the likelihood of this happening."

"The next step is to understand the biological mechanism behind this phenomenon and we will carry out further studies to answer this."

The research received funding from the European Research Council (ERC) Natural Environmental Research Council (NERC) and the Royal Society.

**Grain Marketing Webinars Offered**

Source: [https://u.osu.edu/ohioagmanager/2019/02/11/grain-marketing-webinars-offered/](https://u.osu.edu/ohioagmanager/2019/02/11/grain-marketing-webinars-offered/)

Do you want to do a better job of pricing your corn and soybeans? Is grain marketing a confusing and daunting task? If so, this webinar is for you!

Ohio State University Extension is offering a two-session webinar focused on helping farmers become better grain marketers. Participants will have a better understanding of risk, marketing tools, and the development of written marketing plans. These workshops are funded through a North Central Risk Management Education Grant. Additional information can be found at [http://go.osu.edu/grainplan](http://go.osu.edu/grainplan).

Participants will learn to identify their personal risk tolerance and their farm's financial risk capacity. Both of these are important in developing a successful grain marketing plan. Participants will also learn how crop insurance products effect marketing decisions and effect risk capacity. Grain marketing consists of understanding and managing many pieces of information. Information on the different grain marketing contracts will be presented. These include basis, hedging, cash, futures, and option contracts. Additionally, participants will be provided an example of a grain marketing plan and the fundamental principles that should be included.
The courses will be offered on two consecutive Tuesdays, starting on March 12, 2019. For specific times, as well as program registration instruction, go to http://go.osu.edu/grainwebinar. Cost for the program is $30.00.

To request additional information or have questions answered, contact Amanda Bennett at 937-440-3945 or at bennett.709@osu.edu

**Updated Field Guide Available**

By: Harold Watters CPAg/CCA


The newly revised Corn, Soybean, Wheat, and Forages Field Guide is a compilation of the latest research by Extension specialists from The Ohio State University in partnership with Pennsylvania State University.

> Designed as a guide for scouts, crop advisors, and farmers, this handy spiral-bound book contains updated information and images to aid with insect, disease, and weed identification. Major revisions to the book include the latest fertilizer recommendations, broadleaf weed ID keys, and a manure sampling and manure applicator calibration section. Tar spot, a new disease to Ohio, is now included in the Corn Disease section. The Forages section also received a major upgrade, and now includes grass crops as well.

The guide is divided into six sections: Corn Management, Soybean Management, Wheat Management, Forage Management, Weed Identification, and General Crop Management, which includes updated sampling information. The index at the back of the Bulletin 827 can be used to quickly locate page numbers for your topic of interest while in the field.

Winter Wheat Update
By: Laura Lindsey, Pierce Paul, Clay Sneller
Source: https://agcrops.osu.edu/newsletter/corn-newsletter/2019-04/winter-wheat-update

Due to late planting and wet weather, winter wheat in some areas of the state has not yet emerged. In Ohio, we do not have first-hand experience with this situation. Further west (Oklahoma, Nebraska, and Kansas), there have been reports of winter wheat emerging extremely late due to dry soil conditions. A winter wheat planting date study in Kansas found a 43 to 59% reduction in grain yield when winter wheat was planted in January and February compared to October. This yield reduction was associated with reduced tillering (reduced number of heads) per plant.

Will the sprouted, but not yet emerged wheat vernalize? Yes. Anything that is sprouted will vernalize. However, the root system will be minimal and heaving may be a problem. Additionally, the extremely wet conditions, leaving fields saturated with water, may result in plant death.

What can we expect in Ohio? We are not exactly sure. We do know wheat yields are greater for earlier planting (emergence) dates. However, we also know wheat plants can compensate for poor stands with plumper kernels. The outcome will likely depend on the weather for the remainder of the winter and spring.

What can be done? Wheat stands should be evaluated at Feekes 5 growth stage (leaf sheaths strongly erect). The number of wheat stems (main stem + tillers) can be used to estimate wheat grain yield (see table below). Keep in mind, right now, there are no management strategies to improve your wheat stand. A winter application of nitrogen fertilizer will not help

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<tr>
<th>Estimated grain yield (bu/acre)</th>
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Chili Cook-Off & Family Fun Night to be held on March 1st in Jefferson

The Ashtabula County 4-H Camp Counselors will be holding their 5th Annual Chili Cook Off and Family Fun Night on Friday, March 1, 2019 at the Ashtabula County A-Tech Cafeteria – Building B. The event will be held from 5:30 to 7:30 p.m. and your $5 ticket includes chili, cornbread, dessert and beverage and a vote for your favorite chili.

The evening will be full of fun activities for the whole family. There will also be a basket palooza. Pre-sale tickets can be purchase from any Camp Counselor or at the O.S.U Extension Office. Enjoy a variety of chili while helping a group of hard working youth. All proceeds benefit the Ashtabula County 4-H Camp Counselors program. For more information contact the O.S.U. Extension Office, Abbey Averill 440-576-9008 or averill.10@osu.edu CLICK HERE for a Chili Cook Off Entry Form

Northeast Ohio Winter Beef Clinic to be held March 12th

OSU Extension Ashtabula County will be holding a winter beef clinic on Tuesday, March 12th, 2019 from 6:30 to 8:30 at the Ashtabula County Extension office located at 39 Wall Street Jefferson, OH 44047. The two hour clinic will feature a discussion on beef cattle reproduction with Dr. Beth Kocab and Beef Quality Assurance with Haley Shoemaker.

The Ohio Beef Quality Assurance (BQA) program ensures that both beef and dairy cattle are raised in a manner that results in a wholesome beef product for our consumers. This program helps producers gain market access and keep their cattle desirable to the buyer in the stands.

Join us for an informative night of beef production and get BQA certified!

There is no cost for attending the clinic but you must register for this program by calling the Ashtabula County Extension office at 440-576-9008 or E-Mailing Andrew Holden at Holden.155@osu.edu

This event is limited in capacity so reserve your spot today!
Trumbull County Farmer Lunch Series

OSU Extension Trumbull County, Trumbull County Soil and Water Conservation District, and the NRCS have combined efforts to offer a farmer lunch seminar series that will cover a variety of topics relevant to NE Ohio. Each program will start with lunch at 11:30 A.M. sponsored by the Trumbull County Holstein Club followed by a 1-hour presentation. Cost for individual programs is $10/person. If you would like to register for all four programs, the cost is $35/person.

Tuesday, March 5, 2019 – Climate Impacts for Ohio Agriculture
• Aaron Wilson, OSU Byrd Polar and Climate Research Center
• Our changing climate has already influenced how Ohio farmers operate. Learn how predicted climate changes will continue to drive changes in Ohio agriculture. CCA credits available.

Tuesday, April 2, 2019 – Tillage Affects on Soil Health
• Steve Culman, Assistant Professor, State Specialist in Soil Fertility
• New tillage technologies are arriving each year, but are they hurting your soil health? Learn how tillage, and other practices can improve or hurt your soils health. CCA credits available.

Upcoming Events

Pesticide Applicator Training Dates
Ashtabula – February 28, 2019

Prune Into March
Trumbull County – March 2, 2019

Trumbull County Farmer Lunch
March 5, 2019 – Climate Impacts for Ohio Agriculture
April 4, 2019 – Tillage and Soil Health

New Pesticide Applicator Training
Trumbull County – March 12, 2019

Northeast Ohio Winter Beef Clinic
Ashtabula County - March 12, 2019

Ashtabula County Dairy Banquet
March 23, 2019

March In Prune Out
Geauga County – March 30, 2019
Join us for an informative night of beef production and get BQA certified!

The Ohio Beef Quality Assurance (BQA) program ensures that both beef and dairy cattle are raised in a manner that results in a wholesome beef product for our consumers. This program helps producers gain market access and keep their cattle desirable to the buyer in the stands.

Location
Ashtabula County OSU Extension
Office Downstairs Meeting Room
39 Wall Street Jefferson, Ohio 44047

Cost
FREE - registration is required.

Registration
Please RSVP for this program by calling the Ashtabula County Extension office at 440-576-9008 or E-mailing Andrew Holden at Holden.155@osu.edu

This event is limited in capacity so reserve your spot today!

Co-Sponsored by the Ashtabula County Cattlemen’s Association

Ohio State University
College of Food, Agricultural, and Environmental Sciences

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.
Did you ever want to learn how to prune your apple, pear, or other fruit tree? Here’s your chance! You even get to practice on someone else’s tree! OSU Extension and Hartford Orchards LLC are teaming up to bring you a morning full of hands-on pruning experience on March 2, 2019. We’ll start the morning off with a quick overview of pruning basics before we head out to the orchard to get first hand experience deciding what to prune, and when to stop cutting.

Dress for the weather, and bring your pruners, loppers, and saws! We will be getting our hands dirty, so bring gloves too! Cost for the class is $15/person and includes refreshments, handouts, and the first 30 registrants get a free pair of hand pruners. To register, or if you have any questions call 330-638-6783.

March Into Pruning
Fruit Tree Pruning Clinic

Hartford Orchard
6953 OH-305
Hartford, OH 44424

March 2, 2019
9:00A.M – 11:00A.M
$15/person

2019 PRUNE INTO MARCH REGISTRATION FORM
Complete the below information and send with payment to OSU Extension Trumbull County, 520 West Main Street, Cortland, OH 44410.

Name: ____________________________________________

Address: ____________________________________________

Phone: ____________________________ Email: ____________________________

Number Attending: ____________________________ X $15/person = ____________ Enclosed

Please make checks payable to OSU Extension