

November-December 2017

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TURKEY TAIL FUNGI

EXTENSION CONNECTION

Agriculture & Natural Resource news and events for Jefferson County

HAPPY HOLIDAYS FROM OSU EXTENSION!

We had a great year for Extension events in 2017, with topics ranging from sustainability to cover crops to invasive species management. We also have some exciting agricultural events coming up this winter to look for. Join us for our Extension Open House on December 4th to see our new space and get great information on choosing a Christmas tree (and keeping it fire-free until December 26th).

A question that I have gotten frequently in the office over the last few months was about the numerous dying deer we have been seeing across the county over the last 2 months. There has been an outbreak of epizootic hemorrhagic disease (EHD) in Jefferson and surrounding counties, which has infected wild deer and cattle in the area. See page 5 for more details on the outbreak, and report suspected cases to your veterinarian.

Jefferson County dairy producers—there will be a dairy banquet in St. Clairsville on November 2nd, which will include a discussion on farm transitions. The event is at Mehlman's Cafeteria beginning at 7:30pm. Contact the Belmont County Extension with questions regarding the event at 740-695-1455.

We can't wait to see you at our December Extension Open House!

Erika Lyon
Extension Educator, Agriculture & Natural Resources
Ohio State University Extension

THIS ISSUE

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OSU EXTENSION, JEFFERSON COUNTY

DECEMBER 4th OPEN HOUSE
500 Market St., Ste. 512,
Steubenville
2pm-6pm

*Join us for an afternoon of festivities,
including sessions on how to select
and care for Christmas trees*

U.S. SENATE PASSES CHANGES TO FEDERAL ALGAL BLOOM AND HYPOXIA RESEARCH AND CONTROL ACT

Written by Ellen Essman, Law Fellow, Agricultural & Resource Law Program
Peggy Kirk Hall, Agricultural & Resource Law Specialist, OSU Extension

The U.S. Senate has passed a bill sponsored by Ohio senators Sherrod Brown and Rob Portman that intends to improve the federal response to water pollution by amending the Harmful Algal Bloom and Hypoxia Research and Control Act of 1998. Senate Bill 1057 will now move on to the House of Representatives for debate.

What are harmful algal blooms and hypoxia?

The EPA defines harmful algal blooms as “overgrowths of algae in water,” some of which “produce dangerous toxins in fresh or marine water.” The toxins can be dangerous for humans and animals. One major contributor to algal blooms is an excess of nitrogen and phosphorus in the water. Hypoxia can also be caused by too much nitrogen and phosphorus in the water. The EPA defines hypoxia as “low oxygen” in water. Hypoxia sometimes goes hand-in-hand with algal blooms, because as algae dies, it uses oxygen, which in turn removes oxygen from the water. Algal blooms and hypoxia have been a problem in Lake Erie and other parts of the country.

Background of the law

The Harmful Algal Bloom and Hypoxia Research and Control Act was passed in 1998 in response to harmful algal blooms and hypoxia along the coast of the United States. When passing the law, Congress cited scientists who said both problems were caused by “excessive nutrients.” Furthermore, Congress found that harmful algal blooms had caused animal deaths, health and safety threats, and “an estimated \$1,000,000,000 in economic losses” in the previous decade.

The law established an interagency Task Force on Harmful Algal Blooms and Hypoxia, which was charged with submitting an assessment to Congress on the “ecological and economic consequences” of both harmful algal blooms and hypoxia. The assessments were to include “alternatives for reducing, mitigating, and controlling” harmful algal blooms and hypoxia. A number of other reports and assessments were also required, which were to all culminate in a plan to combat and reduce the impacts of harmful algal blooms. Additionally, the Act singled out the areas of the Northern Gulf of Mexico and the Great Lakes. For these two areas, the Act required additional progress reports and mitigation plans.

The Act has undergone a few amendments throughout the years. The amendments have expanded and/or renewed the duties of the Task Force and other state and federal actors. Most notably, amendments in 2014 created the national harmful algal bloom and hypoxia program and a comprehensive research plan and action strategy. Under the Program, the National Oceanic and Atmospheric Administration (NOAA) was charged with administering funding to programs combatting algal blooms and hypoxia, working with state, local, tribal, and international governments to research and address algal blooms and hypoxia, and supervising the creation and review of the action strategy, among other duties. The action strategy identified the “specific activities” that the Program should carry out, which activities each agency in the Task Force would be responsible for, and the parts of the country where even more specific research and activities addressing algal blooms and hypoxia would be necessary.

What changes are proposed?

SB 1057 would make a number of changes and additions to the current law. Overall, the goal of the bill seems to be to strengthen the federal government’s ability to research and respond to water pollution in the form of algal blooms and hypoxia. The most important amendments in the bill would:

Add the Army Corps of Engineers to the list of agencies on the Task Force.

Combine the sections on freshwater and coastal algal blooms, and require that scientific assessments be submitted to Congress every five years for both types of water.

Establish a website that would provide information about the harmful algal bloom and hypoxia program activities to “local and regional stakeholders.”

Require the Task Force to work with extension programs to promote the program and “improve public understanding” about harmful algal blooms and hypoxia.

Require the use of “cost effective methods” when carrying out the law.

Require the development of “contingency plans for the long-term monitoring of hypoxia.”

Fund the Program and the comprehensive research plan and action strategy from 2019 through 2023.

Most importantly, SB 1057 would add a completely new section to the law that would allow federal officials to “determine whether a hypoxia or harmful algal bloom event is an event of national significance.” Under the new language, the federal official can independently determine that such an event is occurring, or the Governor of an affected state can request that a determination be made.

How to Contact the Jefferson County Extension Team:

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Annie's Project Retreat



ANNIE'S PROJECT
EMPOWERING WOMEN IN AGRICULTURE

December 1-3, 2017
Salt Fork State Park Lodge
14755 Cadiz Rd, Lore City, OH 43755

Cost: \$105 per participant,
meals and materials included
Lodging: \$99/room/night (up to 4 people per
room), call 800-282-7275 to book rooms
Register by November 17th.
For registration, visit go.osu.edu/AnniesProjectEast

ALGAL BLOOM CONTINUED...

When making the determination, the federal official would have to take a number of factors into consideration including: toxicity of the harmful algal bloom, severity of the hypoxia, potential to spread, economic impact, relative size in relation to the past five occurrences of harmful algal blooms or hypoxia events that occur on a recurrent or annual basis, and geographic scope, including the potential to affect several municipalities, to affect more than one State, or to cross an international boundary.

Finally, in the case an event of national significance is found, the the federal official would have the power to give money to the affected state or locality to mitigate the damages. However, SB 1057 states that the federal share of money awarded cannot be more than 50% of the cost of any activity. The federal official would have the power to accept donations of “funds, services, facilities, materials, or equipment” to supplement the federal money.

The bill now goes to the House of Representatives for consideration. Text and information on SB 1057 is available at <http://go.osu.edu/hypoxiabill>. To read the current law, visit <http://go.osu.edu/algalbloomrandc>. For further information on water pollution, check out the EPA's pages on harmful algal blooms and hypoxia.

DON'T GUESS, FORAGE TEST!

*By Allen Gahler, OSU Extension, Sandusky County
(originally published in the Ohio Cattleman, late fall 2017 issue)*

Across most of Ohio, 2017 has been a challenging crop year, especially for those in the hay production business. In 2016, while most producers did not have significant yields, quality was tremendous due to the dry weather which allowed for highly manageable cutting intervals and easy dry down. Since the end of June, however, 2017 has been just the opposite, with mother nature forcing many bales to be made at higher than optimal moisture levels, and cutting intervals measured in months rather than days.

With adequate moisture throughout most of the state for much of the summer, this equates to substantial yields, which in turn for the beef producer, means hay is readily available at reasonable prices. However, for the astute cattleman that either makes his/her own hay or knows the nature of the business, this also means high quality hay may just be the proverbial needle in the haystack, and for the most part, as the old adage goes, you get what you pay for.

While there are many options to manage the situation, including making the best use of all of our available feed resources such as crop residues, stockpiled pastures, and supplements, one of the easiest and cheapest management tools is often overlooked. It is not a feedstuff itself, but instead is the analysis of the feed through a forage nutrient analysis test.

With the increasing focus on soil and water health in agronomic crop production, most have certainly heard the phrase from their county Extension Educator or local agronomist – “Don’t guess, soil test!” Well, as an Extension Educator with a background and experience in forage production and beef cow/calf production, I challenge every hay producer and cattleman to “Don’t guess, forage test!” So many times I have attended hay auctions around the state, or even witnessed hay sales transactions on the farm that involved nothing more than a visual color test, a scratch-n-sniff test, a touch and feel test, and of course a price test. While pretty green hay is appealing to us, color actually tells us very little about the nutrient content. With the right weather conditions, even alfalfa/orchardgrass hay cut at 45 days or more can show up bright green in a bale, and we all know what happens to the nutrient content of alfalfa past 30 days. Now as for the scratch-n-sniff test, I will not dispute that an experienced nose can sniff out musty and/or heat damaged hay that may very well not be ideal. And sure, a touch and feel test can indicate how soft the stems are, which MIGHT equate to maturity of the plant, but let’s combine all these variables.

What is one of the best ways to make even mature hay soft to the touch? Bale it slightly higher in moisture. What is a good way to keep some color in mature hay? Bale it before the sun has a chance to bleach it out, which obviously means at higher moisture. But what about preservatives you might ask? Many hay producers are using propionic acid and other preservatives to bale hay at higher moistures and beat mother nature at her own game while preserving hay quality. When used properly, this can significantly affect the nutrient content vs. letting hay get rained on, and when used on borderline situations, can allow for hay to be made that may still heat, and take away from the visual appearance, but could prevent molding. While significant heating can damage the proteins in the forage, treated hay will still usually beat the alternative of rained on hay when tested for nutrients. So the moral of all these stories? We really do not know much about our hay, or which hay to feed at the proper time for the production cycle of the cow unless we test it for nutrient content!

In a “normal” year, if there is such a thing in Ohio, we would expect to be able to harvest on 30-40 day intervals, and we would expect protein percentage, Total Digestible Nutrients (TDN), and Relative Feed Value (RFV) to increase with each cutting. In turn, Acid Detergent Fiber (ADF) and Neutral Detergent Fiber (NDF) should decrease if subsequent harvest is made in a timely manner.

Harvest was not always timely on these fields, but even when it was, we notice extreme variances across fields that were all managed similarly, and in the case of field 1, the exact opposite of what we would expect in terms of nutrient analysis through subsequent cuttings. There could be other variables having an effect here that we do not know about such as how many times the hay was handled in the field leading to leaf loss, field fertility, and variety of alfalfa and/or grass, but we do know that all fields were managed by the same producer using the same hay probe for sampling, and the same lab for testing. The main take home point is simple – to efficiently and effectively manage your herd when feeding hay, a forage test is the easiest and cheapest to use tool in your box, and essential no matter how good your eyes, nose, and fingers are at ‘evaluating’ hay!

WHAT FLOORING AND BEDDING MATERIALS ARE YOU USING IN YOUR FEEDLOT?

By Braden Campbell, Program Coordinator, OSU Sheep Team

What effect does pen flooring type and bedding have on the performance of finishing lambs?

A common management practice used to finish lambs is to house and feed lambs in an enclosed feedlot. Feedlots are used to protect the lambs from several environmental factors, predators, and parasites as well as ensuring the quality and amount of feed each lamb is receiving. Within the feedlot environment, variation in structural design and feedlot management is to be expected. As a producer, have you ever considered that maybe your feedlot flooring design and bedding material used could potentially affect the performance of your lambs? This is a question that the authors below were interested in. Therefore, their question of interest was; how does flooring and bedding type effect lamb growth, carcass characteristics, and visceral organ mass? In order determine this, two experiments were conducted.

In Experiment 1, crossbred lambs were housed in a feedlot and placed either on expanded metal flooring, dirt with a sand top-dress, or dirt with straw bedding. Lambs in this experiment were fed a diet consisting of 80% concentrate and 20% forage. All ingredients, with the exception of whole shelled corn, were pelleted. Lambs housed on expanded metal flooring consumed less feed (2.71 lbs./day), while lambs on straw bedding consumed the most feed (2.82 lbs./day) and lambs on sand bedding were intermediate (2.75 lbs./day). Lambs housed on expanded metal flooring had a lower average daily gain (ADG) when compared to lambs on straw bedding (0.57 vs. 0.62 lbs./day). No differences were seen in total DMI, total days on feed, and feed efficiency (lbs. of body weight gained/lbs. of feed consumed). As expected, lambs bedded with straw had a greater digestive tract weight when compared to lambs housed on expanded metal flooring. This is due to the increase in fiber these lambs received as a result of eating the straw bedding. An increase in digestive organ weight will also increase the energy required by the animal in order to maintain a larger digestive tract, resulting in less energy for muscle growth. There were no differences in lamb carcass characteristics due to flooring type or bedding material.

In Experiment 2, crossbred lambs were housed in a feedlot and placed on either dirt with a sand top-dress or dirt with straw bedding. This experiment consisted of two phases, a growing phase and finishing phase. Lambs were provided a diet primarily consisting of alfalfa haylage during the growing phase and a high concentrate diet during the finishing phase. During the growing phase, lambs bedded with straw when compared to lambs bedded with sand had greater ADG (0.42 vs. 0.32 lbs./day), DMI (2.63 vs. 2.46 lbs. /day), and feed efficiency (0.34 vs. 0.29 lb./lb.). During the finishing phase, lambs bedded with sand had a greater feed efficiency compared to lambs bedded with straw (0.45 vs. 0.41 lb./lb.).

Overall, both experiments show that when bedded with straw, lambs tend to increase DMI and have an increase in digestive tract weight. From a welfare perspective, straw can also be an effective type of environmental enrichment as it allows for feedlot lambs to perform natural behaviors such as rumination to break down the long stemmed forage. Along with an increase in digestive tract weight, more maintenance energy is required. Therefore, lambs that are provided with sand bedding may be more efficient in producing lean muscle mass as sand bedded lambs require lower maintenance energy. However, lambs that were housed in straw bedded pens demonstrated better growth parameters when compared to both sand bedding and expanded metal floors.

Jaborek, J. R., G. D. Lowe, and F. L. Fluharty. 2016. Effects of pen flooring type and bedding on lamb growth and carcass characteristics. *Small Rumin. Res.* 144: 28-34.

u.osu.edu/sheep/

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COLLEGE OF FOOD, AGRICULTURAL,
AND ENVIRONMENTAL SCIENCES

OSU Sheep Team
Supporting Ohio sheep producers by providing educational information, sheep research conducted at Ohio State, resources, and contact information for leaders in Ohio's sheep industry.

HOME EVENTS/PROGRAMS OSU SHEEP RESEARCH RESOURCES TEAM MEMBERS



Wanting to learn more about all things sheep? Visit the OSU Sheep Team's blog at u.osu.edu/sheep.

APHID OUTBREAK

Joe Boggs, OSU Extension

I got a phone call from a homeowner in southwest Ohio who said they had an aphid problem on willows. They described the situation as huge numbers of aphids dropping from large willows onto their home, driveway, and barn; sticky "sap" raining down on everything; and all manner of things acquiring a blackened patina. During the peak of the outbreak, the trees were buzzing with wasps. Now they are seeing tiny, gnat-like creatures flittering around their landscape.

They noted that the aphids and their buzzing entourage were so bad just a few weeks ago, they could not use their patio. I immediately bolted through the door to pay a visit, but had to return a short time later to collect a few essential items for the site visit (e.g. camera, car, homeowner address, etc.).

The culprit plaguing the homeowner's willows, and the homeowner, was the Black Willow Aphid (*Pterocomma salicis*). Their common name refers to the color of the adults, not its willow host; this aphid may be found on a wide range of willows. The homeowner was not exaggerating in describing the dimensions of their aphid outbreak.

There remained a substantial number of aphids; however, the most telltale evidence that an aphid apocalypse had occurred was the black sooty molds covering almost every flat surface beneath or near the infested willows. The sooty molds had colonized honeydew that had issued forth from the aphids. Of course the sugary honeydew had also attracted various wasps including yellowjackets and baldfaced hornets causing the trees to literally buzz with activity.

The black willow aphid is considered a "warm season" aphid with populations rapidly developing during the summer. Summer colonies are made-up of multiple overlapping generations of wingless females and their offspring; there are no males. This form of reproduction without males is called parthenogenesis.

Parthenogenetic females can dispense with all of the rituals associated with mating (e.g. going on dates, feigning interest in male stories, marriage, etc.) and immediately start producing offspring as soon as they mature. I contend this form of reproduction is doomed by evolution; my wife disagrees and cites football. The bottom line is that it means populations can build rapidly to outbreak proportions.

However, as days shorten in October and November, the parthenogenetic females start producing males with wings (apterous) and wingless females that mate with the males and lay eggs. The gnat-like creatures the homeowner is now seeing flittering around their landscape are the males; no doubt looking for a football game.

Of course, aphids are the "wildebeests" of our forests and landscapes; everything eats them! In fact, this is one reason population outbreaks are so rare and are seldom repeated year-after-year on trees. I was able to find all manner of aphid predators and "aphid mummies" which are clear evidence of the aphid-elimination work of parasitoid wasps (*Aphidius* spp., family Braconidae).

The parasitoid wasp females lay a single egg inside of a developing aphid nymph. The egg hatches as the nymph nears the completion of its development. The resulting wasp larva consumes the aphid's innards, pupates inside the dead aphid, and emerges through a tiny, round escape hatch.

The homeowner was keen to spray for the aphids; however, I proffered a wait-and-see option. It was obvious that the "aphid season" is winding down and their enemies are continuing to deplete the population. While I couldn't say that an outbreak would not recur next season, I advised it may be best to wait until next season to see if high numbers begin to reappear, but be prepared and react early.

"Expect the best, plan for the worst, and prepare to be surprised." -- Denis Waitley

IT'S TURKEY SEASON!

October 14 to November 26 is turkey season this year. While out hunting, its important to keep a few things in mind.

In order to hunt turkeys and other game species, you will need a valid hunting license and a fall turkey permit. Certain practices are prohibited, including the use of bait and live decoys. The use of dogs is permitted to aid in hunting turkeys during the fall season only.

Bag limits for the fall are one bird (male or female). Any wild turkeys collected must be checked on the same day that it was taken.

For more information on regulations for turkey hunting in the fall, visit go.osu.edu/turkeysn. Check out the updated map—11 more counties now permit fall hunting.

WHAT'S UP WITH THE DYING DEER?

You may have noticed a few (or quite a few) deer carcasses lately in fields, streams and along roadsides. Confirmed cases of epizootic hemorrhagic disease (EHD) were found in both deer and cattle in Ohio late this summer, and EHD has since taken off (the first confirmation of the disease in cattle was in Jefferson County).

There are a few things to keep in mind with EHD. The virus is NOT infectious to people or spread from animal to animal, but sick animals are not recommended for consumption. The EHD virus is transmitted by small midges that bite the host. Cattle may show signs of the virus, including swelling of the muzzle, oral erosions, excess salivation, and fever. Producers who suspect they may have EHD in their herd should report cases to their local veterinarian.

Cases of EHD are not unusual. Outbreaks can occur when there are a high number of deer within an area and generally occur about once every 5 years. The virus does appear occasionally each year, but in a low number of hosts.

For more information on EHD, including maps of this year's outbreak, visit go.osu.edu/ehdrisk or contact your local Extension office.



Thinking of planting radishes followed by sweet corn? The corn may not be as productive as when it follows other crops such as potatoes. What crop you plant can change a soil's microbiota, or the composition of microscopic organisms found within soil and along side a plant's roots. A few of these microbes are pathogenic to plants, and some help break down organic material. And others form mutually beneficial associations with plants, one of the more well known being the mycorrhizal fungi.

The word mycorrhiza originates from the Greek words *mykes* and *rhiza*, which means "fungus root". Approximately 75% of vascular plants have mycorrhizal associations. Arbuscular mycorrhizal (AM) fungi, the fungi that do much of the nutrient exchange within a plant's root system and also assist with the uptake of water, are too small to be observed without a microscope but are fundamental in the health of crops such as corn and alfalfa. AM fungi can improve nutrient uptake even in nutrient deficient soils.

Fossil records indicate that these relationships between plants and fungi are old – on the scale of hundreds of millions of years. AM fungi produce small filament or thread-like structures known as hyphae that increase the surface area available to a plant for water and nutrient uptake and are particularly helpful with immobile nutrients such as phosphorus. Hyphae both look (at least under a microscope) and act like a secondary root system for plants. In exchange for carbohydrates and other products of photosynthesis, mycorrhizae provide a plant with much needed macro- and micro- nutrients such as phosphorous and zinc.

Many bio-fertilizers are available that include AM fungi. These fertilizers often contain common AM fungi found worldwide, but establishment of these fungi in crops can be difficult since the inoculated species are frequently replaced over time with native species already present in the soil. It is also difficult to have soil completely sterile of these fungi—you often don't even need to worry about inoculating plants with mycorrhizae since they already have the mycorrhizae on or within their roots. Encourage growth of your AM fungi by avoiding over-fertilizing soils and tillage practices that can break apart hyphal networks. Fungicides also can limit mycorrhizal colonization of roots.

Keep in mind that not all plants are mycorrhizal-friendly, and crop rotations can promote or inhibit mycorrhizal growth. Crops and weeds belonging to families such as Chenopodiaceae (lambsquarters, beets) and Polygonaceae (pigweeds) do not support mycorrhizal fungi. It can take several years for mycorrhizal populations to rebuild in the soil after a non-mycorrhizal crop is harvested, and any following crops dependent on these organisms may not produce as good of yields as those following a highly dependent crop that encourages AM growth and development.

Weeds in a planting can also affect microbial communities. For example, that red-rooted pigweed is not doing your AM fungi any favors since it is a non-mycorrhizal species, but that green foxtail, chickweed, and Canada thistle may have a use—AM fungi love them! (Although you may want to think hard about keeping that Canada thistle around.)

Further Reading:

Siemering, G., M. Ruark, F. Arriaga, E. Silva, and H. Johnson. 2016. The value of arbuscular mycorrhizal fungi for field crops. University of Wisconsin Extension. <https://learningstore.uwex.edu/Assets/pdfs/A4114-01.pdf>

Ingham, E. Chapter 4: Soil Fungi. *In Soil Biology*. University of Illinois Extension. <https://extension.illinois.edu/soil/SoilBiology/fungi.htm>

GETTING THE MOST FROM YOUR ROTATION

Avoid planting mycorrhizal dependent crops following non-mycorrhizal crops

<u>Highly Dependent</u>	<u>Facultative</u>	<u>Non-Mycorrhizal</u>
 Corn  Flax  Bromegrass  Alfalfa  Legumes  Potatoes	 Wheat  Oats  Barley 	 Radishes  Mustard  Beats  Buckwheat  Kale  Broccoli  Cauliflower

Outdoor Photo Tips:

Snow and Exposure



Wanting to capture some snowflakes this holiday season? Photographing snow can be a challenge, especially during mid-day. Since snow produces a highly reflective (and usually very white) surface, digital cameras will often have a difficult time picking up the details in a scene or will produce an image with a lens flare. Snow can also trick a camera's metering system, which can make getting the correct exposure challenging.

So how can you compensate for these effects? A good way to avoid lens flare in digital SLR cameras is to use a lens hood that prevents reflected light from producing a glare in the resulting image. Also avoid pointing the camera near the sun or towards highly reflective areas when possible (and never point a camera directly at the sun).

Metering modes, which set the correct exposure for an image, will depend on the scene and the camera, and you may need to experiment. Settings such as spot metering, where the camera only meters a small area of a scene, may work better when there is both extreme light and dark areas within the scene. If brightness is even across a scene, metering settings that use an average exposure over a metered area will work to produce an image that is exposed correctly.

Don't give your camera control when photographing snow—often the photograph produced will be underexposed and may need some editing using a post-processing software.

NOVEMBER

- 10/24 Why are my Ash Trees Dying? @ Barnesville Library Annex, 6-8pm
- 10/30 Pesticide Applicator Exam @ Carrollton USDA Service Center, 613 N. High Street, Carrollton, 10am
- 11/2 Dairy Banquet @ Mehlmans Cafeteria, 51800 National Rd E, St Clairsville, 7:30pm
- 11/8 Master Gardener Volunteers Annual Banquet, 5:30pm
- 11/10 Office Closed—Veteran's Day
- 11/14 Women in Agriculture Fall Dinner Program @ Raven's Glenn Winery, 56183 Co Rd 143, W. Lafayette, 6-8:30pm
- 11/23-24 Office Closed—Thanksgiving

DECEMBER

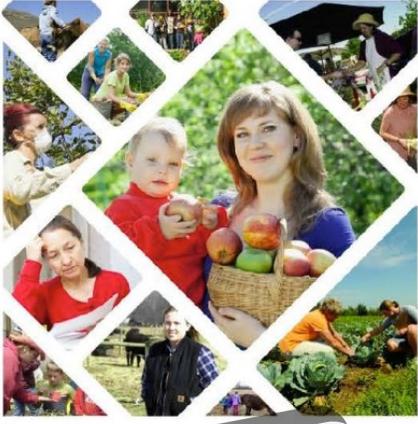
- 12/1-12/3 Annie's Project Retreat @ Salt Fork Lodge, Lore City
- 12/4 OSU Extension, Jefferson County Open House, 2pm-6pm
- 12/6 Office Closed
- 12/15 Pesticide Applicator Exam @ Carrollton USDA Service Center, 613 N. High Street, Carrollton, 1pm

EXTENSION'S MOST WANTED...

THE MARESTAIL INVASION CONTINUES INTO WINTER. The roads and open fields were full of marestail this summer, and with the onset of fall and winter, you may be thinking that your marestail headaches may come to an end. Guess again. Marestail is an annual weed with both a summer and winter. It usually germinates in the fall as part of its typical life cycle. Marestail has developed resistance to glyphosate, and the best control of this pesky weed is frequent mowings before it goes to seed. In the winter, the rosette-like leaves will lie low on the ground until summer. The larger the rosette, the greater the chances of survival through the winter months.



Photo by Doug Doohan, Ohio State University/OARDC, Bugwood.org



Women in Agriculture Fall Dinner Program

- Take Control!**
- Clear the clutter
 - Manage your time
 - Prioritize your tasks

Contact the
Coshocton County
OSU Extension
Office
at 740-622-2265
to register

Tuesday,
November 14, 2017

6:00 – 8:30 p.m.

Raven's Glenn Winery,
56183 Co Rd 143, West Lafayette, OH

Cost: \$25/person (includes family style
meal and program)

Deadline to register: Wednesday,
November 8th

Join us for an evening of networking, idea sharing
and delicious food. Identify your top time wasters
and problem areas. Gain perspective and tools for
prioritizing. Share tips, tools and routines that
work for you!



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Ohio State University Extension Jefferson County greatly appreciates the support of the Jefferson County Commissioners:
Dr. Thomas Graham, Dave Maple, Jr., and Thomas Gentile.

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Roger Rennekamp, Associate Vice President for Agricultural Administration; Associate Dean, College of Food, Agricultural, and Environmental Sciences; Director, Ohio State University Extension; and Gist Chair in Extension Education and Leadership.

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