



OHIO STATE UNIVERSITY EXTENSION

ANR EXTENSION CONNECTION

Agriculture & Natural Resource news and events for Jefferson County

The dog days of summer are here...

July—August | 2019

...and hopefully we get drier weather! This spring has been stressful for many farmers as rainy conditions have continued for much of May and June. The biggest challenge we face right now includes muddy, water-logged fields that we would typically see in early spring. Much like last year, it will be difficult to have a good hay harvest this summer.

Ohio will likely face another feed shortage this winter—with difficulties in getting crops planted and hay harvested, quality feed will be hard to find. For those raising livestock, consider stockpiling your forages later this summer. Stockpiling will allow for more opportunities to graze later into the winter months, cutting down on feed costs. For information on grazing practices such as stockpiling, make sure to come to one of the Eastern Ohio Grazing Council pasture walks this summer and/or sign up for the Ohio Beef (u.osu.edu/beefteam) or Sheep Team (<http://u.osu.edu/sheep>) newsletters. These are great resources for questions you may have about feed, grazing, and all things livestock.

We have a couple of fall tours coming up. On Tuesday, August 6th, we will be visiting Summersong Vineyard with the OSU grape and enology specialists. Learn about what it takes to grow grapes and make quality wine. Also, on Monday, September 23rd, join OSU Extension at Next7 Organic Farm in Cadiz for an Organic Production Walk. We will have a few vegetable specialists on site to share information on what you need to know to go organic.

Stay cool!

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

THIS ISSUE

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MAGNOLIA SCALE IS PUFFING-UP AND DRIPPING HONEYDEW

By Joe Boggs, OSU Extension Hamilton County

Magnolia scale (*Neolecanium cornuparvum*) females are "puffing-up" and dripping copious quantities of honeydew in southwest Ohio. This native scale has a strong affinity for non-native magnolias and associated hybrids. Common hosts include star magnolia (*Magnolia stellate*), lily magnolia (*M. liliiflora*), and saucer magnolia (*Magnolia × soulangeana*). Native magnolias are more resistant perhaps because of natural defenses that developed through a shared evolutionary history with the scale.

Magnolia scale is a type of "soft scale" so named because of the helmet-like soft leathery covering that protects the females. Although it's one of the largest soft scales in Ohio with mature females measuring as much as 1/2" in diameter, the current pinkish-tan colored females are still somewhat flattened and may be obscured by a heavy coating of white, waxy, flocculent material.

Magnolia scale has one generation per season. Females and males spend the winter as first instar dark-colored nymphs attached to the stems of their host plant. Their resemblance to lenticels makes them inconspicuous. The nymphs mature in the spring with the males developing into small gnat-like insects that fly to females and mate.

The females remain immobile but rapidly expand in size as they mature through the spring and summer. Eggs are produced in late summer to early fall and held internally until they hatch creating the illusion that the females are giving birth to the first instar nymphs (= crawlers). The first instar crawlers are highly mobile but become immobile once they insert their piercing-sucking mouthparts into stems. This is the overwintering stage.

Magnolia scale adults and nymphs insert their piercing-sucking mouthparts into phloem vessels to tap plant sap. A substantial loss of sap from a heavy scale infestation represents a serious loss of energy resources to the trees. The associated physiological stress can produce leaf yellowing and loss, branch dieback and canopy thinning; even the death of entire trees. Stress can also indirectly make trees susceptible to other problems.

Magnolia scale sucks plant sap to withdraw carbohydrates which provide energy and to extract amino acids which are building blocks for proteins. However, the sap contains trace amounts of amino acids compared to huge amounts of dissolved carbohydrates. This means the scale must process a large amount of sap to extract the small amount of amino acids. They discharge the excess sugar-rich liquid from their anus in the form of a sticky, sugar fluid called "honeydew" which is actually a nice name for scale diarrhea.

Magnolia scale is a prolific honeydew producer. During normal years, the sticky honeydew drips onto the leaves and stems of the host plant as well as understory plants to eventually become colonized by black sooty molds. Although the molds do no harm, blackened leaves can seriously reduce the aesthetic appeal of heavily infested trees.

The honeydew also attracts a plethora of freeloaders including bees, wasps, ants, and flies. In fact, a high percentage of the flies are often members of the blowfly family, Calliphoridae. Their maggots may have a taste for decaying flesh, but adults like sweets.

Thus far, this season has not been normal in southwest Ohio. Recurring periods of heavy rainfall appear to be keeping pace with scale honeydew production. Several heavily infested rain-washed magnolias that I inspected recently had little evidence of honeydew on the leaves and no black sooty patina. In fact, given how often I use black sooty molds as a scale (or aphid) indicator, I may have missed the infestation had I not already known the trees were loaded with scale. Of course, the magnolia scale will continue to pump-out honeydew for the better part of the

summer, so conditions can quickly change.

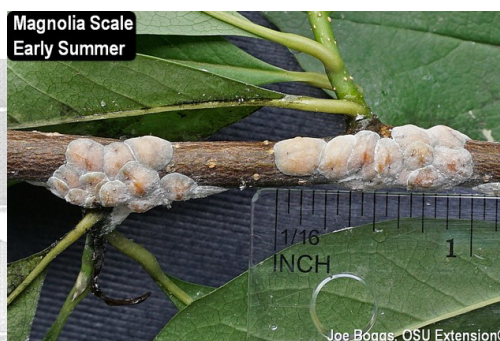
Magnolia scale infestations attract a wide range of natural enemies such as the notorious scale and aphid nemesis: the multicolored Asian lady beetle (*Harmonia axyridis*) with their alligator-like larvae. Sigil lady beetles (*Hyperaspis* spp.) and Australian mealybug destroyers (*Cryptolaemus montrouzieri*) may also show-up to chow down on magnolia scales. Both have wool-coated larvae that are actually wolves in sheep's clothing.

This bio-allies can have a significant impact on maintaining magnolia scale infestations below noticeable levels on native magnolias. Unfortunately, they appear to have a limited effect on magnolia scale populations on non-native magnolias. It's speculated that the lack of defenses by the non-native trees may support such a rapid scale proliferation, the large numbers simply overwhelm the ability for natural enemies to have a significant effect.

This means other management tactics may be necessary to support plant health. A direct approach is to use physical removal. If trees are small and scale populations are low, a dish scrubber or bathroom scrub brush can be used to physically remove the females before they produce eggs at the end of summer.

Topical insecticide applications targeting 1st crawlers later in the growing season can be effective. However, the extended period of egg hatch presents a serious challenge and requires multiple applications with thorough coverage of the stems. This is particularly true for "horticultural oils" (e.g. summer oils). Thorough coverage is critical because oils only kill on contact. Spring applications can also be effective; however, there is a risk for damaging flower buds.

Control can be achieved with single applications of the neonicotinoid systemic insecticides imidacloprid (e.g. Merit) and dinotefuran (e.g. Safari). There are two effective "treatment windows" in Ohio. They are late summer to early fall, before settled crawlers stop feeding for the season, or sometime in May after overwintered nymphs start feeding. However, spring applications should be delayed until after trees have finished flowering to avoid killing pollinators. Of course, as with all insecticide applications, it is critical to read and follow label directions.



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WHAT'S WRONG WITH MY BLUE SPRUCE?

By Erika Lyon, OSU Extension, Jefferson & Harrison Counties

Colorado blue spruce is a common tree found in landscapes across the Midwest - Jefferson County included. Reasons for their popularity include their fast rate of growth, bluish hue, and iconic shape that adds an interesting feature to the front or backyard. The western U.S. and Canada are the natural range for the Colorado blue spruce, but they are enjoyed across North America. Unfortunately, since these trees are outside of their native range, they are often more susceptible to a variety of pests and diseases that can leave them looking a little less than their prime.

Symptoms commonly reported in Colorado blue spruce include needle loss and branch dieback—this usually begins with the lower branches. There are various pathogens that can cause these symptoms to appear, although the most frequent disease I encounter with samples submitted to our office or out in the field are the needlecast diseases. The pathogen, *Rhizosphaera*, is a needlecast fungus that attacks trees already stressed—either by age or environment. The presence of this fungus can be confirmed by locating the pycnidia, which are small black structures (fruiting bodies) the size of a pinhead that line needles. Another fungal pathogen that causes needlecast symptoms is *Stigmata*, which causes similar symptoms as those previously described except symptoms occur on green needles, whereas *Rhizosphaera* typically occurs on brownish or purpling needles. Both fungi enter susceptible needles through the stomata, tiny pores in leaves used for gas exchange. Excess moisture can exacerbate disease severity and needle loss. Oftentimes, needlecast pathogens are present after periods of drought or infestations of spruce spider mites, which cause trees to weaken and increase susceptibility.

Tip blights can also cause dieback in emerging shoots. Although not as prevalent on spruce as on pine, one can still find diseases such as *Phomopsis* or *Diplodia* tip blight on blue spruce trees. *Phomopsis* fungi are also known to cause canker formations under the thin bark of spruce trees, typically occurring on trees older than 35 years and

will cause underlying tissues to turn dark brown. Sometimes the only evidence of these cankers is weeping that occurs on branches where sap appears. Much as with needlecasts, symptoms initially appear at the bottom of the tree and progress upward. As the name suggests, the tips of branches turn brown and droop.

Cytospora canker disease is another common disease found in the Midwestern states. This fungus infects branches and causes sunken areas on branch surfaces that will occasionally ooze sap or resin. In severe cases, canker diseases can plug up a tree's vascular system, cutting off the flow of water and nutrients and eventually killing the branch. This can cause "flagging" to occur in trees.

Why does it seem as though we are seeing more and more Colorado blue spruce trees go into decline in recent years? We have to keep in mind where these trees are from—the Rocky Mountains have a very different climate from Ohio, where drier conditions keep many pathogens at bay. But here in the Midwest, these trees will encounter more humid environments and optimal conditions for disease. Furthermore, many of these trees are located on marginal sites that will result in greater stress, providing a window of opportunity for pathogens to invade. With the very wet spring and summers we have been having lately, it is no wonder why Colorado blue spruce is struggling to keep up.

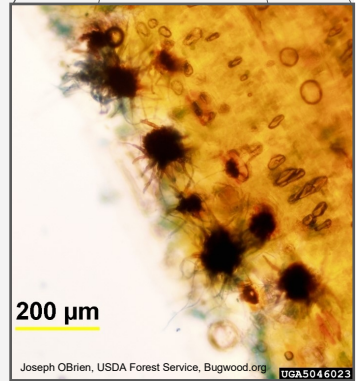
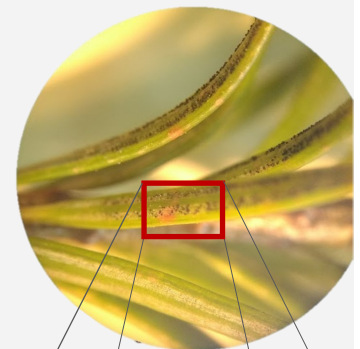
How can we treat our spruce trees already in decline? The answer is complicated. With needlecasts, preventing new needles from becoming infected can help fill in the bare spots on branches, although this can take time. Removing infected tissue can go along way for sanitation and preventing emerging needles from becoming infected in the first place. If the disease is caught early enough, pruning when trees are dormant can limit the spread of the fungus. Fungicide treatments can be used in combination with other management methods when other strategies do not control disease. Products containing chlorothalonil are often used for fungal control—make sure spruce and the disease are included on the label. Many fungicides are best used as a preventative rather than a curative control, and it is important to keep in mind fungicides do not work on Cytospora canker disease. Always follow pesticide product labels.

Should the time come to remove the spruce tree and plant another, make sure the location is favorable for the new sapling. Blue spruce require very good soil drainage, good air circulation and full sun. Try planting multiple species of conifers—diversifying your landscape can make it more resilient to disease. A good alternative to blue spruce in the Midwest is Norway spruce, which can tolerate more humid conditions.

References & Resources:

Cregg, B., C. McTavish, A. Jarosz, J. O'Donnell, and D. Fulbright. 2015. What is spruce decline and what should you do about it? Michigan State Extension. https://www.canr.msu.edu/news/what_is_spruce_decline_and_what_should_you_do_about_it

Fulbright, D., M. Catal, S. Stadt, A. Jarosz, B. Cregg, and J. O'Donnell. 2012. Phomopsis Spruce Decline. Grower Segment—Michigan State University, College of Agriculture and Natural Resources.



Stigmata needlecast pycnidia under microscope.

2019 Jefferson County Fair
 August 13th-18th
 Friendship Park,
 Smithfield, OH

SEPTEMBER 17th-19th

Tickets on sale soon!

FARM SCIENCE REVIEW



USE FAMACHA CORRECTLY

By Rory Lewandowski, OSU Extension Educator ANR, Wayne County

Pulling from the archives, we found it timely and appropriate to share this piece from our very own Rory Lewandowski as he reviews the benefits of implementing the FAMACHA® eye scoring system in your operation. Here at the university, we began our summer grazing project with 96 lambs, all of which will be FAMACHA® eye scored every 14 days over the course of the study as one of five measurements to track parasitism. Proper use of the FAMACHA® eye scoring system will be sure to prove beneficial to you and your flock/herd over the course of this grazing year.

A number of sheep and goat owners have been trained across Ohio in the use of the FAMACHA® eye scoring system, yet problems with internal parasites, in particular, with *Haemonchus contortus* continue. This is to be expected. The FAMACHA® eye scoring system utilizes an eyelid scorecard that can help a farmer make a decision to treat or not to treat the animal with a chemical de-wormer. The FAMACHA® eye scoring system is not a cure-all, or a silver bullet for dealing with internal parasites. It is one tool that can be a part of an overall parasite control strategy. In order for this tool to be effective it must be used correctly. Let's start with what FAMACHA® is designed to do and then look at the limitations of the FAMACHA® eye scoring system.

To begin with, the FAMACHA® eye scoring system is only useful when dealing with the *Haemonchus contortus* parasite. The *Haemonchus contortus* is the parasite of greatest concern to pasture based sheep and goat production, so FAMACHA® matches up with this concern. *Haemonchus contortus* is a blood sucking parasite and heavy infestations with this parasite may result in anemia. The symptoms of anemia show up in the color of the membrane of the eyelid. In the FAMACHA® eye scoring system that eyelid color is matched up with a scorecard that ranks color on a 1 to 5 scale. A dark red eyelid membrane color is a 1 and indicates no significant anemia. A white color is a 5 and indicates severe anemia. The light red, pink and pinkish white colors in between indicated by scores 2 through 4 indicate increasing levels of anemia that generally correspond to the parasite burden the animal is carrying.

Second, the FAMACHA® eye scoring system is to be used to help make decisions about selectively de-worming animals. In general, if an animal scores a 3, 4 or 5, it is treated with a chemical de-wormer. Selective de-worming is important to minimize parasite resistance to chemical de-wormers. FAMACHA® should not be used to make a decision to either treat or not treat the entire flock/herd. Finally, it is effective only when used on a regular basis.

The FAMACHA® eye scoring system has limitations. It is labor intensive. Each sheep/goat and lamb/kid must be handled and scored. As previously mentioned, its effectiveness really depends upon regular use. As we enter June, July, August and September, be aware that these are traditionally months of heavy *Haemonchus contortus* infections. Due to their smaller blood volumes, lambs and kids with heavy infections can go from apparently healthy to death's doorstep in 10-14 days. This means that animals should be FAMACHA® eye scored every 7-10 days during this period.

I know that because of lack of handling facilities, or because of where animals are located in a pasture rotation system, it becomes problematic to score every animal every 7-10 days. I hear livestock owners say that they grabbed a couple of animals out on pasture and looked at their eyes. This quick spot check of a

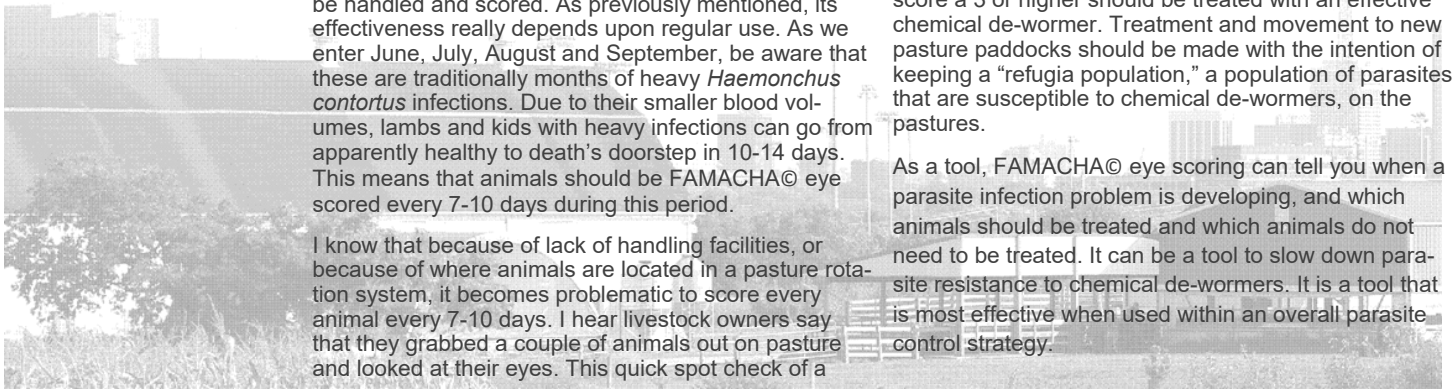
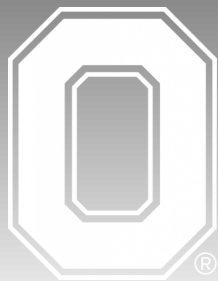
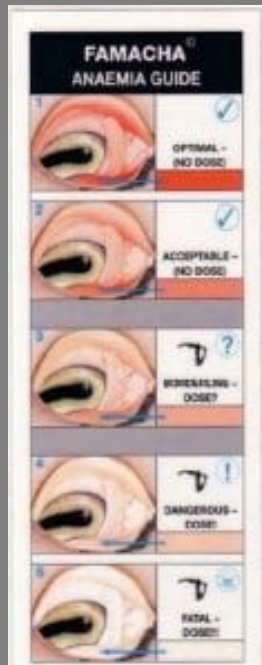
couple of animals is used to determine the parasite burden of the flock or herd. This is not a correct use of the FAMACHA® eye scoring system and is not likely to provide accurate information. Research has demonstrated that 20% of the animals in a flock or herd can carry 60-80% of the worm load. If a majority of the animals are not checked, how do you know if the animal grabbed was one of those 20% that has a heavy parasite burden, or is an animal with a relatively low burden? In addition, correct use of the FAMACHA® eye scoring system dictates that a scorecard, as shown in the image above, is used each time eyes are checked. Do not rely upon memory of scorecard colors.

At some point, the time and labor required to FAMACHA® eye score every animal becomes impractical as flock/herd size becomes large. Exactly what that size is, I can't say, but certainly flocks/herds of several hundred and up are not all that excited about using FAMACHA® eye scoring system. With flocks/herds of several hundred and up it probably is not necessary to check every animal. Statistically, if a significant number of animals are checked, this will provide reliable information about the entire flock or herd. It will not provide specific information about individuals that are not scored. Still, there is a necessity of bringing animals to a handling unit and checking a considerable number. In any case, FAMACHA® scoring is a good tool for small and medium sized flocks/herds. Of course the FAMACHA® eye scoring system is of limited usefulness if the farmer does not know the level of chemical resistance present in the herd/flock and which, if any, of the chemical classes will act as an effective chemical rescue treatment.

To really get a handle on what is happening with regard to infection levels in the flock/herd, FAMACHA® eye scores should be recorded and the livestock owner should look for trends. Are the number of animals that scored a "1" or a "2" staying the same over scoring periods or is there an increasing percentage of 2's, and some 3's while the number of animals scoring a 1 is decreasing? If the trend is toward higher scores that is an early warning that pastures have a high level of parasite eggs and infective L3 larvae and that animal infection levels are increasing. This is where the usefulness of the FAMACHA® eye scoring system shows up, as well as its limitation. If there is not an overall parasite control strategy to effectively use the information FAMACHA® has provided, then the health status of the animals will continue to degrade.

An overall parasite control strategy takes into account the biology and lifecycle of the parasite. Effort should be made to reduce egg shedding on pastures and to reduce the incidence of young animals grazing on heavily contaminated pastures. When FAMACHA® score trends indicate a growing infection, plans should be made to move animals to a safe pasture, increase the nutritional plane of the animals and to FAMACHA® score animals every 7-10 days. Animals that score a 3 or higher should be treated with an effective chemical de-wormer. Treatment and movement to new pasture paddocks should be made with the intention of keeping a "refugia population," a population of parasites that are susceptible to chemical de-wormers, on the pastures.

As a tool, FAMACHA® eye scoring can tell you when a parasite infection problem is developing, and which animals should be treated and which animals do not need to be treated. It can be a tool to slow down parasite resistance to chemical de-wormers. It is a tool that is most effective when used within an overall parasite control strategy.





FARMING WITH FAMILY THROUGH THE TOUGH TIMES

By Christine Gelley, Agriculture and Natural Resources Educator, Noble County, OSU Extension

There are days where every farmer wonders what they got themselves into. Days where the work ahead is overwhelming, the kids are sick, the cows are calving, your 4x4 is stuck in the mud, and to top it off, you are running low on stored feed and stored energy in your soul. Farming is tough. No doubt about that.

When the weather and the markets are uncooperative with your plans, the stress can pile up on the farm and on your family. One temporary way to deal with that stress is to be thankful for what you have. Someone out there always has it worse than us and we should be thankful for the things we have each day, instead of dwelling on the things we do not.

This past winter at the American Forage and Grassland Council Annual Conference, a beef farmer named Buron Lanier of Piney Woods Farm in North Carolina, shared a story of forage tragedy and triumph that can help put 'thankfulness' into perspective.

Mr. Lanier had presented at last year's conference about the efforts made to convert his farm from KY-31 fescue to novel endophyte fescue. A significant portion of his farm is dedicated to silviculture, combining the production of pine trees and feeding stocker cattle. With great effort, he progressed into a 365-day grazing system. He had no need to feed hay and very little supplemental feed. The system was working marvelously.

But this year he had a different story to share. Hurricane Florence hit the East Coast in September 2018. Mr. Lanier had just started stockpiling his novel endophyte fescue for the winter when his farm became submerged by hurricane waters for over 5 days. The water levels were up to five feet in most of his pastures. He lost over 75 percent of his newly converted pastures. His neighbors also lost their KY-31 pastures and many of them lost their homes as well.

Due to his 365-day grazing plan, Piney Woods Farm had no stored feed. Mr. Lanier was devastated by the destruction, but his home was still livable, his cattle alive, and his family safe. Donated hay and feed were his saving grace. He has since learned how to feed cottonseed and plant by-products and low quality hay. Despite the set-back, he intends to re-establish his pastures back into novel endophyte fescue and begin again.

At the end of his presentation he shared that when something this devastating happens, you question all your motives for farming. He had retired as a successful entrepreneur and started a new venture, grazing stocker calves and farming trees. Why was he doing this? He was doing it for the future of his family, agriculture, and our country's ability to feed itself. He determined that it is worth it to carry on.

The take home message that stuck with me from Mr. Lanier was that you never know when devastation is lurking around the corner. In a business like agriculture, that devastation could be caused by weather or a market crash, or by the most common two factors, death or divorce. Appropriate insurance, business structure, and succession planning can help soften the blow if or when an unfortunate event comes along. Planning for the unexpected can help prevent complete devastation of the family farm.

Wesley Tucker, an Ag Economist for University of Missouri Extension, also shared his personal story about the beef business at the conference. His was about building his farm from scratch with no land of his own. He created a system that worked economically,

but in the long run, it has not worked well for his family.

When he first started, he was single and had time to run from one rental site to another checking cattle. After starting a family, he took his daughter along with him. She enjoyed helping move temporary fence and riding in the truck. His daughter is now ten years old and according to Mr. Tucker, "she hates the farm." He continued to say, "I have failed because my daughter hates the farm. She hates it because instead of spending dedicated time with her, I'm checking cows before and after work."

The take home message of his story was to be smart and economical, but don't forget that your time has value too. You should be careful how you spend it before it is gone.

The story that struck me most directly at the AFGC Conference was that of Dr. Jason Salchow, a veterinarian and custom grazer. Dr. Salchow drove the point home that success in farming is like a crockpot, not a microwave.

He said, "Everyone wants quick results, like a microwave. But, nothing good comes out of a microwave. A crockpot on the other hand, that's what the good stuff comes out of, but you have to cook it low and slow."

The past 20 years have been a long rough road for Dr. Salchow, his wife, and five children to get to where they are today. Currently they farm as custom grazers. They own the land and graze it with other people's cattle. All their clients make monthly payments for their grazing services based on average daily gains. Clients maintain the liability for animal health and the Salchows maintain the liability for the land.

His wife maintains the records and he maintains the pastures and cattle. They are making money, they have gained the trust of their clients, and they are expanding. He continued to share that expanding would be a lot easier if his family's farm hadn't been separated by the previous generation in a divorce.

The leading cause of farm fragmentation in the U.S. is not urbanization, but rather death, divorce, and a family that cannot compromise. Dr. Salchow lamented over the loss of the American family farm by saying, "If you want to be successful on the farm, go home and love your wife. We have to be better husbands, wives, fathers, and mothers. There is no success outside the home that can compromise for failure in the home."

A fellow member of the audience tied Dr. Salchow's comments back to liability insurance, to say that the best liability insurance you can hold for your farm is a good relationship with your family. That is the glue that holds the farm together.

From my perspective, none of these presentations were about the animals or land as much as they were about relationships with your neighbors and your family. Success in agriculture requires capital, but it is built on perseverance and trust. Trust takes time to develop and perseverance is what drives the crockpot approach to success.

Take the time to build trusting relationships with your family, neighbors, and clients. Don't take them for granted. Make time for your family, especially when the times are tough. Offer to help your neighbor before they need it. Do your best to meet the needs of your clients, but don't neglect your family to do it. Those relationships are better than insurance for your current struggles and future successes. Through the muck, through the mess, treasure the people who are by your side.



*Eastern Ohio
Grazing Council*

For more information
and to RSVP contact
Carroll SWCD at
330-627-9852

GRAZING MEETINGS & PASTURE WALKS

Visit carrollswcd.org/eastern-ohio-grazing-council to view
flyers and information for upcoming pasture walks

SAVE THE DATE 2019 Pasture Walks:

April 25th—Carroll County
May 23rd—Harrison County

June 27th—Carroll County
July 25th—Columbiana County
August 22th—Tuscarawas County

September 26th—Jefferson County
October 24th—Stark County



2018 FARM SCIENCE REVIEW



September 17th—19th, 2019

Tickets on sale soon!

*Are you interested in
obtaining a pesticide
license or fertilizer
certification?*

Next Pesticide & Fertilizer Exam

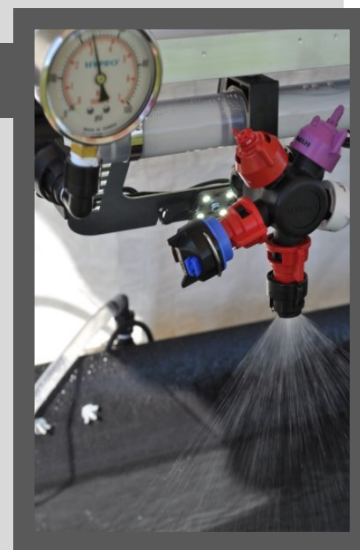
Thursday
August 22nd, 2019
10 A.M

Ohio State University Extension,
Carroll County
613 N. High Street
Carrollton, Ohio 44615

New applicators will need to complete an application, pay a \$30 license fee, and register with the Ohio Department of Agriculture at go.osu.edu/pesticideexam.

Study materials may be purchased at your local OSU Extension office or found online at pested.osu.edu. Contact the Jefferson County Extension office with questions.

This testing session includes exams for both private and commercial applicators. A private applicator applies restricted-use pesticides on his/her own land, or rented land, and produces an agricultural commodity. A commercial applicator applies pesticides for hire, on publicly accessible sites such as golf courses, apartment complexes, restaurants, schools, or while working for a government agency. Recertification will need to be completed once every 3 years.



2019 Neighborhood Gardens Schedule

Dates	Topics
Session #7: July 8th	Container Gardens
Session #8: August 12th	Native & Invasive Plants in Urban Gardens
Session #9: September 9th	Companion Plantings & Season Extension Techniques
Session #10: October 14th	Hydroponics & Aquaponics

Classes run every 2nd Monday of the month at 7pm January to October. The first 5 sessions will be held at Jefferson County JVS, 1509 County Highway 22A in Bloomingdale. Session #6 on June 10th will be at the Bantam Ridge School in Wintersville, and sessions #7 and #8 (July 8th and August 12th) will be held at the Schiappa Branch Library in Steubenville. Cost for each session is \$5/person, and pre-registration is required. Call the Jefferson County Extension office at 740-264-2212 or send an email to lyon.194@osu.edu to register for each session. Topics of sessions are subject to change.



Master Gardener Volunteers at the Farmers Gateway Market!



The Farmers' Gateway Market will be open for business in June at Eastern Gateway Community College in Steubenville, which means that you can look for the Master Gardener Volunteer booth to get your questions about backyard fruit, vegetable, and flower production answered. The farmers market begins Wednesday, June 5th, and the Jefferson & Harrison Master Gardeners will be there every other week starting June 25th.

- July 10: Canning Basics**—with Chris Kendle, OSU Extension Tuscarawas County
- July 24: Protect Yourself from Ticks**—with Jenny Baker, Tri-State Master Gardener Volunteer
- August 7: What Does It Take to be an OSU Master Gardener Volunteer**
- August 21: Growing Herbs**—with Betty Gotschall, Jefferson & Harrison Master Gardener Volunteer

Enjoy Local Foods!

The Farmers Gateway Market will run from June 5th—September 25th 4:30 PM—6:30 PM

Manure Science Review

Wednesday, August 7, 2019

JIMITA Holsteins | 9:20 am to 3:00 pm
9877 Strasburg Bolivar Rd. NW, Strasburg, OH 44680

Plus: Bull Country Compost Tour | 3:30 pm to 4:30 pm
10316 Kohr Road NW, Dundee, OH 44624

Continuing education credits have been approved (* waiting for approval):

CEU's

- ODA Certified Livestock Manager: 3.5 CLM hours for morning session
1.0 CLM hour for demonstrations
0.5 CLM hour for compost tour
- Certified Crop Advisor (CCA): 3.0 Soil & Water (SW) CEU's
2.0 Nutrient Management (NM) CEU's
- ODA Fertilizer Recertification: 4.5 Commercial (Cat 15C) hours
- IN Office of State Chemist: 3.0 Cat 14-CCH (2 CCH for program at JIMITA; 1 CCH for tour)
- PA Manure Hauler/Broker: 4.0 Manure Hauler/Broker CEC's



Manure Science Review is held each year at locations across Ohio. This year, MSR will be held in near-by Tuscarawas County. Learn more about manure management, legal liability, cover crops, manure application windows and a variety of field demonstrations featuring silage leachate and manure handling, soil health, stockpiling solid manure, spreader calibration, injection and shallow tillage, side dressing and composting livestock manure. Visit <http://go.osu.edu/19msrflyer> for more information and to register.

COLLABORATORS



SUMMER & FALL FIELD NIGHTS

Summer Song Vineyard Twilight Walk

Join Jeff Copeland, owner of Summer Song Vineyard, Dr. Maria Smith, OSU Viticulture Outreach Specialist, Todd Steiner, OSU Viticulture Research Associate, and Dr. Gary Gao, OSU Small Fruit Specialist for a vineyard tour and discussion of vineyard site selection, cultivar selection and disease management, growing recommendations, and the best grapes for wine. Cost of the event is \$10 per person and includes a light dinner. Pre-registration is required—register by July 30th by contacting OSU Extension, Jefferson County at 740-264-2212 or email lyon.194@osu.edu.

LOCATION: 46375 Old Hopedale Road, Cadiz

MONDAY

SEPTEMBER 23rd

4 PM—7 PM

TUESDAY

AUGUST 6th

4 PM—7 PM

LOCATION: 36000 Brushy Fork Road, Cadiz

Organic Production Field Night

Thinking about getting into or learning more about organic production? Come talk to the specialists about what it takes to go organic at Next 7 Organic Farms in Cadiz. This event will include a tour of the field and a light dinner. Cost of the event is \$10 per person. Pre-registration is required—register by September 16th by contacting OSU Extension, Jefferson County at 740-264-2212 or email lyon.194@osu.edu.



OHIO STATE UNIVERSITY EXTENSION

Jefferson & Harrison MASTER GARDENER VOLUNTEERS

WEDNESDAYS & THURSDAYS • October 2nd – November 7th • 5:30PM-8:30PM

The Ohio State University Extension offices in Jefferson and Harrison Counties are currently accepting new applications for the Master Gardener Volunteer training program for residents of both counties. Master Gardener Volunteers in Ohio contributed over 180,000 hours of service each year and offer assistance with home horticultural questions, pest identification, school programs, demonstrations, research, and continuing education programs.

Training sessions will begin in October and continue into November. Participants interested in receiving the intensive training will learn about basic botany, plant physiology, soils, entomology, plant pathology, plant diagnostics, integrated pest management, pesticide use and safety, lawn care, home vegetable and fruit production, backyard wildlife management and much more! Working with county Ohio State Extension personnel, Master Gardener Volunteers provide educational services to their communities. If you are a garden enthusiast, this is a great opportunity to share your gardening know-how and skills with others in your community.

Call 740-264-2212 or send an email to lyon.194@osu.edu for more information.

Cost of the program is \$100, part of which includes a Master Gardener Training Manual and a name badge.

Participants can choose to purchase supplemental reference books and materials for an additional \$125.

Deadline for registration is August 30th. Interviews will be held the first week of September.



jefferson.osu.edu
harrison.osu.edu



THE OHIO STATE UNIVERSITY

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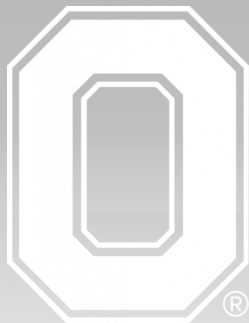
CFAES provides research and related educational programs to clientele on a nondiscriminatory basis. For more information, visit cfaesdiversity.osu.edu. For an accessible format of this publication, visit cfaes.osu.edu/accessibility.

Poor Quality Hay & Body Condition

It's important to know the quality of hay that you purchase for livestock. Nutrient deficiencies can lead to decreased body condition scores as well as decreased productivity and reproductive performance. Livestock may appear to consume a sufficient amount of hay, but poor quality hay can lead to muscle atrophy, visible spine, ribs and hip bones, indicating lack of nutrient uptake from feed. This can result in cattle showing rapid cow body condition score loss at key periods of production.

This year may prove difficult for finding good quality feed. It is important to get hay tested to determine the quality. Visual inspection of bales is misleading—only testing hay can give a good indication of its nutritional value.

If good quality hay is unavailable, supplemental feeds can help with deficiencies in energy and protein. Using different species of forages such as oats or brassicas can also minimize the effects of poor hay quality and make up for nutritional value. As we approach fall and winter this year, producers should consider stock piling forages to prepare for potential feed shortages and ensure livestock receive adequate nutrients.



SEASON CALENDAR

JULY

- 7/4 Independence Day—Office Closed
- 7/8 Neighborhood Gardens @ Schiappa Branch Library, 7pm
- 7/24-8/4 Ohio State Fair
- 7/25 Eastern Ohio Grazing Council in Columbiana County, 6pm

AUGUST

- 8/6 Summersong Vineyard Twilight Tour, 4pm
- 8/12 Neighborhood Gardens @ Schiappa Branch Library, 7pm
- 8/13-8/18 Jefferson County Fair
- 8/22 Eastern Ohio Grazing Council in Columbiana County, 6pm

SEPTEMBER

- 9/9 Neighborhood Gardens @ Jefferson JVS, 7pm
- 9/17-9/19 Farm Science Review
- 9/23 Organic Production Field Walk, 4pm

Stay Tuned for
Upcoming Farm Bill
Workshops

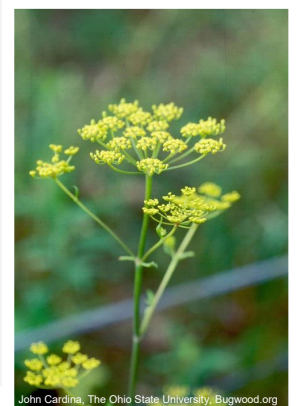


JULY 24 - AUG. 4
2019

EXTENSION'S MOST WANTED...



WILD PARSNIP...likely the first thing that comes to mind is the vegetable. While the roots of wild parsnip are edible, much of the plant can cause a severe and painful rash, although severity may vary person to person. Furthermore, wild parsnip can be easily confused with poison hemlock, which is poisonous if consumed. You should see wild parsnip in bloom throughout the summer—each very small with yellow or white petals. Yellow seed clusters are produced following bloom. The noxious weed occurs throughout this area of Ohio, especially along roadsides and in pastures, wet areas, and abandoned mine lands. Read more about wild parsnip at <https://bygl.osu.edu/node/1321>.



John Cardina, The Ohio State University, Bugwood.org



KNOW WHAT IS IN YOUR HAY BY GETTING IT TESTED

The quality of hay can be highly variable, and visual tests alone are often not enough to know whether or not your livestock are getting the most from pasture or hay. Forage tests provide information about fiber, nutrients, and energy value of your hay or pasture. Don't guess, forage test!

For help with forage sampling or interpreting forage test reports, contact the ANR Extension Educator in your county. Check out a forage probe from Jefferson or Harrison County Extension.



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

Ohio State University Extension embraces human diversity and is committed to ensuring that all research and related educational programs are available to clientele on a nondiscriminatory basis without regard to age, ancestry, color, disability, gender identity or expression, genetic information, HIV/AIDS status, military status, national origin, race, religion, sex, sexual orientation, or veteran status. This statement is in accordance with United States Civil Rights Laws and the USDA.

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.

Get your newsletter in color and help us save a tree! Sign up for electronic newsletters by sending an email to lyon.194@osu.edu.



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