BYGL Newsletter

August 14, 2014
This is the 20th 2014 edition of the Buckeye Yard and Garden Line (BYGL). BYGL is developed from a Tuesday morning conference call of Extension Educators, Specialists, and other contributors in Ohio.

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Plants of The Week »

* Annual - Marigolds (Tagetes spp.)
While marigolds are usually planted in the spring along with other annuals in your garden, many feel that they can really shine in the fall. Maybe it is their often thought of fall shades that come in yellows, oranges and golds. The two most common groups of marigolds are the French marigolds (Tagetes patula) and the African marigolds (Tagetes erecta). Marigolds tend to withstand light frosts, lasting a little longer into the fall than some of our other annuals.

Marigolds are tough plants, providing color in the landscape from spring through fall. Many gardeners plant marigolds in and around vegetables to deter some insects and wildlife. It is thought that the pungent flowers can deter some of our unwelcome garden creatures. Another added benefit is that some varieties are edible and can add a splash of color in salads and as a colorful garnish to meals.

* Perennial - Joe-Pye Weed (Eutrochium purpureum)
Joe-Pye weed is an herbaceous perennial in the Asteraceae family. This native plant blooms from July to September and even provides fall and winter interest with the spent flowers. This plant, with mauve to light purple blooms, prefers full sun to part shade. Its showy and fragrant flowers are very attractive to butterflies and bees and can be used in both formal and informal garden settings. The Missouri Botanical Garden lists Joe-Pye weed as tolerant to deer and both clay and wet soils.

Joe-Pye weed has become a staple plant where height is needed including in both butterfly gardens and rain gardens. Common Joe-Pye weed can reach heights between 5 – 7’ and widths between 2 – 4’. Some top rated cultivars described by the Chicago Botanical Garden include: coastal plain Joe-Pye weed (E. fistulatum ‘Little Joe’ and E. fistulatum ‘Baby Joe’); two types of hollow-stemmed Joe-Pye weeds (E. fistulose ‘Carin’) and (E. fistulose f. albidum ‘Bartered Bride’); spotted Joe-Pye weed (E. maculatum ‘Purple Bush’); and sweet-scented Joe-Pye weed (Eutrochium purpureum). Additional information about these cultivars can be found in the summary of the complete research study, "A Comparative Study of Joe-Pye Weeds (Eutrochium spp.) and Their Relatives" at [http://chicagobotanic.org/research/plant_evaluation](http://chicagobotanic.org/research/plant_evaluation)

For More Information:
Chicago Botanical Garden
Missouri Botanical Garden Plant Finder
[http://www.missouribotanicalgarden.org/PlantFinder/PlantFinderDetails.aspx](http://www.missouribotanicalgarden.org/PlantFinder/PlantFinderDetails.aspx)

* Woody Plant of the Week: Katsuratrees (Cercidiphyllum japonicum)
This Asian native is one of the largest deciduous trees in its native habitat of China and Japan, growing there to over 100 ft in height. Some trees are pyramidal, some spreading at maturity, with brownish bark becoming shaggy as the tree ages. Leaves are an elegant feature of everchanging hues, with emerging leaves in spring a rosy red-purple, summer leaves a blue-green and apricot to lemon fall foliage. Ovate to heart-shaped leaves are arranged oppositely or sub-oppositely on the twigs, which provide a delicate pattern to the branch array when viewed from below. Leaves are hygrophobic, with moisture pooling in jewel-like droplets.
Flowers are dioecious with male and female blossoms on separate trees, with reddish or greenish flowers inconspicuous in spring unless the light catches the bare branches just right. Fruits are small pods lined up in leaf axels along twigs. Katsuratrees do well in shade, but will thrive in sun as long as watered to prevent drought stress in establishment years. A popular specimen cultivar is ‘Pendula’ with cascading branches. Check out a magnificent example at Spring Grove Cemetery and Arboretum in Cincinnati.

As for the species, there are wonderful specimens throughout the U.S., with a rare self-seeding grove at OSU’s Secrest Arboretum in Wooster. The genus name reflects the heart-shaped leaves similar to those of Cercis (redbuds). As to relatives, Cercidiphyllum is a monotypic family - there is only one genus in the Cercidiphyllaceae. Katsuratrees have many virtues, both obvious and subtle. In Autumn, as the leaves fall, as you walk beneath the tree, what is that aroma - cinnamon, cotton candy, crème brulee, brown sugar? Imagine.

* Vegetable - Potato (Solanum tuberosum)

"New potatoes" or really young, sweet tubers are the "pride of dedicated gardeners" in the state of Ohio. This comfort food is actually an underground stem modified to store carbohydrates, specifically starch. Look closely at a potato and note how the "eyes" are arranged in a spiral around the tuber. These eyes are actually the buds arranged along the stem.

Potatoes are propagated from "seed potatoes" in early spring. The seed is actually a mature tuber cut into smaller pieces, with each piece containing at least two eyes. Potatoes can be planted in early spring in loose soil about 1’ apart and 3 - 4” deep. When the plants are about 6” tall, they need to be "hilled up", which is done by pulling soil up around the base of the plant. This provides additional soil depth and protection for the production of tubers. At maturity, each plant will have produced several potatoes - about a ten-fold increase from the original seed. Lift the tubers from the soil and let them dry before storing.

Cured, fully mature potatoes should keep for several months under cool dark conditions. Inspect stored potatoes frequently and remove any soft or shrunken tubers. Green potatoes can also be stored and used. The green indicates that the tuber was exposed to sunlight in the garden. The green color is chlorophyll but it indicates that solanine is also present in the green area. Solanine can cause illness but one would have to eat a large quantity of bitter green potatoes to reach that point. It is still best to peel away the green portion.

For More Information:
Cornell University- Potatoes- Growing Guide
http://www.gardening.cornell.edu/homegardening/scene6be.html

* Weed - Horsetail (Equisetum spp.)

Horsetail thrives in many habitats such as wet fields, grasslands, streams, poorly drained areas, roadsides, and railroad tracks. Horsetail is troublesome due to its prolific rhizome and tuber system. Horsetails, also known as scouring-rush because they were used to scour and polish pans, are especially unwelcome in pastures because they are toxic to ruminant animals.

Plants produce two types of stems, reproductive and vegetative. The reproductive stems appear in the early spring and are white to light brown, unbranched, and hollow. The cone-like structures, called strobilus on the reproductive stems mature and burst open releasing spores. The reproductive stems then wither and die by early summer. Vegetative stems emerge later than the fertile stems and are different. They look like miniature pine trees with their plume-like branches. This appearance also explains the plant’s common name: horsetail. Sterile stems are green, erect or somewhat prostrate, 6 - 24” tall.

The underground rhizome systems of these plants make it very difficult to eradicate this plant from areas where it is not wanted. Even the smallest piece of rhizome can form a new plant. Horsetails contain a high amount of silica in their tissue. This silica was very useful to Native Americans and pioneers when cleaning their cooking utensils.
Bobcats in Ohio

The Ohio Department of Natural Resources, Division of Wildlife recently released a report on BOBCAT (Lynx rufus) sightings in the state during 2013. For the past 4 years, there have been over 100 verified sighting of bobcats but for the first time, 2013 clocked 200 verified sightings. The most sightings were confirmed in Noble County and the surrounding counties. To date, bobcats have been seen in 49 counties since their return to the state in the 1970s. Bobcats were extirpated from Ohio in the 1850s, and for many years were on Ohio's list of endangered and threatened species. Now, although they are still protected, they have been removed from the list and are once again comfortably roaming parts of Ohio!

While bobcats are predators, there is little need to worry for the safety of your family. They are slightly larger than a good-sized house cat, and prey mostly on rodents, rabbits, and birds. Poultry and small domesticated animals may be at risk from bobcats. If bobcats have been seen in your area, be sure small dogs are on leashes at night and poultry is caged and protected. While bobcats in the southeastern US have adapted to some urban and suburban areas, bobcats in Ohio are more common in the rural, heavily forested southeastern Ohio.

For More Information:
The Ohio Department of Natural Resources, Division of Wildlife recently released a report on BOBCAT (Lynx rufus)
sightings
http://animaldiversity.ummz.umich.edu/accounts/Lynx_rufus/

Troubles with Bird Feeder Bandits? There's A Factsheet for That!

The EASTERN GREY SQUIRREL (Sciurus carolinensis), FOX SQUIRREL (Sciurus niger), RED SQUIRREL (Tamiasciurus hudsonicus), and even the SOUTHERN FLYING SQUIRREL (Glaucomys volans) can cause major headaches to homeowners feeding birds. These pesky rodents never fail to find a way to the sunflower seeds, millet, peanuts, and other seeds we put out for our feathered friends. Before you pull out the last of your hair, check out this fact sheet from the University of Nebraska Lincoln titled, 'Selective Bird Feeding: Deterring Nuisance Wildlife from Bird Feeders'. This fact sheet explores many different options for keeping your feeders out of the paws of certain bushy-tailed arborists, such as choosing the best location for your feeders, using barriers, minimizing fallen seed, and choosing the right kind of bird feeder. The fact sheet also lists strategies to take against other bird feeder bandits, like cats and raccoons. Find the fact sheet here: http://www.ianrpubs.unl.edu/live/ec1783/build/ec1783.pdf. For more information on different types of feeders for birds, as well as the best seeds to stock them with, revisit BYGL 2013-14 (06/07/12), 'Gardening for Birds: Attracting Birds with Feeders'.

For More Information:
Cornell Lab of Ornithology, Project Feeder Watch
http://www.birds.cornell.edu/pfw/AboutBirdsandFeeding/abtbirds_index.html

Diagnostic Lightning Round

Participants in this week's Southwest Ohio BYGLive! Diagnostic Walk-About held in Mt. Airy Forest (Cincinnati Parks) had an enlightening discussion regarding severe canopy dieback observed on a large pecan tree (Carya illinoinensis) located in the Mt. Airy Arboretum. Although pecans are not considered common in Ohio, there are a surprising number of large specimens sprinkled around the southern part of the state with some trees reliably producing a viable nut crop. Indeed, the Mt. Airy pecan tree has consistently produced nuts and had a full canopy last season. However, the tree emerged from our unusually cold winter with large sections of the canopy dead or dying.

The discussion at first centered on the possibility that low winter temperatures were responsible for the dieback. The group didn't need to look far to see that other "southern trees" in the Arboretum had suffered winter injury including a crepe myrtle with stems killed to the ground and southern magnolias that had re-foliated after losing their evergreen leaves. However, the general perception that pecans are exclusively a "southern tree" isn't supported by the original geographic range for this native tree.
The United States Geological Survey (USGS), Geosciences and Environmental Change Science Center provides range maps for a number of native trees species [http://esp.cr.usgs.gov/data/little/] and their map for pecans [http://esp.cr.usgs.gov/data/little/caryilli.pdf] shows the trees originally ranged from Illinois and southern Indiana, through Missouri, Arkansas, Louisiana, Oklahoma, and eastern Texas. The fact that pecan trees originally grew throughout a large portion of Illinois, north along the Mississippi almost to Wisconsin, is reflected by the specific epithet, *illinoinsensis*.

The term "provenance" refers to specific geographical locations within the natural range of a tree species. It is a term commonly used to highlight genetic variation within a tree species that naturally occurred based on differing environmental conditions throughout the range of the species. All pecans did not evolve in the southern U.S., so it is logical that pecans that evolved in the tree's northern range are more cold tolerant than those that grew in the tree's southern range. Thus, some pecan varieties - selected from northern provenances - can grow in Ohio.

But, that is not the entire story. Question #9 in the 20 Questions on Plant Diagnosis [http://ohioline.osu.edu/hyg-fact/3000/pdf/PP401_03.pdf] is *Who knows the most about the plant?* Larry Parker (Cincinnati Parks) hosted the Diagnostic Walk-About and he provided the crucial answer that ended the speculative diagnostic discussion centered on cold hardiness and winter injury: the pecan tree had been struck by lightning last September. Participants observed the pecan tree with new eyes seeing deep fissures and shattered bark high on the trunk and a deep fissure low on the trunk which illustrated the value of paying attention to question #6: *What exactly do you see?*

## Bug Bytes »

### Elm Sawfly

Jim Chatfield, Erik Draper, and Amy Stone reported coming across elm sawfly larvae (*Cimbex americana*) during their recent journey to Milwaukee, WI, to teach in the 2014 ISA International Conference and Trade Show. This is one of the largest cimbicid sawflies (order Hymenoptera, family Cimbicidae) found in North America. Adults are around 1" in length with a 1.75" wingspan and late instar larvae may be as long as 2". Although these native sawflies have a wide historical geographical range which includes the upper Midwest and northeastern states, elm sawflies are actually somewhat rare, particularly in forests. Their most significant damage typically occurs on landscape trees.

Despite their common name, elm sawflies may also be found on willows as well as occasionally on birch, linden, maple, and poplar. Unlike most sawflies, both the adults and larvae cause damage. The adults use their powerful mandibles to strip bark from twigs to consume the sugar rich phloem beneath. Extensive adult feeding damage may girdle stems causing noticeable stem dieback. Early instar larvae feed along the leaf edges producing irregular gouges along the leaf margins. Later instars consume almost the entire leaf leaving only a small part of the midveins.

As with all sawflies, the adults have robust bodies with thick "waists" which makes them look less like they are related to wasps and more like they’re related to flies, thus their common name. Both the males and females have shiny black heads and thoraces. Males have abdomens that are reddish-brown towards the rear and they have distinct white spot on top of the abdomen just behind the wings. Females have abdomens with black and yellow bands. The "saw" part of the common name comes from the female's saw-like ovipositor that she uses to insert eggs into leaf tissue.

The larvae vary in color from light yellow to light green; however, all have a distinct black dorsal stripe that runs the length of their body. As they feed, the larvae often coil their posterior end around leaves or twigs, presumably to help hold themselves on their host trees. Larvae that are at rest or taking a defense posture form their entire body into a tight coil. There is one generation per season with winter spent as prepupae in tough, papery cocoons in the leaf litter or just below the soil surface beneath host trees.

### Gypsy Moth Update
While the caterpillar feeding has long been finished, and the flight of the male moths in search of that "special" female is complete, the next generation has been laid and is waiting patiently for next spring. Now is the time to scout for gypsy moth egg masses. It is those egg masses that will help The Ohio Department of Agriculture (ODA) and others predict what the future holds – specifically for the 2015 spring season. Egg masses can be found on trees, especially on the undersides of branches, the main trunk, and under any bark flaps; on vehicles, trailers, buildings, fences, furniture, or garden art; and inside places like birdhouses, dog houses, and sheds. They can be laid nearly anywhere. The more egg masses there are, the more places they can be found. It can be like an Easter egg hunt, but gypsy moth style!

Gypsy moth eggs that were laid primarily during the month of July in Ohio, will remain in that stage throughout the fall, winter, and into early spring. The outside of the buff or tan colored egg masses resemble felt and are the size of a quarter, but usually more oval in shape. Egg hatch will occur at the same time that redbuds (Cercis canadensis) are blooming. Check out information on the plant phenology calendar at http://www.oardc.ohio-state.edu/gdd/.

If you experienced a gypsy moth outbreak in 2014, are you prepared for 2015? What will those levels be next season? If you suspect levels will cause measurable damage in the form of defoliation, you may consider applying to the State Department of Agriculture (ODA) to be considered for their suppression activities. Minimum requirements for the voluntary suppression program includes: canopy coverage, contiguous acres, and number of egg masses. There is a cost share for these applications. Application deadline is September 1, 2014.

For More Information:
Ohio Department of Agriculture
FAQ for Gypsy Moth Suppression Program
FAQ for Gypsy Moth Slow-The-Spread or Eradication Programs

**Disease Digest**

**Dreaded Late Blight in NE Ohio**

Erik Draper reported a significant find this week for the world of tomatoes and potatoes. He was called out to investigate 2 different commercial vegetable fields to diagnose what was causing the large necrotic spots on tomato leaves. Near the western edge of Trumbull County, Erik found the fungal disease, LATE BLIGHT, pathogen *Phytophthora infestans*, just beginning its rampage through the tomato foliage and fruit. This fungal disease is so infectious, that under the proper conditions of cool, wet or extremely high relative humidity, it can wipe out a field of tomatoes in 7 days! So what does this all mean for Ohio’s gardeners and vegetable producers? Erik fears that we may have a worst case scenario building in NE Ohio tomato fields, if things are left "as is" without some intervention, like fungicides. We have a tremendous crop of susceptible tomatoes that have been slow to ripen, combined with almost perfect, conducive environmental conditions for Late Blight, and finally we have the presence of the infectious agent. We have completed the disease triangle to perfection and in this forge of infection, we will again remind ourselves what can work and what does not against this formidable fungus!

Here are the recommendations for Ohio’s gardeners from Dr. Sally Miller, Plant Pathologist, Vegetable Extension Specialist, Ohio State University: "Healthy-looking plants should be protected with a fungicide containing chlorothalonil (as the active ingredient) or copper; several brands are available in garden centers and other retail outlets. Chlorothalonil is more effective than copper in controlling late blight."

Home gardeners must understand that this fungicidal approach will by no means ensure that their plants will never be infected by the late blight fungus. This specific fungicide, chlorothalonil, may help delay some plant infections, if the fungus is present in the area; However, if the environmental conditions are perfect for disease development, this fungus can
Commercial vegetable growers have much better fungicide options available to help them manage this disease. Dr. Sally Miller’s recommendations are: "Protect plants with chlorothalonil or mancozeb (protectants) before the disease appears. Scout fields intensively for late blight and destroy any infected plants. Growers with fields in which late blight has been found should also consider applying Curzate, which has curative activity, plus a protectant fungicide. Other fungicides that can be used in a program that alternates products with different modes of action include Gavel, Previcur Flex, Presidio, Ramman and Tanos. Previcur Flex, Presidio, Ramman and Tanos must be tank-mixed with a protectant fungicide, containing chlorothalonil or mancozeb. If late blight has been a problem in a potato field, vines should be killed 2 - 3 weeks prior to harvest to minimize infection of tubers."

All that can be done is to remain vigilant and be aware of any reports of late blight infections that are confirmed within the state of Ohio. Let’s keep our fingers crossed and hopefully our tomatoes will be fresh from the garden for the rest of the year!

For More Information:
OARDC FACT SHEET- "Late Blight Got Your Tomatoes/Potatoes? Learn about Symptoms, Management"
http://go.osu.edu/potato
Cornell University- Long Island Research and Extension Center- "Late Blight on Tomato"
http://www.longislandhort.cornell.edu/vegpath/photos/lateblight_tomato.htm

What Exactly Do You See?
This is the key 6th Question of the 20 Questions (now up to the 25 Questions of Plant Diagnostics) we use in our Plant Diagnostic Workshops. The first five questions are: What is the Plant?, What is Normal for the Plant?, What Are the Common Problems of the Plant?, What Do You See that Looks Abnormal?, and What is the Overall Health of the Plant?

The plant problem diagnostic process is not unlike our judicial process and the same dangers associated with "pre-judging" also apply. Starting with a diagnosis, then selectively gathering facts to support the diagnosis is likely to produce an incorrect diagnosis; to wrongly convict. Plant problem diagnostics should be guided by the axiom: don't make the symptoms fit the diagnosis; do make the diagnosis fit the symptoms.

"What exactly do you see?" is an important "reality check" in the diagnostic process. Are you on the right track? After stepping back to consider the overall health of the plant, force yourself to step back again to reconsider in more detail Question 4: "What do you see that looks abnormal?" The key to diagnosis is often in such details, sometimes related to others who help with the diagnosis, such as a diagnostic lab technician or coworker in your company.

It is very important to note the pattern of damage. Is the damage on older leaves, newer leaves or both? Is the damage only on the lower part of the plant, upper part of the plant, or throughout the plant? Do symptoms appear to be located on a particular part of the leaf? A good example of this is the difference in symptoms between anthracnose and physiological leaf scorch of many plants.

To the casual observer, both problems involve blotchy, scorchy, brown discoloration of the leaves. However, the details are quite different. With anthracnose, caused by a fungus, the blotted areas are more of a reddish brown than a tanish brown, but more importantly, are concentrated along the leaf veins. With physiological leaf scorch, caused by excess evaporation of water from leaves due to a variety of factors, the blots are not concentrated along the leaf veins and are typically more to the outer margins of the foliage. Knowledge of this difference in symptoms is the sort of fine-tuning that diagnosticians develop as they improve their observational and reporting skills.

As can be seen with this fungal leaf blotch disease vs. physiological leaf scorch example, noticing where symptoms are occurring is critical. Diplodia (Sphaeropsis) tip blight of pine is characterized by browning and stunting of new growth on young Austrian, red, Scots and mugo pine shoots, in addition to dieback of new growth (the growth farthest out on the branch). This disease typically occurs on the bottom branches of the tree first and works its way upward over the years.

Compare this to the normal seasonal loss of inner needles from previous years that occur on pines. Every fall, many people become worried about the yellowing, browning and falling needles on pine, even though loss of older needles is normal. Each evergreen species drops needles of different ages, so good plant identification and knowledge is essential. Careful observation of the details of whether the browning needles are on new or old growth is crucial for good diagnosis.
**Rust on Turfgrass**

Rust is a common fungal disease found on most species of grasses around the world. Rust can be found early spring through fall depending on the location. Yellow flecks on the leaf blades are the first signs of rust disease on turfgrass. The yellow flecks enlarge which cause the leaf epidermis to rupture and release yellow-orange powdery spores. These fungal spores easily get on shoes, mowers, and pets but are not harmful to humans or animals. In severe incidences, infected grass can thin and individual shoots may die.

**Grasses Affected:** Perennial Ryegrass (Most Common), Kentucky Bluegrass, Tall & Fine Fescues, Zoysiagrass, and Bermudagrass.

**Environmental Conditions**

Rust is favorable in slightly warm moist conditions in conjunction with prolonged leaf wetness from dew. Wetness of the leaf blade for more than 10 hours with air temperatures between 68 F - 86 F, are optimum growing conditions for this pathogen.

- Mid-Summer through Fall (Most Common)
- Optimum air temperature for pathogen 68 F - 86 F
- Leaf wetness followed by rapid increase in temperature and high light intensity
- Stressed grass from: Drought, Low nitrogen, Low mowing height, and Shade.

**Pathogen**

There are many types of fungi that cause rust. The most common are *Puccinia graminis* (Black Stem Rust), *Puccinia coronata* (Crown Rust), *Uromyces dactylidis* (Leaf Rust), and *Puccinia striiformis* (Yellow Stripe Rust). The disease life cycle of rust is often very complex.

**Management:**

*Genetic host resistance:*

Today there are many new cultivars that have a high resistance to rust diseases. It is important before seeding to make sure you select a resistant cultivar. Visit the National Turfgrass Evaluation Program (NTEP) at [www.ntep.com](http://www.ntep.com) to find more information on rust resistant turf.

*Cultural Practices:*

The most effective control for preventing rust is to establishing a healthy turf. Providing enough nitrogen and maintaining a proper irrigation regime will minimize the chance of rust. Below are key cultural practices to prevent this disease.

- Maintain a good fertility program adequate for healthy turf growth
- Avoid moisture stress
- Avoid irrigating in evenings
- Raise height of cut
- Manage Soil to avoid compaction

*Chemical Control:*

Fungicides are commonly not used to control this disease if proper plant health practices are being done. However, if a severe rust outbreak exists on a healthy turf stand, two fungicide families, DMIs and Strobilurins, are the most effective in suppressing the disease. Remember to follow application rates and make sure the fungicide is labeled for your area of application (i.e. residential lawn or golf course). Below are a few of the effective fungicides for rust. Post infection applications often are slow to reduce the disease and multiple application may be required. Preventative applications are much more effective.
The 2014 OTF Turfgrass Research Field Day was a great combination of research findings and direct application of that knowledge to assist turfgrass managers to become better informed. From the golf courses to residential lawns, it was all covered and demonstrated out at the OTF/OSU Turfgrass facility. Right from the start, it was clear that knowledge, proper practices and techniques of turfgrass care reigned supreme. If anyone ever questioned if fungicides really worked or what would be the big deal if you didn't apply anything to turf...WOW, the answer to that question was obvious in the "dollar spot drubbing" area. There were many visual face plants into the findings of turf research, like "Would one application of fungicide be enough for the season?" or "How long would one application really last on turf?"

Research findings showed which selective herbicides worked best on crabgrass, and how granular fungicides performed compared to liquids. Which fertilizers provided the best time-released effects for turf? The day was an incredible non-stop smorgasbord of turfgrass knowledge and information. If you have never attended one of these field days, put it on your calendar for next August! In one single day, more knowledge of what works best for turf and therefore, by extension, what works best for you is available for everyone. Kind of reminds me of that old adage that still applies today, "Knowledge is free, but you have to bring your own container!" See you next year!

**EAB Treatments Do Not Produce Super Trees**

There is no doubt that treatments with systemic insecticides can protect ash trees from the ravages of emerald ash borer (*Agrilus planipennis*) (EAB). In fact, the multi-state 2nd Edition of "*Insecticide Options for Protecting Ash Trees from Emerald Ash Borer*" provides updated research-based information on effective EAB treatment options [http://www.emeraldashborer.info/files/multistate_EAB_Insecticide_Fact_Sheet.pdf](http://www.emeraldashborer.info/files/multistate_EAB_Insecticide_Fact_Sheet.pdf).

However, arborists should help their clients understand that insecticide treatments against EAB will not produce super ash trees. Treated trees are still susceptible to a range of pest and disease problems that were observed on ash trees long before EAB arrived on the scene.

The insecticides targeting EAB will not prevent twigs and branches from becoming graced with the bizarre looking broccol-like ASH INFLORESCENCE (flower) GALLS caused by the eriophyid mite, *Eriophyes fraxinivorus*. Lumpy, green ASH MIDRIB GALLS produced by the midge fly, *Contarinia canadensis*, and fleshy, dark red ASH POD GALLS produced by the midge fly, *Lasineura araphila*, have both been observed on ash trees that have been successfully protected from EAB with insecticide treatments. Insecticides do not control fungal diseases, so ash leaflets on treated trees may still show reddish-brown lesions and drop from the trees; symptoms of the fungal disease ASH ANTHRACNOSE. They may become speckled with various sized LEAF SPOTS and drop from trees; symptoms caused by two different fungi: *Mycosphaerella effigurata* and *M. fraxinioides*.

Of course, these problems seldom cause significant harm to the overall health of ash trees. The same cannot be said for the fungal disease VERTICILIUM WILT or the phytoplasma disease ASH YELLOWS. These systemic diseases are tree killers and infected ash trees will die regardless of whether or not they have been treated for protection against EAB. The same is true for the numerous environmental and cultural catastrophes that may befall ash trees; sometimes at our own hands. This is not to say an ash tree shouldn't be treated against EAB. However, solving one plant problem does not solve all plant problems. It is important to provide information to tree care clients that clearly define expectations associated with
EAB treatments. Otherwise, clients may have unrealistic expectations: they may believe they’re paying for super ash trees!

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**August is Asian Longhorned Beetle (ALB) Awareness Month, Part Three**

The month of August is also known as TREE CHECK MONTH. This entire month we will be highlighting a different aspect of what you can do to help with early detection efforts each week. This week we will be focusing on the insect and what to look for. If you see anything that looks like a potential ALB, collect a specimen and contact the USDA or ODA. Potential infestations can also be reported on the Great Lakes Early Detection APP or on the Great Lakes Early Detection website. Early detection and rapid response is key to ALB and other non-native invasive species.

The Asian longhorned beetle is a BIG beetle. Adults measure 1 – 1.5” in length. The beetle belongs to the family Cerambycidae. Beetles in this family are commonly called "longhorned" because of their extremely long antennae. The antennae of ALB have alternating bluish-black and white bands and are longer than the length of the beetle's body. The bullet-shaped, shiny black beetles are covered with numerous, irregularly shaped and sized white spots; the spots look like someone has tried to dab white paint onto the beetle using a frayed paint brush.

There are very few native longhorned beetles that are look-alikes to ALB. Indeed, many of the North American infestations, including the Worcester, Mass., infestation, were discovered by people finding beetles rather than diagnosing the tree mortality caused by the beetles.

ALB produces a single generation per season. Adults have been reported to be active from April through December with peak activity during May to July. Newly emerged adults spend some time feeding on the phloem tissue of small twigs and on tree leaf veins. This is known as "maturation feeding." While distinct symptoms are produced, the damage is not on the same scale and as apparent as the symptoms produced by other twig and leaf-feeding insects simply because of the number of beetles feeding at a given time. The beetle can successfully spend the winter in all stages (egg, larva and pupa) except the adult stage and adults are killed b the first substantial freeze.

The larval stage of ALB is the "killer stage". The immature stages are found inside infested trees, which is why it is important to avoid moving wood (such as firewood and logs) outside ALB quarantine zones - moving infested wood moves ALB! Cerambycid larvae are commonly referred to as "roundheaded borers," and ALB larvae look like typical cerambycid larvae. The segments toward the front of the fleshy, thin-skinned, yellowish-white larvae are larger in diameter than the rest of the larval segments. This makes the larvae look like they have round heads and tapering bodies.

ALB larvae usually develop through five instar stages. The first and second instar larvae commonly tunnel through and feed on phloem tissue. Their feeding activity may produce weeping, canker-like symptoms on the bark. Third, fourth and fifth instar larvae bore deep into the white wood. Occasionally, this change in feeding location within the tree from phloem to the xylem begins with second instar larvae.

Identifying Cerambycid larvae can be tricky because they share so many features. However, finding roundheaded borers in the live stems and branches of a preferred ALB host, particularly Acer spp., should signal concern and further investigation. If you see this – be sure to report what you are observing. Get your ALB hunting skills on and help us look for ALB in Ohio! Next week will we cover what other clues to look for as you join in the fight to monitor for ALB in your own landscape or community.

For More Information:

ALB Website

http://www.asianlonghornedbeetle.com

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**Latest from the 87th Ohio State University Green Industry Short Course**

This year's event will be held in conjunction with the 48th Annual Ohio Turfgrass Foundation Conference and Show on December 9 – 11, 2014 at the Kalahari Resort and Convention Center in Sandusky, Ohio.

A few of the OSU Green Industry Short Course talks confirmed this past week include Pam Sherratt who will team with Jim Chatfield to talk about the environmental benefits of turf and trees and Jim Zwack of Davey Tree Expert Company in Minnesota teaming with Joe Bogg and Jim Chatfield on "When Worlds Collide: The Invasiveness of Invasiveness, covered
WeatherWatch

Weather Update

The following weather information summarizes data collected at various Ohio Agricultural Research Development Center (OARDC) Weather Stations spanning the dates from August 1 – 13, 2014, with the exception of the soil temperatures which are readings from Wednesday, August 13, 2014 at 5:20 p.m.

The "dog days" of summer have not really hit this year. Evening temperatures have many people thinking fall – can it be that close? Storms moved through the state on Monday. While the original track of the storm was predicted to move across the southern part of the state, precipitation fell as far north as SE Michigan. Rainfall totals in northwest Ohio ranged from 2 – 5" on Monday, with additional rain falling on Tuesday. Minor flooding occurred in the greater Toledo area, but residents watched in awe of the major flooding that occurred in Detroit, Michigan. Stretches of I-94 and I-75 had to be closed because of the standing water over the highways and remained closed several days after the rainfall event. Water was so deep in certain areas that divers were called in to look for vehicles under the water which reached depths of greater than 16'.

Even when big rainfall events occur, it is always important to remember how isolated storms can be. It is important to monitor rainfall in your own landscape and in specific areas if your work takes in across a wider geographical area. Recording weather information can help when diagnosing plant problems – especially when looking back to get a historical perspective. Weather extremes like periods of drought or heat waves can sometimes be masked when one only looks at year-to-date totals.

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<td>58.3</td>
<td>0.16</td>
<td>1.3</td>
<td>69.30/65.53</td>
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<tr>
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<td>Central</td>
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<td>0.54</td>
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</tbody>
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For More Information:
OARDC Weather Stations
http://www.oardc.ohio-state.edu/centernet/weather.htm

Coming Attractions

August 27 - Pesticide Safety Training

New Commercial Applicators and Training Servicepersons, August 27, 2014. Core and Trained Serviceperson trainings are held in the morning, and Categories 8, 5, 2c, and 6c in the afternoon. The session will be held at the ODA in Reynoldsburg, Ohio. For more information about the event, check out the PestED website at http://pested.osu.edu

Plant Trials Day at the Cincinnati Zoo & Botanical Garden
This all day symposium will take place August 28, 2014. Speakers include legendary plantsmen/nurserymen Roy Klehm of Beavercreek and Song Sparrow Nurseries and Bill Hendricks of Klyn Nurseries; top perennial trials expert Richard Hawk, Chicago Botanical Garden; top annual trials expert Susie Raker, Raker’s & Sons; and Steve Foltz and Scott Beuerlein. For more information and to register visit https://tickets.cincinnatizoo.org/mainstore.asp?vid=2&cat1199

Ohio Plant Diagnostic Workshop: Second Notice

Don't miss the 82nd Ohio Plant Diagnostic Clinic, open to all interested plant diagnosticians on September 5, 2014. This all day, hands-on workshop held at OSU’s Secrest Arboretum in Wooster, OH includes diagnostic samples, walks and updates by OSU’s Tree Amigos (Joe Boggs, Erik Draper, and Jim Chatfield), and all the assembled experts so plant pathology, entomology, and horticulture and all the assembled attendee-experts. Two added bonuses will be identification of herbaceous plants by Cathy Herms of OARDC and updates and tours of Secrest Arboretum by Kenny Cochran, Joe Cochran and Paul Snyder. The registration fee of $40 includes program materials, lunch and refreshments. Further information is available at: go.osu.edu/chatfield or contact Cheryl Fischnich at fischnich.1@osu.edu or 330-263-3831. Registration deadline is August 29.

For More Information:
Jim Chatfield's Website
http://go.osu.edu/chatfield

Farm Science Review

This year’s Farm Science Review takes place September 16 - 18, 2014 at The Ohio State University's Molly Caren Agricultural Center outside London, OH. Participants can peruse 4,000 product lines from 600 commercial exhibitors, and capitalize on educational opportunities from Ohio State and Purdue University specialists. For in-depth information on natural resources, visit the Gwynne Conservation Area during the review or visit www.gwynne.osu.edu for more information now. Farm Science Review pre-show tickets are $7 at all OSU Extension county offices, many local agribusinesses, and also online at http://fsr.osu.edu/visitors/tickets . Tickets are $10 at the gate. Children 5 and younger are admitted free. Hours are 8 a.m. to 5 p.m. Sept. 16 - 17 and 8 a.m. to 4 p.m. Sept. 18.

September 24 - Pesticide Safety Training

New Commercial Applicators and Training Servicepersons, September 24, 2014. Core and Trained Serviceperson trainings are held in the morning, and Categories 5, 2c, and 6c in the afternoon. The session will be held at the ODA in Reynoldsburg, Ohio. For more information about the event, check out the PestED website at http://pested.osu.edu

Arboretum Feast #2

The 2nd annual ArborEatum edible landscape feast and sharing will be held on Wednesday, October 8, 2014 at OSU's Secrest Arboretum at the Ohio Agricultural Research and Development Center in Wooster. More details to come, but start planning your menu items. Last year’s hits were legion, from over 30 entries from Cleveland’s Lois Rose (from bitter orange marmalade to medlar jelly) to ramps soup to controlling- invasives-one-bite-at-a-time Autumn olive pate de fruits. Lamb'squarter omelettes anyone?

Wood-Destroying Insect Inspection Training, October 8, 2014

Mandatory training is required for applicators becoming licensed in commercial Category 12. Recertification credit is available. The session will be held at the ODA in Reynoldsburg, Ohio. For more information about this event, check out the PestED website at http://pested.osu.edu

The 87th Ohio State University Green Industry Short Course

Mark your calendars! The 87th OSU Green Industry Short Course, formerly the OSU Nursery Short Course, will be held in conjunction with the 48th Annual Ohio Turfgrass Foundation Conference and Show on December 9 – 11, 2014 at the Kalahari Resort and Convention Center in Sandusky, Ohio. For more information, visit the Short Course website at: www.osushortcourse.com

Byglosophy

What is a weed? A plant whose virtues have never been discovered.

Ralph Waldo Emerson
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