BUCKEYE YARD AND GARDEN LINE 2015-20
08/20/15

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Buckeye Yard and Garden Line (BYGL) enhanced with photos and links is available online at: [http://bygl.osu.edu]. Become a fan of the BYGL on Facebook at [http://www.facebook.com/OSUBYGL] or follow the BYGL on Twitter at [http://www.twitter.com/OSUBYGL].

This is the 20th 2015 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.

******HOW TO: BUCKEYE YARD AND GARDEN LINE SUPPORT. The Ohio State University (OSU) Buckeye Yard and Garden Line (BYGL) writers need your support to continue this newsletter. OSU puts a great deal of resources into this project and we do not receive funding necessary for full support. We know you like BYGL, as in the 2014 Reader's Survey respondents indicated BYGL saved them $2.45 million dollars, 96% indicated BYGL was useful in their jobs, and 87% indicated BYGL helped with their diagnostic skills.

Funds will support on-going work of the Ohio State University Extension Nursery Landscape and Turf Team in matters regarding preparation, compilation and travel for the weekly April-October BYGL e-newsletter. Expenditures will include but not be limited to equipment such as cameras, upgrades of computers and related devices, management of the website, editing and webinar costs, and travel reimbursements.

Here's how you show your support:

This is the direct link to the OSU giving site: [http://go.osu.edu/byglsupport].

Or:

Go to [https://www.giveto.osu.edu/makeagift/OnlineGivingDonation.aspx?fund=315145] and click on "search," then enter the fund number into the box. The fund number is 315145 and the name is Buckeye Yard & Garden Support. The fund, its name and description will appear in a new, smaller box. Click "Select this fund."

Then, you can either leave the default $100 in or change it; and fill out the remaining form (name, address, etc.). The form will walk you through. You can either do a one-time gift or recurring (monthly, etc.).

Also, if you would like to make a larger gift, please contact Jennifer Heller ([heller.4@osu.edu]), the Director of Development for the OSU College of Food, Agricultural and Environmental Sciences with your name and contact information. Jennifer's cell phone number 614.975.1317 and she will be more than happy to speak with you.

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1. PLANTS OF THE WEEK.

*ANNUAL - HELIOTROPE (Heliotropium arborescens). Native to Peru, heliotrope is grown as a summer annual bedding or container plant in Ohio. In its native habitat heliotrope grows 2 - 6' tall but in Ohio it typically grows 12 - 18" tall in a growing season. Heliotrope flowers are known for their delicate vanilla-like fragrance. The colors can be blue, violet or white and grow in large showy clusters that bloom from summer to fall. The flowers should be deadheaded to encourage additional blooms. The leaves are a deep green that are rough and prominently veined. Heliotrope prefers a moist, organically rich and well-drained soil and grows best in full sun. However these plants appreciate some shade from the hot afternoon sun. Plants may be grown indoors if kept moist in a sunny location with cool (50 - 55F) nights. Heliotrope attracts butterflies and is thought to be deer resistant.

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*PERENNIAL - FALSE SUNFLOWER (Heliopsis helianthoides). This versatile upright oxeye daisy or false sunflower is in bloom across Ohio. This North American-native plant with its daisy-like erect flowers benefit pollinators in late summer with its nectar flow, while its seeds provide a food source for birds and stems provide winter habitat for beneficial insects. In addition, it is hardy, easy to grow in full sun to partial shade in well-drained soils, AND is drought tolerant. It also has no serious insect or disease problems other than some varieties are susceptible to aphids.

A member of the asteraceae family, its 2 - 3" diameter compound flower has yellow-orange rays surrounding a brownish-yellow center disk. Growing 3 - 4' high, its stiff stems are clad with opposite toothed leaves that are oval to triangular or lance-shaped. False sunflower is in the genus Heliopsis which translates to 'resembling the sun' (helios means sun and opsis means resembling). It is a close relative to the true sunflower or Helianthus.

Oxeye daisy is very adaptable to various soil types but is not salt tolerant. It does not pose a threat to becoming a weed in agricultural land; but, it reseeds easily and can spread in landscape settings. False sunflowers provide a long bloom time for borders, cut gardens, or pollinator stations. Taller plants may require staking or there is a dwarf cultivar 'Tuscan Sun' which grows 15 - 20" tall. This might be a perennial you want to consider adding to your landscape.

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*WOODY - BLACK TUPELO (Nyssa sylvatica). Black tupelo is native to the entire eastern United States, and is found in all of Ohio except for the northwestern part of the state. This tree grows best in full sun or partial sun. Black tupelo strongly prefers moist, well-drained, rich, deep, acidic soils, but
adapts surprisingly well to dry, average, alkaline soils. This tree has very few pest and disease problems and is hardy to zone 4.

Black tupelo, also known as black gum, sour gum, or pepperidge, is known for its glossy dark green summer foliage. This tree is even more known for its outstanding autumn foliage colors of yellow, orange, bright red, scarlet, and purple. Autumn color is enhanced by full sun. When these trees are planted "en masse" onlookers stop in their tracks to view the spectacular sight. When black tupelo matures it can reach heights of 60 - 80'.

*Nyssa*, first described as a swamp-growing type, was named for the Greek water nymph, Nyssa. The species, *sylvatica* means "of the woods." The wood of this tree is strong and makes great tool handles.

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*VEGETABLE - COLLARD GREENS* (*Brassica oleracea* (Acephala group)). Collard greens are generally a cool-season crop that are grown in the spring or planted now for fall and early winter harvest. However, if kept moist and insect pests are under control, summer production can be prolific. Varieties recommended for Ohio include 'Vates', 'Champion', 'Flash' and 'Georgia Southern'.

Collards are usually grown from transplants but can be direct seeded. Because the plant can be large plants, space rows 3” apart. Transplants should be spaced 18’ apart. Seeds should be planted 1/4 - 1/2” deep and thinned as they grow until the plants are spaced 18” apart. If a soil test is not taken, 2 lbs. of 10-10-10 can be incorporated per 100 sq. ft. Either the whole plant can be harvested or the leaves harvested when they reach the desired size.

Cabbage worms can cause considerable damage to collards. Products containing *Baccillus thuringiensis* control cabbage worms if applied when the larvae are small. Aphid populations can also build up under the leaves. Occasionally, black rot and Alternaria leaf spot can be problematic.

Collards are harvested by cutting off individual leaves or by harvesting the entire plant. Once harvested, the leaves should be place in a damp paper towels and in a sealed plastic bag. Before cooking, wash thoroughly as they tend to have soil and grit stuck to the leaves.

Raw collard leaves are fibrous and tough. The leaves are most often chopped into small pieces and pot-boiled with seasoning and/or meat. Collards are an excellent source of beta carotene and also contain vitamin A and calcium.

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*WEED - TREE-OF-HEAVEN* (*Ailanthus altissima*). This is a BIG weed! Ailanthus, also known as tree-of-heaven, is a moderate sized (60 - 80' in height) deciduous tree first introduced into the US from Asia in the late 1700’s for use as an urban landscape tree and in strip mine reclamation in the eastern US.

Ailanthus is not just a weed, but an ideal invasive because it grows rapidly, is a prolific seed producer, a persistent stump and root sprouter, and an aggressive competitor that thrives in full sunlight often outcompeting other trees and shrubs. Sprouts can attain a height of 6 - 12' the first year and can easily grow 3' or more per year. As it is growing upwards, something is also happening at the ground level. The tree produces an allelopathic compound that suppresses the growth of many native woody and herbaceous species. It will grow in relatively infertile, shallow soils of varying pH, and is highly tolerant of poor air quality. Trees can be found in urban areas growing between a building and sidewalk – it is one tough plant.

The leaves are pinnately compound, and can be 12 - 36” long, with 11 - 27 leaflets. The twigs are stout, light chestnut brown, and are smooth to velvety with large tan bumps or lenticels. The bark is pale gray and smooth with vertical streaking and with age, fissures develop. Tree-of-heaven flowers are borne in
large terminal clusters and can be up to 20" long. Male and female flowers are on separate trees. The fruit, which is currently very evident, are actually samaras and range in color from yellow green to reddish brown. All parts of the plant have a strong offensive odor. The male flowers are often described as smelling like rotting peanuts or cat urine.

Control options for ailanthus are described in OSU Extension Forestry FactSheet F-65-09, "Controlling Non-Native Invasive Plants in Ohio Forests: Ailanthus" which can be found on the web at [http://ohioline.osu.edu/for-fact/pdf/0065.pdf].

Ailanthus is an invasive species that is included on the Great Lakes Early Detection Network (GLEDN) APP and is a species that we are encouraging Ohioans to report using the APP. The free APP is available for i-Phones and androids. So download the APP and let the reporting begin.

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2. HORT SHORTS.

A. CARNIVOROUS PLANTS. Being a carnivore is not typically something that one associates with plants, however there are several plant species that have evolved the ability to capture and digest insects to survive in the habitat in which they live. These habitats include bogs, swamps and some aquatic habitats that are nutrient limited, especially nitrogen limited. The carnivorous plants cope with the limitations of the soils and water that they grow in by capturing insects and other arthropods, killing them, digesting them, and then assimilating the nitrogen from the arthropods' bodies into their own bodies. Probably the most easily recognized carnivorous plant is the VENUS FLYTRAP (Dionaea muscipula), but there are around 630 known species of carnivorous plants worldwide. Several carnivorous plants are native to Ohio.

Ohio has or had representatives of all main types of carnivorous plants and the methods by which they capture their prey. Unfortunately, these plants also live in threatened habitats that are quickly disappearing from Ohio's landscape. Today, the most likely carnivorous plants that one may encounter in Ohio are the PITCHER PLANT (Sarracenia purpurea), a SUNDEW (Drosera rotundifolia), and several species of BLADDERWORTS (Utricularia spp.).

There are several methods by which carnivorous plants capture and digest their prey. The pitcher plant has modified leaves that are rolled into a vase that contains a "juice" (rainwater and enzymes added by the plant) in its bottom and slippery sides and stiff downward pointing hairs that prevent escape. The prey eventually fall into the juice, are killed and digested. Sundews have specially modified leaves that sport droplets of viscous fluids on them that act like "flypaper" to trap and hold its victims while they are digested. Bladderworts have modified leaves that "vacuum up" their victims when they bump against trigger hairs.

These plants are truly fascinating organisms that have evolved very specialized adaptations to cope with their environments.

Author: Curtis E. Young; young.2@osu.edu

3. BUGBYTES.

A. MILKWEED TUSSOCK MOTH CATERPILLAR. Denise Johnson reported finding a small population of milkweed tussock moth caterpillar (Euchaetes egle) feeding on their namesake host in central Ohio. The small, yellow-green first instar caterpillars have black head capsules and are covered in wispy white hairs. Later instars sport rows of black and orange hairs punctuated by tufts of long white and black
hairs; these colorful hairs are the feature most often associated with these caterpillars and are responsible for the alternate common name of "milkweed tiger moth."

All instars feed side-by-side in groups and can rapidly consume entire leaves leaving only the veins. In fact, milkweed tussock moth caterpillars are considered serious competitors to monarch butterflies (*Danaus plexippus*) with high populations out-devouring even the most voracious monarch caterpillar.

Like monarch caterpillars and many other milkweed-herbivorous insects, the tussock moth caterpillars attempt to dodge predation by accumulating in their flesh the alkaloid toxins, called cardiac glycosides (cardenolides), which are concentrated in the milkweed's sap. Most members of the milkweed menagerie advertise their toxic character through splashy coloration, usually involving an orange on black motif; an interesting twist to the old axiom that "you are what you eat."

Author: Joe Boggs, boggs.47@osu.edu

B. MASHING THE AIR POTATO. Although the BYGL typically focuses on news and views from Ohio, we occasionally go beyond our Buckeye Borders to report interesting ecological stories. Such is the case with the non-native air potato (*Dioscorea bulbifera*; family Dioscoreaceae) and its imported nemesis, the AIR POTATO LEAF BEETLE (*Lilioceris cheni*; family Chrysomelidae). Joe Boggs learned first-hand about this story while teaching last week at the International Society of Arboriculture (ISA), International Conference and Trade Show in Orlando, FL.

The air potato is a vining plant that is native to parts of Africa and Asia. It was introduced into Florida in 1905 as an ornamental plant. The common name comes from curious looking tubers called bulbils that form above ground at leaf axils and resemble small potatoes. Plants also produce large underground tubers. As a member of the yam family, it sometimes called "air yams;" however, the underground tubers are not edible. Air potato plants can grow 8" per day and the herbaceous twining vines can grow 70' in a single season to overtop trees. Although the above ground portion of the plants dieback to the ground in the winter, plants re-sprout from the roots in the spring. New plants arise from the bulbils and underground tubers and both play a primary role in the spread of air potato; no flowers or seed have ever been observed in the U.S.

Pockets of air potato have been found in Texas, Louisiana, Alabama, and Georgia, but the plant is most widespread in Florida occurring throughout the state. It forms dense blankets which smother native trees and understory plant species. Air potato is listed as a noxious weed by the Florida Department of Agriculture and Consumer Services and has been deemed a Category I invasive plant by the Florida Exotic Pest Plant Council. Category I plants are defined as, "invasive exotics that are altering native plant communities by displacing native species, changing community structure or ecological functions, or hybridizing with natives." Using herbicides to suppress air potato is problematic owing to the plant's peculiar life cycle and resistance to many common herbicides.

Enter the AIR POTATO LEAF BEETLE. Extensive host range research conducted by the USDA, Agricultural Research Service (ARS), Invasive Plant Research Laboratory in Fort Lauderdale demonstrated that the air potato leaf beetle specializes in feeding on air potato. It will not complete its development on any other plant found in Florida and is only known to feed on *Dioscorea bulbifera* in its native range. Both larvae and adults feed on the leaves, growing tips of the vines, and occasionally on the bulbils. Their skeletonizing damage limits the growth of plants and reduces carbohydrate production that supports plant survival and production of underground tubers. Their feeding damage to the bulbils also negatively affects vegetative reproduction and spread.

Adult air potato leaf beetles have bright orangish-red elytra and bulbous black eyes. Their head, thorax, and legs are shiny black. The beetles closely resemble another member of the *Lilioceris* genus: the notorious non-native SCARLET LILY BEETLE (a.k.a. red lily beetle, or lily leaf beetle) (*L. lilii*). Indeed, the elytra of the two beetles are orangish-red and both beetles are about the same size and shape.
However, scarlet lily beetles have a reddish-orange thorax and they will not feed on air potato. Likewise, air potato beetles will not feed on plants in the family Liliaceae.

In 2011, the USDA APHIS granted a permit to release air potato leaf beetles in Florida and the Florida Division of Plant Industry began releasing beetles in the summer of 2012. Last week, Joe visited the 48 acre non-profit community-based Mead Botanical Garden (MBG) in Winter Park (Orange County); a site where 200 beetles were released one year ago in August, 2014. He had learned about air potato, the beetle, and the MBG release site from an arborist who had attended his presentation at the ISA conference titled, "Turning the Tide on Non-Native Tree Pests."

Joe noted that the impact the beetles had on air potato in just one year was astounding; he could not find a single undamaged air potato leaf to photograph for use in his teaching programs! Whether or not the air potato leaf beetle can turn the tide on air potato remains to be seen; the plant is widespread and beetles are still being released. However, Joe noted that the beetle certainly has the potential to at least slow the rising tide of the non-native air potato.

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C. GALL MAKER ON CONEFLOWER. Curtis Young reported observing a gall maker on GREEN-HEADED CONEFLOWER (Rudbeckia laciniata) (a.k.a. greenhead coneflower, cutleaf coneflower, wild goldenglow, and sochan). The galls were growing on coneflowers located in the University of Michigan's Matthaei Botanical Gardens and Nichols Arboretum, Ann Arbor, Michigan. Even though there were several varieties of coneflowers present in the gardens, the galls were only on the green-headed coneflowers.

Green-headed coneflowers are sunflower-like perennials with leafy stalks that grow to 3 - 12‘ tall. The yellow sunflower-like flowers are produced on stems at the top of the stalks. Each flower is 3 - 4" across, with cone-shaped, greenish-yellow centers and back-tilted golden rays. The center cones elongate and become brownish as the seeds ripen. The leaves of the plant are pinnately dissected.

Upon returning to Ohio, Curtis determined that the gall was made by a midge with the genus species name of Asphondylia rudbeckiae conspicua (no official common name has been given to this species) (Order Diptera: Family Sciaroidea). The galls made by this midge vary in size, but can be as large as a billiard ball and involve the flowers of the plant. The weight of the gall causes the top of the plant to bend downwards. The gall is fairly solid with chambers within the interior of the galls. Curtis also visited a local garden in NW Ohio and found the same gall maker there.

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4. DISEASE DIGEST.

A. LATE BLIGHT ON TOMATOES. Erik Draper reported finding a disease that he was hoping to avoid altogether this year, in a field of tomatoes, in Geauga County. Due to the phenomenal infectious abilities of this dreaded disease of tomatoes and potatoes, commonly known as late blight, pathogen Phytophthora infestans, is wreaking havoc with tomatoes.

This fungal-like pathogen will affect all above ground parts of the plant including fruits, stems, petioles and leaves. Typical symptoms of late blight on tomato leaves are irregularly shaped, water-soaked lesions. Often these lesions show up first on the younger, more succulent leaves in the upper portion of the plant’s canopy. Once late blight lesions appear, under conditions of heavy dews or high humidity, then white, cottony-like growth (sporangia with spores) is often seen on the periphery of the lesion, most easily noted on the underside of affected leaves. As environmental conditions favor disease development, the lesions continue to expand resulting in the leaves rapidly turning brown, shriveling up and dying. Affected fruits typically remain firm but infected spots appear which eventually become
slightly raised, leather-like and dark brown in color. While these spots seem to start small, they will eventually enlarge to encompass most, if not the entire tomato.

So what does this mean for Northeast Ohio's gardeners and vegetable producers? Here are the recommendations for Ohio's gardeners from Dr. Sally Miller, Plant Pathologist, Vegetable Extension Specialist, The Ohio State University: "Healthy-looking plants should be protected with a fungicide containing chlorothalani (as the active ingredient) or copper; several brands are available in garden centers and other retail outlets. Chlorothalani 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, chlorothalani, 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 easily overwhelm any protection that most fungicides, which are available to homeowners, may offer.

Commercial vegetable growers have much better fungicide options available for their use. Dr. Sally Miller's recommendations in 2014 were: "Growers need to maintain an effective fungicide program on tomatoes and potatoes. This should continue as long as rainy conditions, high humidity and/or heavy dews are expected. If late blight has not been observed and weather conditions are generally dry and warm, use a protectant fungicide on a 7 - 10 day schedule, depending on how fast the plants are growing. Good protectants are chlorothalani (Bravo, Equus, Echo), mancozeb (Pencozeb, Manzate, Dithane), and to a lesser extent, copper-based products. Under cool wet conditions when late blight is likely, or if late blight has been found on the farm, use one of the following, tank mixed with one of the above protectants: Curzate (3 day PHI), Gavel (5 day PHI), Presidio (2 day PHI), Previcur Flex (5 day PHI), Ranman (0 day PHI) or Tanos (3 day PHI) to the spray tank with a protectant fungicide. Note the Pre-Harvest Interval (PHI) for these fungicides ranges from 0 - 5 days. So far, Ohio late blight strains have been sensitive to Ridomil, so that is another option (but may be risky)." Be sure to use all pesticides according to their label instructions.

"If the disease is mainly found in one or a few foci, it is a good idea to remove and destroy the diseased plants. This is particularly important for organic tomato or potato growers. Home gardeners should consider spraying tomatoes and potatoes with a fungicide containing chlorothalani, and should prune out diseased tissue. Pack up diseased plants in a plastic garbage bag and discard - don't leave them in the field or garden or on a compost pile, where the pathogen can be released into the air and spread to other plants."

All that can be done is to remain vigilant and be aware of any reports of late blight infections occurring nearby or in the surrounding counties. Let's keep our fingers crossed and hopefully our tomatoes will be fresh from the garden for the entire year!

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5. TURF TIPS.

A. SUMMER DECLINE OF ROUGH BLUEGRASS. Rough bluegrass (Poa trivialis) is considered a major grassy weed on lawns, golf courses, and sports fields because of its invasive nature, patch-like growth pattern, and habit of going dormant in the summer. This non-native grass spreads by stolons (above ground stems) and grows in thick patches of light-green blades that arise from a dense, multilayered mat of new and old stolons. The thick mat of stolons prevents the establishment and growth of preferred turf grasses within the patch.

Rough bluegrass is truly a "cool-season" grass; it grows best during the cool moist weather conditions of spring and fall. Plants go dormant when air temperatures are consistently above 80F. This is a survival mechanism allowing plants to survive the hot, dry months of summer. As plants go dormant, the patches
of rough bluegrass change color from purple to reddish-purple to straw-brown which signals complete dormancy.

Both the color change and patch-like distribution on lawns and golf courses can make people believe they have a turf disease issue or a problem with their irrigation system. Of course, if the straw-brown mat of dormant rough bluegrass is pulled back, a close inspection of the crown area will reveal thin, white, healthy stems, and some green tissue that will start to grow again when temperatures cool in the fall. Obviously, this is a mixed blessing since it means the problem will reappear next summer unless the patches of rough bluegrass patch are eliminated and re-seeded this fall.

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B. RUST ON TURFGRASS. Several BYGLers reported that the annual rise of rust on turfgrass is beginning to occur in both the northern and southern portions of Ohio; 'tis the season. While turfgrass rust may occur in the spring, the disease most commonly appears in Ohio in mid-to-late summer with infections continuing into the fall. There are many types of fungi that cause rust. The most common are *Puccinia graminis* (Black Stem Rust), *Puccinia coronate* (Crown Rust), *Uromyces dactylidis* (Leaf Rust), and *Puccinnia striiformis* (Yellow Stripe Rust).

The existence of turfgrass rust in a home lawn is usually heralded by yellowish-orange shoes, mowers, and occasionally pets! The often dramatic color-change is produced by rust spores which are harmless to both humans and pets...unless your pet is a perennial ryegrass plant.

A close examination of infected turfgrass will reveal small, yellow flecks on turfgrass blades; 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. In severe incidences, infected grass can thin and individual shoots may die. Environmental conditions conducive to turfgrass rust development include warm temperatures in conjunction with prolonged leaf wetness from dew. Wetness of the leaf blade for more than 10 hours with air temperatures between 68 - 86F are optimum growing conditions for rust pathogens.

Perennial ryegrass is most commonly infected; however, turfgrass rust may occasionally occur on Kentucky bluegrass, turf-type tall fescue and fine fescues, zoysiagrass, and bermudagrass. Plants that are stressed are particularly susceptible; thus, management starts with cultural practices that support healthy turfgrass. This includes maintaining a good fertility program aimed at providing adequate nitrogen throughout the growing season. Mowing height should be elevated to support maximum carbohydrate production for maintaining healthy roots. Soil compaction should be avoided; parking cars on a home lawn is just the ticket for turfgrass rust! Turfgrass should be irrigated judiciously to avoid moisture stress; however, watering in the evening will provide prolonged leaf wetness appreciated by the fungal pathogens.

Fungicides are commonly not used to control turfgrass rust if proper plant health practices are being applied. However, if an outbreak occurs on healthy turfgrass, fungicides from two families, the DMIs (DeMethylation Inhibitors) and Strobilurins, are the most effective in suppressing the disease. Multiple applications are usually required. Of course, remember to read and follow label recommendations including application rates and to make sure the fungicide is labeled for the site (e.g. residential or golf course).

A more effective long-term rust management strategy is to avoid the problem altogether by selecting resistant cultivars. There are many new cultivars that have high resistance to rust diseases. These may be found by visiting the National Turfgrass Evaluation Program website at: [www.ntep.com](http://www.ntep.com). Resistant cultivars should be used for turfgrass renovation or introduced into a lawn during late-summer turfgrass rejuvenation seeding using a slice-seeder. It's worth the time and money for lawns with a history of rust infections.
6. INDUSTRY INSIGHTS.

A. MAGNOLIA SCALE CRAWLS. Amy Stone reported that the reddish-brown first instar nymphs (= crawlers) of MAGNOLIA SCALE (*Neolecanium cornuparvum*) are very apparent on the stems of infested host trees in northwest Ohio. This is one of the largest "soft scales" in Ohio with mature females measuring as much as 1/2" in diameter. The helmet-shaped females are brownish-purple and can be found attached to the twigs, branches, and main stems of their namesake host as well as tuliptree. The scale uses its sucking mouthparts to extract sap from phloem vessels. Heavy infestations can kill branches, or even entire trees, or produce enough physiological stress to make trees susceptible to succumbing to other problems.

Magnolia scale is also notorious for exuding copious quantities of "honeydew." The sticky honeydew may drip onto the leaves and stems of the host plant as well as plants beneath an infested tree, or onto sidewalks, cars, slow-moving gardeners, etc. Honeydew is often colonized by black sooty molds and while the molds do not harm plants, the sticky goo combined with the molds can produce an unsightly mess. Of course, the occurrence of honeydew and sooty molds do not necessarily mean soft scales are afoot. Many other sucking insects (aphids, planthoppers, etc.) also exude honeydew.

Magnolia scale eggs remain inside the female's body until the eggs hatch which gives the appearance that the females are "giving birth" to live young. Egg hatch may occur continuously from early August into early October. This presents a serious challenge to the traditional approach to scale management which focuses on targeting the unprotected crawlers with topical insecticide applications. The extended egg hatch means multiple applications are required to kill all of the crawlers produced this season. Neonicotinoid systemic insecticides are an effective alternative with control being achieved in a single application. A soil drench application of imidacloprid (e.g. Merit), dinotefuran (e.g. Safari), or clothianidin (e.g. Arena) from September into November will suppress this scale.

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7. WEATHERWATCH. The following weather information summarizes data collected at various Ohio Agricultural Research Development Center (OARDC) Weather Stations spanning the dates from August 1 - 19, 2015, with the exception of the soil temperatures which are readings from Wednesday, August 19, 2015 at 11:05 p.m.

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<td>1.14&quot;</td>
<td>2.4&quot;</td>
<td>78.65/78.48</td>
</tr>
<tr>
<td>Piketon</td>
<td>South</td>
<td>83.2</td>
<td>61.8</td>
<td>3.11&quot;</td>
<td>1.3&quot;</td>
<td>75.02/76.13</td>
</tr>
</tbody>
</table>

For a link to the OARDC Weather Stations, visit: [http://www.oardc.ohio-state.edu/centernet/weather.htm](http://www.oardc.ohio-state.edu/centernet/weather.htm)

Author: Amy Stone; stone.91@osu.edu

8. COMING ATTRACTIONS.

Join us for an opportunity to see an amazing collection of rare and unusual trees on this tour of a private property, "Barboretum". Afterward, enjoy lunch and the presentations of our 3 renowned speakers. Everyone is welcome and Master Gardeners receive 5 CEUs. This event will take place in Miami County, in Tipp City. Contact Deb Castle at debcastle@live.com or 937-409-1582 to register. Cost is $60 per person.

B. THE OSU GREEN INDUSTRY SHORT COURSE, THE OHIO TURFGRASS FOUNDATION CONFERENCE AND SHOW, AND TREES ON TAP PROGRAMS. Mark your calendars now, as these shows will be here sooner than you think. The event will be moving back to the Columbus Convention Center in 2015 and will be held on December 8 - 10, 2015, with the addition of a special tree program on Monday, December 7, 2015. Details on over 100 educational programs and a wide array of certification credits will be coming throughout the BYGL season. We are happy to acknowledge the robust support of the Ohio Turfgrass Foundation for their financial and other aid of the educational efforts of the OSU Extension Nursery Landscape and Turf (ENLT) Team, a group of Extension Educators and OSU Specialists that brings to you a range of programs including field diagnostic walkabouts (such as BYGLive! in southwest Ohio) and diagnostic workshops as well as help with horticulture problem troubleshooting, numerous publications, and of course, the BYGL.

A key speaker for both the Trees on Tap program and the tree care track of the Green Industry Short Course will be Dr. Ed Gilman of the University of Florida Environmental Horticulture program. Ed is Professor of Urban Trees and Landscape Plants and his research and educational efforts focus on tree care practices such as the effect of tree pruning on tree biology, production practices and landscape establishment, root pruning, and irrigation and fertilization practices. He is reason enough alone to attend the conference.

9. BYGLOSOPHY. "The best and most beautiful things in the world cannot be seen or even touched - they must be felt with the heart." - Helen Keller

APPENDIX
ADDITIONAL WEBSITE RESOURCES:

Ask a Master Gardener Volunteer
http://mastergardener.osu.edu/ask

Buckeye Turf
http://buckeyeturf.osu.edu

Emerald Ash Borer Information
http://ashalert.osu.edu

National Plant Diagnostic Network and First Detector Program
https://www.npdn.org/first_detector

Growing Degree Days and Phenology for Ohio
http://www.oardc.ohio-state.edu/gdd/

Hungry Pests Website
http://www.HungryPests.com

Ohio Pesticide Safety Education Program
http://pested.osu.edu/
Following are the participants in the August 18th conference call: Joe Boggs (Hamilton); Julie Crook (Hamilton); Erik Draper (Geauga); Denise Johnson (Master Gardener Volunteer program); Jacqueline Kowalski (Cuyahoga); Cindy Meyer (Butler); Amy Stone (Lucas); Nancy Taylor (C. Wayne Ellet Plant and Pest Diagnostic Clinic); and Curtis E. Young (Van Wert).

BYGL is available via email, contact Cheryl Fischnich [fischnich.1@osu.edu] to subscribe. Additional fact sheet information on any of these articles may be found through the OSU FactSheet database [http://plantfacts.osu.edu/web].

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BYGL is available online at: [http://bygl.osu.edu], a website sponsored by the Ohio State University Department of Horticulture and Crop Sciences (HCS) as part of the "Horticulture in Virtual Perspective." The online version of BYGL has images associated with the articles and links to additional information.

Where trade names are used, no discrimination is intended and no endorsement by Ohio State University Extension is implied. Although every attempt is made to produce information that is complete, timely, and accurate, the pesticide user bears responsibility of consulting the pesticide label and adhering to those directions.

CFAES provides research and related educational programs to clientele on a nondiscriminatory basis. For more information: [http://go.osu.edu/cfaesdiversity].

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