BUCKEYE YARD AND GARDEN LINE 2015-17
07/28/15

From: Curtis E. Young (Lead editor and contributing author) and Amy Stone (Co-editor and contributing author).

Pam Bennett, Joe Boggs, Jim Chatfield, Julie Crook, Erik Draper, Denise Johnson, Jaqueline Kowalski, Ashley Kulhanek, Cindy Meyer, Amy Stone, Nancy Taylor, Marne Titchenell and Curtis E. Young (Contributing authors).

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 17th 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.

In This Issue:
1. PLANTS OF THE WEEK: Annual (Salvia 'Black and Blue'); Perennial (Naked Ladies, Ressurection Lilies); Woody (Staghorn Sumac); Vegetable (Cucumbers); and Weed (Common Chicory).

2. HORT SHORTS: Tree Huggers Unite! More Good Words on the Value of Trees and Local Foods Week and a $10 Local Food Challenge - Sign Up Today!

3. BUGBYTES: Grass-Carrying Wasp Nests Found along Windows; Bagworms Populations are Highly Variable; Mossy Rose Galls; Magnolia Serpentine Leafmining Caterpillar; and Captivating Orbweaver.

4. DISEASE DIGEST: Downy Mildew in Coleus Confirmed and Phytophthora on the Rampage.

5. TURF TIPS: Crisp and Toasty Turf Conditions and Japanese Beetle and Other Grub Producing Beetles.

6. INDUSTRY INSIGHTS: Follow-Up on Chlorosis Case Study and Marketing Opportunity for Producers in Ohio.

7. WEATHERWATCH.

8. COMING ATTRACTIONS: Save The Date - Northwest Ohio Green Industry Summer Session - August 5, 2015; Wildlife Nuisance Class; Tree Tour & Talks - August 25, 2015; and The OSU Green Industry Short Course, The Ohio Turfgrass Foundation Conference and Show, and Trees on Tap Programs.

9. BYGLOSOPHY.

APPENDIX - Additional Website Resources.

1. PLANTS OF THE WEEK.

*ANNUAL - SALVIA 'BLACK AND BLUE' (Salvia gauranitica 'Black and Blue'). Salvia is the largest genus of plants in the mint family and includes shrubs, perennials and annuals. The individual flowers are on a panicle or raceme. The flower normally has a tubular or bell-shaped calyx (group of sepals that form a whorl and enclose the petals) and a split or two-part upper and bottom flower petal or corolla.

The plant grows to around 3' tall and about 2' wide at maturity with the typical square stems of plants in the mint family; however, the stems are black. The foliage is a nice green color but it's the flowers that make this plant showy. They are the typical salvia flower shape but with a black calyx with deep blue flower petals; combine this with the black stems and the effect is stunning. The flowers appear on spikes held above the plant.

While there are not a lot of flowers on a plant, the overall appearance is still quite beautiful. This hummingbird magnet is visited by a pair of hummingbirds every evening in my garden and I love watching how they forage. The flowers are also attractive to butterflies and bees, and are good for arrangements. On a side note, Denise Johnson taught me a fascinating fact while visiting the OSU Field Trial site on campus just recently. We watched as the carpenter bees drilled a hole in the side of the black calyx to get to the pollen. Bees can't reach the pollen in these plants with long flower tubes so they figured out another way to get in! How cool is that?!

Salvia prefers dry soils and full sun. They are great in containers, borders, and massed as the focal point of a garden.

Author: Pamela J. Bennett, bennett.27@osu.edu

*PERENNIAL - NAKED LADIES, RESSURECTION LILIES (Lycoris squamigera). Few plant names bring on bawdy comments or laughter like one of the common names for this plant! The name naked ladies can lead to quite a bit of laughter. For instance, in Clark County, a resident called the horticulture helpline and asked what to do with the naked ladies in his front yard. Well...after a brief pause and realizing what the caller was talking about, the Master Gardener Volunteer answering the helpline suggested that he enjoy them, thus digging a deeper hole! Phew - you have to be careful with those types of calls! Another good reason to use the Latin name???
Naked ladies are also called resurrection lily, magic lily, spider lily, surprise lily or hurricane lily and are beginning to bloom in central Ohio now. These lilies thrive in sunny to partially sunny areas. They grow best in loose, moist soil with good organic matter. These lilies are members of the Amaryllis Family, which includes other well-known bulbs such as common amaryllis, daylilies, daffodils, and snowdrops. They are easy to grow and naturalize readily.

*L. squamigera* have strap-like leaves that emerge in spring and die down by mid-summer. No leaves are present during summer months or when the blooms arise (hence the name naked ladies). The surprise or magic lily name comes from the fact that in mid-summer, flowers appear almost magically since there is no foliage to indicate where the bulb is planted. Leafless stems emerge and quickly grow 12 - 24" tall or more before being topped by 8-inch clusters of tubular pale-pink flowers. These lilies make excellent cut flowers as well as beautiful garden plants.

Author: Pamela J. Bennett, bennett.27@osu.edu

*WOODY - STAGHORN SUMAC* (*Rhus typhina*). Staghorn sumac is an eastern North America native plant noted this time of year for the deep green, pinnately compound leaves and upright red, pyramid-shaped, cluster of fruits. These fruiting clusters may be up to 8" in length and each cluster contains numerous hairy, berry-like drupes. The fuzzy drupes are attractive to wildlife and the fruits ripen to bright red and gradually turn a dark brown-red and may persist through the winter. This plant suckers readily to create a loose, open-spreading, deciduous shrub/small tree (15 - 30') with a somewhat flattened crown and intriguing craggy branch structure, belongs to the Anacardiaceae family. It is most often found establishing along hillsides, clearings, woodland edges, and disturbed areas like roadsides and railroad right-of-ways. This tenacity for growing in typically inhospitable environments, has led to its encroachment into cities. This is one tough plant as it tolerates any soil type, doesn't mind growing in the cracks of pavement or sidewalks and seems to thrive in the concentrated, contaminant laden city air. In the fall, its leaf colors of reds and oranges are striking and as the leaves fall, the reason for its common name is revealed. The newly expanded, current season's stems are stout, rounded, brown, and densely-covered in fuzzy hairs, looking for all intents and purposes just like deer antlers in velvet!

Author: Erik Draper, draper.15@osu.edu

*VEGETABLE - CUCUMBERS* (*Cucumis sativus*). Cucumbers are a warm weather crop that is easy to grow in full sun and in fertile, moist soil. They prefer a soil pH between 6 and 6.5 or slightly acidic. Cucumbers do not like cold weather so direct sow seeds when soil temperatures are above 70F and evening air temperatures do not dip below 60F. Plant seeds 1 - 1.5" deep, spaced 2" apart and provide 5 - 6' between rows so the vines can spread. If seeds are started indoors, take care not to disturb the taproot when transplanting. To thin cucumbers, cut or pinch rather than pulling seedlings which can damage the roots of other plants.

Once in the ground, cucumbers are heavy feeders and the addition of nitrogen fertilizers mid-season is recommended.

Cucumbers come in a variety of shapes, sizes and colors and can be eaten raw or pickled. Select the varieties that best suit your garden size and desired use. If you have limited space try a compact variety such as Salad Bush or Bush-Pickle. The Marketmore 76 is disease resistance, dark green and uniform in size while the Burpless is a hybrid that is ready to harvest in 62 days and is great for slicing and grows well on a trellis.

Cucumbers are subject to several pests and diseases including striped or spotted cucumber beetles, aphids, squash vine borer, bacterial wilt and powdery mildew. Good management practices of rotating crops, spacing plants for good airflow, watching and removing insects as well as good sanitation practices of removing infested plants and destroying old plant material will help increase and extend your harvest.
*WEED - COMMON CHICORY (Cichorium intybus). The delicate blue flower seen along roadsides, pastures, and meadows announcing summers arrival is Common Chicory. It is a perennial weed which forms a basal rosette with dandelion-like leaves early in the season. Its multi-branched erect stems are hollow with very few leaves and when cut display a milky sap. The blue clustered flowers bloom from June through September in most of the United States. Flower height can vary from 5" to 3’ depending on the growing conditions; the color of the flowers can vary from blue to white, pink or purple, with blue as the predominant color. Chicory is in the Asteraceae family and the flower resembles the daisy and aster with composite flowers. It tolerates most soil conditions but does not survive in cultivated areas. It does not grow in a well-maintained lawn.

Chicory was brought from Europe as a vegetable crop. Its early seedlings were eaten as greens and the mature root was used as a coffee substitute. It is related to endive, radicchio and other greens. Propagation is by seed.

Author: Denise M. Johnson, johnson.2924@osu.edu

2. HORT SHORTS.

A. TREE HUGGERS UNITE! MORE GOOD WORDS ON THE VALUE OF TREES. All BYGL readers know the value of trees and have learned through BYGL and some of the Extension Nursery Landscape and Turf Team members’ presentations about the values of trees. We were alerted to a great article recently in The New Yorker sharing even more research information on the value of trees and wanted to share this with our readers. As the author Alex Hutchinson said, "If someone offers you ten thousand dollars or ten trees, take the trees.” Go to this link for the article: [http://www.newyorker.com/tech/elements/what-is-a-tree-worth?mbid=social_facebook].

Author: Pamela J. Bennett, bennett.27@osu.edu

B. LOCAL FOODS WEEK AND A $10 LOCAL FOOD CHALLENGE - SIGN UP TODAY! There is not one definition for "local" food. When making food decisions, many people consider where their food was grown or raised and make an effort to develop personal connections with growers and producers to enjoy flavorful, safe, local food. Ohio Local Foods week is not only about enjoying the tastes of local foods, but is also about becoming more aware and better informed about the nutritional, economic and social benefits of local foods in Ohio.

August is a great time to celebrate Ohio Local Foods Week because of the availability of direct-to-consumer marketing of all products including a wide variety of fresh produce. The Ohio State University Extension Local Food Signature Program invites everyone to celebrate Ohio Local Foods Week from August 9 – 15, 2015. We encourage individuals, families, businesses and communities to grow, purchase, highlight and promote local food all the time, but especially during this week.

Just as there is no one definition for "local", there is no one way to celebrate Ohio Local Foods Week. You are invited to participate in the $10 Ohio Local Foods Challenge by committing to spend at least ten dollars (or more) on your favorite local foods during Ohio Local Foods Week.

You can sign-up online at [http://localfoods.osu.edu/ohio-local-foods-week/take-challenge].

If you are a producer and are interested in promoting Local Foods Week to your consumers, check out more information on Local Foods Week in this week’s Industry Insight section.

Author: Amy Stone, stone.91@osu.edu
3. BUGBYTES.

A. GRASS-CARRYING WASP NESTS FOUND ALONG WINDOWS. Ashley Kulhanek reported finding multiple nests of a grass-carrying wasp (*Isodontia* spp.). These solitary wasps use long blades of grass and other thread-like material to create nests in small cavities such as window tracks, narrow openings, or hollowed out twigs. The adults are often noticeable flying through the air with strands of grass trailing behind them in flight. But their existence is most often acknowledged when homeowners swap out storm windows for screens or in this case, when they slide open a window screen! While the adults can sting if handled, they are not aggressive as is the case with most solitary bees and wasps.

The female will search out small crickets or immature grasshoppers as food for her young. She paralyzes these with a sting, and then places these immobile Orthopterans in the nest chamber with an egg. When the egg hatches the larva feed on the live, yet paralyzed insects until they are ready to pupate. They can have up to 2 generations per year. Some species partition each egg into its own chamber using grass to separate each cell. Other species will create a communal chamber cushioned by the grass material for the larva to develop.

These wasps are not considered a pest or even a nuisance. If the nesting material is bothersome, simply removing the nest and its content may help to deter their construction. But if you can tolerate the nesting, grass-carrying wasps are fascinating wasps to have in the landscape. No control or treatment is necessary.

Author: Ashley Kulhanek, kulhanek.5@osu.edu

B. BAGWORMS POPULATIONS ARE HIGHLY VARIABLE. BYGLers noted that as with last season, COMMON BAGWORM (*Thyridopteryx ephemeraeformis*) populations appear to be highly variable across Ohio. Some are seeing almost no bagworms whereas others are already seeing noticeable defoliation. However, damaging infestations are often highly localized both within plants with only few branches affected and within geographical areas with noticeable damage occurring just a few miles from where no bagworms are being found. Also like last season, bagworm development appears to be variable. Joe Boggs noted that he is seeing 1st instar caterpillars feeding beside what appear to be 3rd instars.

The 1st instar bagworm caterpillars carry their bags held upward making them look like tiny dunce caps. Also, major portions of the 1st instar bags are constructed of tiny pieces of reddish-brown, sawdust-like frass (excrement) stuck to the outside of the silk. The 2nd instar bagworm caterpillars, as well as all succeeding instars, carry their bags held downward like pine cones. From the second instar stage onward, the bags are constructed with plant debris woven into the bag's silk. The plant material provides structural stability and helps to camouflage the caterpillar bag-abodes.

Late instar bagworms can be highly destructive, particularly to evergreens. The best way to avoid damage is to monitor for egg hatch and target early instar caterpillars for control. It is a common misconception that bagworms only eat evergreens; however, the caterpillars can feed on over 130 different species of plants including a wide range of deciduous trees and shrubs. Indeed, deciduous trees and shrubs are sometimes overlooked during bagworm inspections allowing the plants to become heavily damaged and to serve as reservoirs of bagworms that can spread to neighboring trees and shrubs.

Early instar bagworms can be effectively controlled using the naturally occurring biological insecticide *Bacillus thuringiensis* var. *kurstaki* (*Btk*) (e.g. Dipel, Thuricide, etc.). Unfortunately, *Btk* is most effective on small bagworms and becomes much less effective when bags surpass 3/4” in length. Fortunately, *Btk* does not kill bio-allies such as predators and parasitoids that help provide natural control of bagworm populations. *Btk* is a stomach poison which means it must be consumed to kill the caterpillars and it has
short-live residual activity. Thus, two applications may be required. Once bags exceed around 3/4" in length, standard insecticides will need to be used to suppress heavy infestations.

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

C. MOSSY ROSE GALLS. Joe Boggs reported observing the bizarre looking mossy rose galls sprouting from hybrid tea roses as well as from multiflora rose (Rosa multiflora). The hairy-looking galls are produced under the direction of a tiny wasp (Diplolepis rosae) belonging to the gall-wasp family Cynipidae. The wasp occurs both in Europe and North America. They will produce their characteristic galls on several species in the Rosa genus; however, they are most commonly found in Ohio on hybrid tea roses.

The galls consist of a solid, fleshy, internal structure covered by a dense mass of spiky filaments; they look like a ball of moss stuck on the rose stems, thus the common name. Other common names include "rose bedeguar (bedegar) galls," and "Robin's pincushion galls;" however, these common names are generally confined to the European literature. Cutting the internal fleshy part of the galls open will reveal individual chambers, each housing a single wasp larva. The size of the gall depends on the number of larval chambers with single-chambered galls usually measuring less than 1" in diameter and multi-chambered galls measuring over 2" in diameter, filaments included.

The wasps have one generation per year. Females initiate gall formation when they use their ovipositors (= stingers) to insert eggs into leaf buds in the spring. The resulting wasp larvae exude chemicals that further direct gall formation. The galls change color from light green to crimson red as the wasp larvae mature. Late instar larvae spend the winter in dark reddish-brown galls and new adults emerge in the spring. Spent galls become grayish-brown and often remain attached throughout the season. As with most plant galls, mossy rose galls cause no harm to the overall health of their rose hosts. However, the galls may appear unsightly when they occur on display roses. The gall-makers can be effectively managed by pruning and destroying developing galls which will reduce or even eliminate localized gall-wasp populations.

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

D. MAGNOLIA SERPENTINE LEAFMINING CATERPILLAR. The highly visible handiwork of the magnolia serpentine leafmining caterpillar (Phyllocnistis magnoliella) is becoming evident on magnolias in nurseries and landscapes in southern Ohio. The moth belongs to the leafmining family Gracillariidae. The tiny caterpillars of this aptly named moth feed close to the upper leaf epidermis, producing long, thin, serpentine mines that appear as silvery tracks snaking across the leaf surface.

Hosts for this leafminer include bigleaf, cucumber, southern, star, sweet bay, and umbrella magnolias. Large numbers of mines on a single leaf can cause the leaf to turn brown and drop from the tree. Little is known of the life-cycle of this moth making the effective timing of insecticide applications to control the caterpillars problematic. Indeed, efforts to control this leafminer in nurseries in Ohio and in the southern U.S. are marked by reports of high insecticide failure rates. Fortunately, heavy populations involving multiple leaves appear to be a rare occurrence. Thus, populations may be managed by removing and destroying infested leaves when mines first appear.

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

E. CAPTIVATING ORBWEAVER. This is the time of the season when early risers may become entangled in large, sticky spider webs strung across outdoor doorway openings. The most common culprit is the BARN SPIDER (Araneus cавaticus). This is a type of "orbweaver" (Family Araneidae), so-named because of the round ("orb") shape of their webs. The webs of these spiders consist of one continuous strand of spiraling sticky silk laid down on top of radiating spokes of non-sticky silk that provide structural support for the web.
Barn spiders are medium-sized round spiders measuring 1/2 - 3/4” from the tips of their legs. Of course, they will appear much larger dangling a few inches from your eyes! The top of the abdomen as well as their legs and cephalothorax are covered with mottled light brown to black markings. The spiders have a very distinct marking on the underside of their abdomen that is pitch-black with two yellowish-white marks along the edge of the black background. Barn spiders are nocturnal. They construct their orb webs each evening, and then they consume their webs in the morning. This is why barn spiders and a few other orbweavers are often encountered in doorways in the early morning hours, hanging where there was no spider the day before.

As with all of the 600+ species of spiders found Ohio, barn spiders and other orbweavers do not attack people; they attack insects! If you should have a close encounter of the spider kind, it's best not to struggle. Uttering a few expletives will not provoke a spider bite, but whipping the spider with your hand may cause the spider to bite. Fortunately, their bite is about as dangerous as a bee sting. Spiders prey upon insects and are an important bio-ally in keeping insect pest populations in check. Barn spiders and other orb weavers are often drawn to outdoor doorways that are located beside a porch light that is kept on at night. The light attracts insects which is spider food. Leaving the light off at night or switching the bulb to one that will not attract insects will keep the spiders away.

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

4. DISEASE DIGEST

A. DOWNY MILDEW IN COLEUS CONFIRMED. Joe Boggs reported that he was working with Steve Foltz at the Cincinnati Zoo and Botanical Garden on some plant issues and one of the coleus samples sent to the C. Wayne Ellett Plant and Pest Diagnostic Clinic (CWEPPDC) was confirmed to have downy mildew. Symptoms include large brown blotches on the leaves, stunted seedlings or plants, and foliage drop. The brown or blotchy areas are angular or square and are bordered by the large leaf veins, similar to the symptoms seen on cucurbits. Symptoms may be mistaken for insect damage once necrotic tissue drops from the leaves to produce holes. See the article in BYGL 2015-13, July 2, 2015, "Double Whammy Downy" [ http://bygl.osu.edu/content/double-whammy-downy-0 ] for details on downy mildew in cucumbers.

Downy mildew on coleus is not new in the US. It’s been identified since 2005 and it’s probably not new to Ohio but many readers may not be aware of this disease and its symptoms. The disease is caused by the fungus *Peronospora lamii*, which infects several members of the mint family including salvia and basil.

Unfortunately for homeowners, there is little to do except for sanitation and cleanup of the affected plants; bag and remove badly infected plants. Plants may make it through the rest of the season, but this depends on weather conditions and the spread of the pathogen. High humidity favors the spread of this disease. Avoid overhead irrigation (and rain - ha ha!). When you see the symptoms, it’s too late for fungicide sprays to prevent the problem. Fungicides have to be applied prior to infection. As with all diseases, the environment plays a key role. As Michigan State University (MSU) researchers noted [ http://msue.anr.msu.edu/news/is_coleus_downy_mildew_here_to_stay ], "The fungus that causes downy mildew on coleus is tricky and elusive. Sometimes the disease is obvious and other times it may lie quietly in the plant tissue until the conditions are just right."

MSU research shows that some cultivars are much more susceptible than others. While recently on campus, I noticed that the cultivar 'Premium Sun Flip Side' had more noticeable symptoms than some of the others, with some having none at all. In addition, the amount of blighting and leaf drop varies among cultivars.

B. PHYTOPHTHORA ON THE RAMPAGE. One BYGLer reported that several annual plant samples from Southwest Ohio were sent last week to the CWEPPDC. The plants sent to the clinic had symptoms
such as poor growth, wilting, stunting, or off-colored foliage. Many things can cause these symptoms, from a lack of water to several diseases but sending the samples would be the only way to know for sure what was happening with these plants. It is no surprise that with the extreme wet weather we have experienced this season that all the plants tested positive for Phytophthora. The plants sent included vinca (*Catharanthus*), dahlia (*Dahlia pinnata*), lobelia (*Lobelia erinus*), and zinnia (*Zinnia*).

The following information on Phytophthora was included with Nancy Taylor’s report on the results of her diagnosis. It illustrates that one will get far more than a simple diagnosis when a sample is submitted to the CWEPPDC.

For beds in which Phytophthora has been identified, avoid highly susceptible plants for 3 - 4 years. Generally speaking, plants showing the most resistance to Phytophthora blight include ageratum, celosia, geranium, and marigold. Keep in mind, however, that under conditions highly favorable for disease (high inoculum levels already present plus environmental conditions which are highly favorable) disease may occur with just about any annual flower.

Recommendations from the clinic:

*Evaluate drainage in beds where Phytophthora has been identified. The key environmental condition which favors disease development is high levels of soil moisture; Phytophthora root and stem rot and Phytophthora dieback is favored when the soil is frequently saturated. If the bed drains poorly consider modification to improve drainage which may involve tiling the bed or planting in raised beds.

*Monitor irrigation practices. Phytophthora can develop even in sites which drain well if irrigation is excessive. Where possible, use drip irrigation. If using overhead irrigation, water early in the day. Unfortunately, rainfall is a factor which cannot be managed. Phytophthora blight problems tend to develop when frequent rainfall events cause episodes of soil saturation. Phytophthora blight develops on some crops annually in mid to late summer when sudden heavy downpours occur.

*Delay planting highly susceptible crops when soil temperatures are cool. Soil temperatures should be 70F or above before planting such crops.

*Avoid over fertilization, particularly with fertilizers that contain high concentrations of ammonium. Use slow release fertilizers.

*Immediately remove and discard diseased plants.

*Fungicide use in landscape beds as a standard practice is usually avoided for several reasons. First, success in suppressing Phytophthora with fungicides is often erratic in landscape beds. Second, some expect fungicides alone to suppress disease, which will not be the case with Phytophthora. Cultural and environmental modifications are key to minimizing the impact of Phytophthora. Third, once the disease is actively developing, fungicides may not adequately prevent further spread. However, once cultural practices such as crop rotation, drainage improvements, proper irrigation management, and fertility management are in place, a fungicide might be used as an adjunct to the other practices. Aliette fungicide, Subdue MAXX, and Heritage currently have labels for use in landscape beds, but there may be restrictions regarding where they can be used (example: Subdue should not be used around edges of ponds). Applications would have to be made season long, with treatment intervals depending on the product selected and weather conditions. Read and follow all label directions.

Author: Julie S. Crook; crook.46@osu.edu

5. TURF TIPS.
A. CRISP AND TOASTY TURF CONDITIONS. Erik Draper reported that turf conditions in northeast Ohio have gone from lush and succulent green to toasty brown and crisp within the past week. For the first time since the beginning of June, we have not received any form of substantial precipitation for over 2 weeks; consequently, the turf which we could not previously mow fast enough, now with high temperatures and no rain, has now gone brown and summer dormant!

The ensuing discussion centered around the overall impact of the weather on plant health this year. From trees losing all of their leaves because they sat in ponded areas or flooded fields for days in northwest Ohio, to the water stressed turf now found in northeast Ohio, it all comes down to water. In general, the assembled BYGLers felt that the reason for the rapid decline of turf, was that too much rain had fallen so that a root system really wasn’t needed by the turf due to the excessive water. A viable, healthy root system was not needed nor was one functional because it was always wet. Therefore, when the rains shut off and the temperatures began to climb into the upper 80’s and lower 90’s, the turf could not extract water from the soil because of the compromised root systems. Subsequently, the turfgrass couldn't cool itself properly and so it went into the “protect our tender grass crowns” and immediately went into its summer dormancy survival technique.

The same concern expressed for compromised turfgrass root systems was also a serious indicator or foreboding regarding the woody plants which experienced those same super-saturated environments. Will those plants begin to show symptoms of physiological leaf scorch and slowly dry up or will the plants just collapse outright? All we can do is wait and ironically, if it is possible, irrigate to try and preserve as much of the functional roots and the leaves to which those roots are connected, to make it through those stresses without totally collapsing!

Author: Erik Draper, draper.15@osu.edu

B. JAPANESE BEETLE AND OTHER GRUB PRODUCING BEETLES. Several BYGLers gave reports of renewed Japanese beetle activity around Ohio. It has been several years since this beetle has shown up in any great numbers. As a result, many have somewhat forgotten about what all this insect may do (eat) and how to best manage it in the landscape. Many homeowners experiencing this renewed Japanese beetle activity are asking about methods to control the beetle and its potential grub populations that may follow in turfgrass. Some of the methods asked about are not overly effective. The questions of potential grub problems may be well founded. Dave Shetlar reported that in addition to the Japanese beetles, NORTHERN and SOUTHERN MASKED CHAFER BEETLES (Cyclocephala borealis and C. immaculata) have also been running at exceptionally high numbers in his light traps that he runs around Columbus. To add to the scenario, current soil moisture conditions are highly conducive for survival and development of eggs being laid by female beetles.

Dave Shetlar wrote a review article on the Japanese beetle to refamiliarize Ohioans on this pest. The following are excerpts from the article:

The Japanese beetle was a major plant skeletonizer (feeder) during the 1960s to about 2000 in Ohio. It is not known what caused the major crashes in the populations of this pest, but most entomologists suspect that there was a disease that was limiting the larval development. Even during the "crash," there were some localized populations in Dayton and the Akron-Cleveland areas that remained problematic. Last year (2014), there were regular rains in July, which is the major egg-laying period for Japanese beetles. This year, damaging populations were noted all across Ohio which suggests that their populations are on the rise again. With the rain this summer, it is possible that we will see another increase in adult beetles next summer, but only time will tell!

Japanese beetle adults feed on hundreds of plants, but grape, rose flowers and lindens are some of the most favored plants. They will even feed on white pine needles and I received an image of a fir tree that had been attacked this summer! The top surface of upper needles had been eaten which caused them to turn noticeably brown. Adult beetle feeding is "progressive." That is, skeletonized plants release chemicals that attract more beetles. Most figure that the beetles are releasing a pheromone, but the
females only release a sex pheromone as they emerge from the soil for the first time. After that time, it is plant odors that attract the beetles. Curtis Young reported that linden trees in NW Ohio are showing signs of fairly heavy feeding.

Dave learned that many were buying Japanese beetle traps in attempts to manage the beetle. Entomologists do NOT recommend using these traps. Dan Potter and his students in Kentucky have a whole series of publications that prove that the traps can be the cause of more damage than if no traps were used! Basically, the traps are only moderately effective. For every beetle that gets into the bag, another beetle was attracted to the area and landed on a nearby plant! These traps can attract beetles from a quarter mile radius!!

Another product on the market sold to control the Japanese beetle grubs is milky disease (often referred to as milky spore disease, though the spores are not milky!). This bacterial disease causes the blood of infected grubs to turn a milky white, hence the name. Milky disease is also a great seller at garden centers, on the Internet, and it is often proposed for use in municipal parks and school grounds!

First, ALL Japanese beetle populations in Ohio already have the disease! Second, milky disease is a weak pathogen which will kill a maximum of 15 - 25% of a Japanese beetle grub population! Adding more to the soil doesn't change this percentage. More importantly, the strain sold commercially is only active against Japanese beetle grubs so all the masked chafers out there are safe from this strain! This is a major problem with the high populations of masked chafers being found around the state.

So, what can be done to protect trees and flowers in the landscape if the beetles are attacking in mass? Sprays! We used to use dusts, but it's getting increasingly difficult to find insecticide dusts! EPA doesn't like the idea of folks being exposed to insecticide dusts. The traditional materials have been pyrethroid insecticides or Sevin (usually in a dust form). Both still work well, but be careful around flowering plants as pyrethroids and Sevin are just as toxic as the neonicotinoids (neonics) (e.g. imidacloprid, dinotefuran) to pollinating bees!

We used to recommend using neonics, but these should only be used on trees or shrubs that are no longer flowering (yes, you shouldn't treat that Rose of Sharon with a neonic!). Dave no longer recommends using neonics on perennial flowers as the residues are likely to end up in the pollen and/or nectar! So, if you have that linden or Norway maple that is being skeletonized, a basal drench with imidacloprid (or dinotefuran if you want faster uptake) would be appropriate.

So, what can you use on the other plants? Use anything with azadirachtin (the botanical insecticide from the Neem tree). This is not the neem oil extract! Neem oil extract is the oil phase extracted from neem seed and it is no different than using a horticultural oil! You need the antifeeding and toxic effects of azadirachtin. The most common product for homeowners would be Neem-Away which is available on the Internet. For commercial applicators, use Azatrol. Homeowners can legally purchase Azatrol, but they may have to buy the larger containers. Dave noticed that there is also a new product, BeetleGone which contains one of the Bt toxins, but he hasn't seen that many studies published on its efficacy...yet.

Authors: Dave Shetlar and Curtis E. Young, shetlar.1@osu.edu and young.2@osu.edu

6. INDUSTRY INSIGHTS.

A. FOLLOW-UP ON CHLOROSIS CASE STUDY. In BYGL 2015-15 (07/16/15, Case Study: Chlorotic Blue Spruce), we presented a detailed case study highlighting the importance of using a soil test coupled with a plant tissue analysis to accurately identify a plant nutrient problem. The report generated some interesting reader feedback including the need to stress that readers should not use the images posted with the online version of the article as sole support for making a fertilizer application to correct manganese (Mn) deficiency. Of course, we have all riffled through online images in search of pictures that will aid in making a plant problem diagnosis. However, we should be careful with basing a fertilizer
application on an "online picture diagnosis" particularly if the application involves a plant nutrient that can become toxic to plants if excessive amounts occur the soil. This cautionary note certainly applies to Mn.

Mn is considered an essential heavy metal for plants, along with copper (Cu), Zinc (Zn), Iron (Fe), and Molybdenum (Mo). They play important roles in biochemical and physiological functions in plants, as well as animals. However, if a little bit is good, a lot is not better. Mn toxicity in plants is often difficult to diagnose and sensitivity varies between plant species and even between varieties of the same species. Worse, as with trying to rid soil of other heavy metals, reducing Mn levels in the soil without exacerbating Mn toxicity to plants is extremely difficult. Indeed, too much Mn in the soil can be more disastrous to plants compared to too little!

There is also the problem with Mn and other soil nutrients becoming chemically tied-up in alkaline soils so that it's not available to be taken-up by plants. There is enough of the element in the soil to support good plant health, but high soil pH causes Mn to combine with other elements to place it out of the reach of plants. Adding more Mn to such soils is not likely to alleviate the problem and if a soil acidifier is added, the additional Mn released as the pH drops increases the risk of producing a toxic Mn condition to plants. As noted at the end of the Case Study report: don't guess...test!

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

B. MARKETING OPPORTUNITY FOR PRODUCERS IN OHIO. As the appetite for local foods continues to grow, Ohio State University Extension is celebrating the movement August 9 - 15 with the first-ever state-wide Ohio Local Foods Week.

The week's organizers are encouraging participation among organizations small and large that provide local foods, including growers, farmers markets, community markets, farm stands, u-pick operations, community-supported agriculture groups, grocery stores and restaurants.

Heather Neikirk and Patrice Powers-Barker with the OSU Extension Signature Program, Local Foods, want producers to think about it as a way to share your local foods story with customers. Ohio Local Foods Week is a great opportunity to talk about how producers got their started in the local foods system.

Participation can take many forms including:
* Arranging a local foods taste-test event.
* Labeling local products and supplying information to customers about where they came from.
* Providing specials on local foods.
* Featuring local products in advertisements and on websites.
* Inviting local food producers to do a food demonstration or attend a "meet the farmer" gathering.
* Organizing a farm or community garden tour.
* Posting fliers to promote Ohio Local Foods Week.
* Encouraging customers to participate in the week's challenge to spend at least $10 on local foods during that week.

The Signature Program's website, localfoods.osu.edu, makes it easy to participate by providing a toolkit with templates to create event fliers, a sample proclamation that can be used locally, a handout with background information on local foods, a flier to encourage customers to participate in the week's local food challenge and other resources.

Anyone organizing an event can also have it listed on the website by emailing Neikirk (neikirk.2@osu.edu) or Powers-Barker (powers-barker.1@osu.edu) with the event name, date, time, location, a one-sentence description, and contact name and information. The website also has a page with links to online local foods directories.
Consumers are encouraged to use those online directories to find more opportunities to buy local foods. If you are a producer that sells local foods, and your business or farmer isn't listed in those directories, you should take advantage. Some are free, and some require membership in an organization or a nominal fee. But it's a great way to get the word out that you provide access to local food.

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

7. WEATHERWATCH. The following weather information summarizes data collected at various Ohio Agricultural Research Development Center (OARDC) Weather Stations spanning the dates from July 1 - July 29, 2015, with the exception of the soil temperatures which are readings from Wednesday, July 29, 2015 at 11:05 a.m.

Rain events have begun to be a little less frequent, especially in the northern portion of the state. Three of the 5 weather stations are reporting above normal precipitation levels. While some of the totals are impressive for July, there are other "unofficial" mentions across the Buckeye State that is double or even triple of the amounts shown below.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Ashtabula</td>
<td>NE</td>
<td>78.3</td>
<td>59.2</td>
<td>1.58&quot;</td>
<td>2.6&quot;</td>
<td>89.21/77.81</td>
</tr>
<tr>
<td>Wooster</td>
<td>NE</td>
<td>81.1</td>
<td>59.5</td>
<td>3.33&quot;</td>
<td>3.9&quot;</td>
<td>76.98/75.87</td>
</tr>
<tr>
<td>Hoytville</td>
<td>NW</td>
<td>80.3</td>
<td>60.0</td>
<td>5.72&quot;</td>
<td>3.6&quot;</td>
<td>76.52/74.62</td>
</tr>
<tr>
<td>Columbus</td>
<td>Central</td>
<td>84.4</td>
<td>63.1</td>
<td>5.13&quot;</td>
<td>4.4&quot;</td>
<td>79.50/78.97</td>
</tr>
<tr>
<td>Piketon</td>
<td>South</td>
<td>82.8</td>
<td>63.5</td>
<td>5.26&quot;</td>
<td>3.8&quot;</td>
<td>81.99/79.64</td>
</tr>
</tbody>
</table>

*The 2" soil temperature in Wooster was recorded as 89.21F. This figure seems to appear to be high and in error.

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

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

8. COMING ATTRACTIONS.

A. SAVE THE DATE - NORTHWEST OHIO GREEN INDUSTRY SUMMER SESSION - AUGUST 5, 2015. The event will once again be held at Owens Community College. Send an email to Amy Stone (stone.91@osu.edu) for registration materials.

B. WILDLIFE NUISANCE CLASS. Are you having issues with wildlife such as deer munching on your landscape, raccoons rooting in your planters, chipmunks nibbling on your tomatoes, or bats in your home? Register for THE GOOD, THE BAD, AND THE HUNGRY: DEALING WITH WILDLIFE CONFLICT IN THE LANDSCAPE on August 7, 2015 in Lucas County. This is a day-long class, $35 per person. Participants will learn strategies for preventing and managing conflict with deer, rabbits, squirrels (chipmunks, tree squirrels, groundhogs), raccoons, skunks, bats, Canada geese, moles, voles, and coyotes. Lunch is provided as well as a folder full of additional information. Visit [http://www.woodlandstewards.osu.edu] to learn more about the class or register online at [https://www.regonline.com/wildlifeconflictsLucas].

C. TREE TOUR & TALKS - AUGUST 25, 2015. Have you ever seen a Kinki Winki? Or a Zydico Twist? 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.
D. 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. "Bees are black, with gilt surcingles - Bucaneers of buzz." - Emily Dickinson

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://peedu.osu.edu/

Ohio State University Department of Horticulture and Crop Science Plantfacts
http://plantfacts.osu.edu/web/

Ohio State University Extension Bee Lab
beelab.osu.edu
Ohio State University Extension Master Gardener Volunteer Program
http://mastergardener.osu.edu

Ohio Woodlands Stewards Program
http://woodlandstewards.osu.edu

The C. Wayne Ellett Plant and Pest Diagnostic Clinic (CWEPPDC)
http://ppdc.osu.edu/

USDA APHIS Beetle Buster Website (Asian Longhorned Beetle)
http://www.beetlebusters.info/

USDA APHIS Beetle Detective Website (Asian Longhorned Beetle and Emerald Ash Borer)
http://beetledetectives.com/

Following are the participants in the July 28th conference call: Pam Bennett (Clark); Joe Boggs (Hamilton); Julie Crook (Hamilton); Erik Draper (Geauga); Denise Johnson (Master Gardener Volunteer program); Ashley Kulhanek (Summit); Dave Shetlar (Entomology); Amy Stone (Lucas); 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].

Any materials in this newsletter may be reproduced for educational purposes providing the source is credited.

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].