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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 21st 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."

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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 (Verbena); Perennial (Sedum); Woody (Amur Corktree); Vegetable (Squash); and Weed (Common Ragweed).

2. **HORT SHORTS:** Tree Leaves Dropping Early Means...What?; A Walk on the Wildside: Raucous Raccoons; and A Walk on the Wildside: American Goldfinches.

3. **BUGBYTES:** Brown Marmorated Stink Bug Damage on Tomato; Spined Micrathena Spiders; Mega Wasps Drilling Trees; New Factsheet - Mystery Bugs and Bites; and Windshield Wipe (Erineum Patches).

4. **DISEASE DIGEST:** Buckeyes Blasted By Blight.

5. **TURF TIPS:** Big Wasps Cruising over Turfgrass and Gray Leaf Spot in Ohio.

6. **INDUSTRY INSIGHTS:** TCD Diagnostic Challenge and Farm Science Review Is Almost Here!

7. **WEATHERWATCH.**

8. **COMING ATTRACTIONS:** Farm Science Review 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 - BRAZILIAN VERBENA* (*Verbena bonariensis*). This trouble-free plant is incredibly easy to grow, requiring very little care and no deadheading. The purple flowers are great for pollinators and are quite attractive to butterflies and hummingbirds. The flowers appear early summer on top of the 3 - 4' tall stems and keep blooming all season. Brazilian verbena is sometimes referred to as verbena-on-a-stick as the verbena flowers look like they have been placed atop a stick. The long stems arise from a clump of leaves at the base of the plant; the stems move in the wind, providing another feature in the garden. A recently introduced cultivar, 'Meteor Shower' is shorter, growing to about 20" tall.

*V. bonariensis* is very easy to grow and maintain. It can be easily started from seed and the species sometimes tends to reseed prolifically. Just rogue out those you don't want. They take hot dry sunny locations with dry soils. They will take some shade; however, the plants tend to get a little leggy. Brazilian verbena is excellent for cottage gardens or naturalized areas. It can also be used to fill in spaces in containers or perennial beds. Underplanting Brazilian verbena with a bright pink petunia or yellow marigold provides additional impact.

Note: In some parts of the country, particularly in the southeast, this plant is considered an invasive species and has been found reseeding in waterways and ditches.

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*PERENNIAL - SEDUM, STONECROP* (*Sedum* spp.). With numerous species and cultivars available, a gardener is sure to find one or many sedums that provide fall flower color. There are also cultivars that bloom in the spring and summer as well. There are between 400 - 600 species with most of them perennial in the northern regions. They are considered succulents as they have thick fleshy leaves. That said, they don't like to be in wet situations. They are extremely tough in a hot dry area of the garden and the ground-cover types tend to be used prolifically in rock gardens or cascading over a wall. The upright varieties are excellent when massed in the perennial bed or in a large planting.

The flowers are borne in terminal clusters at the top of the stem. Flowers can be white, pink, reddish or maroons. Foliage colors vary as well from green to light green, silver green and other shade of green, to reddish and pinks, yellows, as well as variegated.

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**WOODY - AMUR CORKTREE (Phellodendron amurense).** I don't usually see this tree around my area of the state (southwest) so I was pleasantly surprised while doing a recent tree survey of a park in Springfield to find 2 of them growing side by side. This tree is appropriately named due to the appearance of the corky bark, however, the bark pattern does not develop until the tree ages. Amur corktrees grow to around 30 - 45' tall and with a spread that is equal or greater. It's a broad-spreading tree and according to Michael Dirr in the "Manual of Woody Landscape Plants," it is "a tree of great beauty in its finest form."

On first glance at the foliage you might think it’s a walnut; the leaves are pinnately compound. However, they are opposite whereas walnuts are alternate. There are 5 - 11 ovate to lance-ovate leaflets. The leaves are lustrous green and change to a yellow or bronzy yellow in the fall. The trees are dioecious (2 houses or separate male and female trees) and flowers are a yellowish-green in the spring. The fruits are 1/2" diameter drupes which mature to black in the fall. The foliage and fruits are not aromatic when crushed! Well they are but the aroma isn't necessarily nice.

Note: This tree has been found to be invasive in the eastern corridor of the US.

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**VEGETABLE - SQUASH (Cucurbita spp.).** The term squash generally refers to four species of the genus Cucurbita native to Mexico and Central America. These species include C. maxima (e.g. hubbard squash, buttercup squash, and specific cultivars of pumpkins, such as Big Max), C. mixta (cushaw squash), C. moschata (butternut squash), and C. pepo (most pumpkins, acorn squash, summer squash and zucchini). In the US, people tend to lump squash into two groups corresponding to when they are typically eaten; namely, either summer or winter squash.

Summer squash are best when harvested as small, immature fruit to keep both the seeds and flesh tender, and they cook easily and rapidly. Of course, there is an occasional desire to make stuffed zucchini boats, where the mature zucchini actually becomes an edible serving dish! Winter squash is allowed to fully mature and develops big seeds, firm flesh and a hard rind or skin; consequently, the preparation of winter squashes takes much longer and is much more involved in order to eat them. Gourds are in the Cucurbitaceae family, as are squashes, but they are most often used as decorations and for ornamental uses.

In culinary terms, both summer and winter squashes are generally considered as vegetables, even though botanically speaking, squashes are really fruits. Squashes are considered a fruit because the edible parts are really ripened ovaries, which arise and develop from a pollinated flower. In addition to the squash fruit itself, other parts of the plant are edible.

Squash seeds can be roasted and eaten directly or ground into a paste or meal to create a type of "seed" butter, and even be used as flour. Certain cultivars, particularly the hulless pumpkin seed types, can be processed to create a type of vegetable oil. If harvested very young, even the leaves, shoots, and tendrils can be eaten as greens; however, the blossoms are the most often eaten part of the squash other than the squash fruit itself. Both the male and female blossoms can be harvested before they open, or just about mid-flower, before the bloom tissue begins to dry up or break down. Regardless, squashes are both eye-pleasing and edible, so quash the urge to say "yuck" and "squash" those taste buds with a cucurbit treat soon!

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**WEED - COMMON RAGWEED (Ambrosia artemisiifolia).** Hay fever suffers will concur ragweed is blooming in Ohio! Pollen counts in Columbus have been high for the entire week. Among the main culprits are the North American native annual broadleaved weeds, common ragweed and GIANT RAGWEED (Ambrosia trifida). Common ragweed can be found in almost any soil condition but prefers heavier moist soils. It can be found in crop fields, vacant lots, along the highways or in gardens and
open areas. However, it does not survive persistent mowing and therefore is not found in managed lawns. Seed germination starts in May once soil temperatures are between 50 - 80F. Common ragweed grows to 2 - 4’ with erect, branched stems generally covered with rough hairs. The leaves are mostly alternate, but early lower leaves may be opposite. The fernlike leaves are deeply indented, growing 6 - 12” long and 4 - 6” wide. Flowers are present in late summer into autumn producing massive amounts of dry pollen which the wind disperses. Male and female flowers are separate but on the same plant (monoecious). One plant can produce 30,000 - 60,000 seeds and buried seeds can survive over 40 years. Common ragweed can cause nutritional deficiency in soils because it accumulates large quantities of trace elements. It can also grow in soils with zinc levels that are toxic to other plants.

Its huge and less common cousin, giant ragweed, booms at the same time but grows 2 - 3 times the height of common ragweed and has been known to tower over 17’ high. Its size makes it easy to identify. Giant ragweed leaves are large, opposite and mostly palmately 3-lobed.

Broadleaf chemicals controls are successful in managing these weeds and should be selected based on the plant crop you are trying to protect. Always follow label directions when using any herbicides or pesticides.

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2. HORT SHORTS.

A. TREE LEAVES DROPPING EARLY MEANS...WHAT? The calls have begun to come into the Extension offices from concerned citizens, regarding their trees which are dropping leaves. Most of the concerns for the trees center on these leaf losses and whether or not the trees are dying. While there is no direct correlation between early leaf loss or coloration and tree death, it may suggest that there are stress factors which are impacting that tree. There is no question that drought stresses causes leaf drop in certain species of trees, like river birch (Betula nigra) and tulip poplar (Liriodendron tulipifera). These trees typically/normally combat drought conditions by methodically dropping their leaves. The reason for this drought avoidance adaptation in their evolutionary history is that by dropping leaves, they will lose far less precious water because there are less leaves overall requiring water to keep them cool and functional.

This year in Northern Ohio, we experienced significant amounts of rainfall to the point of excess. There was so much water in fact, that most of the plants really didn't need much of a root system because there was just so much rainfall. Then in mid- to late July, the rains stopped and it became hot and dry with steady breezes. Because many plants had compromised root systems, the resultant stresses caused multiple degrees of symptoms on various types of plants. Many of the falling leaves coming from the trees’ canopies were jettisoned to create a better balance between water uptake and transpirational water losses via photosynthesis. In other plants, because of the compromised root system, not enough water could be moved to the leaves fast enough to support their transpirational demands; consequently, the edges or margins of the leaves overheat, the leaf tissues denature and die, resulting in what is called physiological leaf scorch. The tree is performing a great balancing act and even though it appears to be losing a lot of leaves, as much as 10 - 20% of leaves can drop without causing serious injury to the health of the tree.

Another noticeable factor serving as a tree's stress indicator is the early fall leaf color. Early fall color does NOT necessarily mean that the tree is going to die, rather it is merely a signal that the plant has suffered some significant stress. In actuality, there are many factors that can cause the leaves to color early, such as damage caused by insect feeding and/or diseases directly affecting the foliage. If the leaf is damaged by insect feed or impacted by a disease to the point that it requires plant resources to keep it functioning, then the tree will often drop/eliminate that leaf.
How can one tell or judge if the tree will be okay in spite of leaf losses? The best way is to examine the quality and quantity of the new twig growth or extension. Investigate the length of these annual growth increments over the past five years. Are they generally the same length or have they gotten steadily shorter over time? Also scrutinize the overall size of the leaves and the density of the remaining leaf canopy. The leaf size should be representative of that tree species and the overall tree canopy should block out most if not all of the sunlight before it reaches the ground beneath the tree. If these tree health indicators appear to be typical or normal, then most likely the tree will survive just fine to leaf out to experience another year, another spring and another challenging growing season!

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B. A WALK ON THE WILDSIDE: RAUCOUS RACCOONS. BYGL writer Marne Titchenell received a report from a homeowner about RACCOONS (Procyon lotor) raising a ruckus in the trees outside her home. The homeowner requested information on how to encourage the raccoons to move on and leave her tree (and eardrums) alone. When faced with conflicts from raccoons, the first question you should ask is, 'why are they here'? Many times the answer to that question is simple - food. Raccoons will stick around an area if there is a food supply. In this case, the next door neighbor was feeding the raccoons. The best solution to the homeowner's problem is to have a conversation with the neighbor, encouraging them to stop feeding the raccoons. Food, and also shelter (such as space under building foundations), are attractants to wildlife like raccoons, but also skunks, opossums, groundhogs, and coyotes. Identifying, then modifying or eliminating the attractant, is a good strategy when dealing with wildlife conflict. Remove any available food outside your home, such as garbage or pet food. Keep trash cans tightly lidded or inside at night. Survey the foundation of your home and under porches and decks for any openings, and then seal them up. If you suspect a critter has already taken up residence under your home, porch, or deck, fill the opening with newspaper and wait a few days. If the newspaper has been removed, you know the hole is being used. Another option is to place a thin layer of flour outside of the hole and look for tracks. For more information on nuisance wildlife management, visit the Internet Center for Wildlife Damage Management, [www.icwdm.org].

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C. A WALK ON THE WILDSIDE: AMERICAN GOLDFINCHES. Most people are familiar with the AMERICAN GOLDFINCH (Spinus tristis) as they commonly visit backyard bird feeders actively seeking out nyjer and sunflower seeds. These brightly colored yellow birds can be seen flitting about in a variety of habitats both wooded and open, searching for seeds to fuel their strictly vegetarian lifestyles. And if they seem a bit more active than usual, as BYGL writer Marne Titchenell noticed, it's likely a mom or dad responsible for finding seed not only to fuel themselves, but also youngsters that have recently fledged the nest. Young goldfinches will remain with their parents for 3 - 4 weeks after leaving the nest. During this time, they are receiving food from mom and dad, but also learning from their parents how to forage for themselves.

With school starting, it feels like the summer is over to us, but goldfinches are still in their summer nesting season. Goldfinches nest later than many close-related species, waiting until late June and into July to begin building their nests. One of the reasons is because by mid-summer, thistle, milkweed, and other plants have produced fibrous seed, which is preferred by goldfinches for feeding and nesting. As their strong, sturdy bills would imply, goldfinches are seed eaters, only occasionally and most likely inadvertently swallow an insect. Because of their heavy diet of seeds, goldfinches help in the dispersal of seeds. Unfortunately, like most birds, goldfinches do not discriminate between native and non-native, invasive plants. So be sure to remove non-natives such as teasel and Canada thistle from the landscape and replace them with native thistles or milkweeds. Interestingly, the goldfinches' diet helps to protect them from cowbird brood parasitism (see the BYGL 2015-19 (8/13/15) article on cuckoos for more information on brood parasitism). The theory is that the young cowbirds cannot survive on a strictly seed diet.

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3. BUGBYTES.

A. BROWN MARMORATED STINK BUG DAMAGE ON TOMATO. Joe Boggs shared images with fellow BYGLers of a brown marmorated stink bug (BMSB) (*Halyomorpha halys*) on his tomato plant and the resulting feeding damage on a red-ripened fruit. This non-native invader is most often recognized for its notorious habit of showing-up in large numbers in the fall on the sides of homes and other structures to perform a little breaking-and-entering in their quest for sheltered over-wintering sites. However, Joe’s report reminded BYGLers that BMSB adults and nymphs are also known for producing significant feeding damage to fruit and vegetables. Unfortunately, they often appear near harvest time.

BMSB is native to Asia and was first found in North America in the eastern counties of Pennsylvania in 2001. Since then, the bug has spread westward across multiple states; it was first reported in Ohio in 2007 in Franklin County. The population trajectory in Ohio has mirrored observations made in Pennsylvania as well as other mid-Atlantic coast states with initial populations remaining relatively small and highly localized for several years from the time of their discovery. BMSB was most often observed in a few eastern, central, and southern counties in Ohio. However, reports in recent years indicate that BMSB populations are becoming more widespread across the state with some areas experiencing very high numbers the past two years.

BMSB looks very similar to BROWN STINK BUG (*Euschistus servus*); a native bug with a history of causing damage to tomatoes. Both have shield-shaped bodies and mottled brownish markings. However, BMSB has red eyes and black and white banding on the antennae and along the edge of the abdomen. Both species of stink bugs can cause damage to tomatoes and other vegetables, but BMSB has a much wider host range including fruit crops such as apples; agronomic crops such as corn and soybeans; ornamental trees such as maple and walnut; and ornamental shrubs such as viburnum and roses. Also, BMSBs may show-up in huge numbers far surpassing the level of damage ever experienced with the brown stink bug.

Both nymphs and adults use their piercing-sucking mouthparts to puncture the epidermis and extract plant juices. On green tomatoes, the damage may appear as whitish spots with indistinct borders. Although the spots may only measure 1/16 - 1/2” in diameter, they can merge to affect large areas of the fruit. On ripe tomatoes, the damage appears as hazy golden yellow spots. Stink bug damage may be superficial with little impact on the tomato flesh; however, heavy feeding may produce areas with whitish, spongy tissue that become very apparent if tomatoes are canned. While damaged tomatoes are still edible, their unsightly appearance reduces their marketability.

BMSB management on tomatoes is a challenge owing to the often sudden appearance of large numbers of bugs over a short period of time; heavy damage may occur before gardeners realize they have a significant bug problem. Conventional insecticides containing synthetic pyrethroids are relatively effective in controlling BMSB; however, preventative applications are hard to justify due to the hit-or-miss nature of heavy bug infestations. If tomatoes do come under heavy attack, bugs can be quickly knocked down using appropriately labeled products containing the active ingredients bifenthrin, cyfluthrin, or permethrin. Repeated applications may be required around every 7 - 14 days. As with any insecticide application, gardeners must read and follow label directions and pay particular attention to the pre-harvest interval. Low populations may be managed using the "knock-off and stomp" method; just knock stink bugs to the ground and stomp on them! Joe managed his stink bugs this way stating, "I love the smell of stink bug in the morning!" Of course, he left his shoes outside; his wife does not love the smell of stink bug anytime!

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B. SPINED MICRATHENA SPIDERS. There is nothing like the sensation of walking into spider webbing that has been strung across a walking trail through the woods. The feeling of the threads across one's
cheeks, sticking to one’s eyebrows and tickling one’s nose is enough to freak out even the most seasoned naturalist or experienced entomologist. And it is very obvious to anyone nearby that something is amiss as the victim begins to flail his or her arms around and spasmodically wipe their face and head with their hands. Part of the reason for the convulsive response to the spider webbing to the face is the knowledge that the constructor of the webbing could be included with the webbing and be somewhere on one's body!

A very common group of spiders that are responsible for these webs across the trail are the micrathena spiders (Class Arachnida: Family Araneidae (orb weavers): Order Araneae (spiders)). There are several common species that are encountered in woodlots and urban landscapes including the spined micrathena (Micrathena gracilis), the WHITE MICRATHENA (M. mitrata) and the ARROW-SHAPED MICRATHENA (M. sagittata). These spiders are easily recognized by their strangely shaped, hard abdomens that are ornamented with variously sized and positioned spines. They very much look like they would be hard to swallow if a predator were to attempt to eat one. They are not very big spiders so they can be easily overlooked, but when one does discover one, they are definitely a sight to be seen. Curtis Young reported that he has been seeing a number of the spined micrathena spiders in NW Ohio this season.

Even though it is an unpleasant experience of running full-face into one of their orb webs, there is little to worry about as far as the resident of the web getting on one's body. The micrathena spiders are not known to bite humans and therefore are not considered to be medically important. They are considered to be ecologically important because they are predators that capture and kill numerous flying insects helping to control their populations.

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C. MEGA WASPS DRILLING TREES. Curtis Young reported observations of mega-sized wasps drilling their 4 - 5” long ovipositors into trunks of trees, dead trees or dead sections of trees. These mega-sized wasps are commonly referred to as GIANT ICHNEUMONS (Megarhyssa spp.). Owners of the trees upon which the wasps are discovered are concerned that they are the cause of the death of their trees. However, they are not the destructive agents in the death of these trees. The giant wasps are actually members of a very large family of parasitic wasps (parasitoids), the Ichneumonidae (Order Hymenoptera). Most of them parasitize larval stages of other insects such as moth and butterfly caterpillars, and beetle grubs. Megarhyssa wasps specialize on parasitizing the larval stages of wood boring wasps in the family Siricidae. Two common species of giant ichneumon wasps found in Ohio are M. macrurus a very large brown wasp with bright-yellow and black chevrons on its abdomen and M. atrata a smaller but still large steel-blue-black wasp with a yellow head and legs.

Siricid wood wasps also belong to the Order Hymenoptera. One of the common wood wasps in Ohio is the PIGEON HORNTAIL (Tremex columba). The larvae of the pigeon horntail are wood borers tunneling deep within the trunks and branches of the dead tree. However, they too are not the causative agent of the death of the trees. They are only attracted to dying or recently dead host trees, especially American elm trees killed by Dutch elm disease. Thus, neither of the wasps are a threat to the host trees, but they are more of a marvel of nature to be admired.

Part of this amazing marvel of nature is that the giant ichneumon female is able to thread its 4 - 5” long ovipositor into the wood of the dead tree, where they presumably are able to deposit an egg in the tunnel of the siricid wood wasp larva. The ichneumon larva then attaches itself to the wood wasp larva and eventually eats it. They then pupate in the tunnel of the host wasp, and emerge the following year. The next year, newly emerged, male Megarhyssa wasps can detect an emerging virgin female before she exits the tree and will crowd around the hole as she chews her way out, and even attempt to mate with her as she is emerging.

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D. NEW FACTSHEET - MYSTERY BUGS AND BITES. David Shetlar and Jennifer Andon with Ohio State University’s Department of Entomology, recently revised OSU FactSheet HYG-2123. The new version of FactSheet ENT-66-15 is titled Mystery Bugs and Bites ([http://ohioline.osu.edu/ent-fact/pdf/ENT_66_15.pdf](http://ohioline.osu.edu/ent-fact/pdf/ENT_66_15.pdf)).

Does this article have you already itching? Could it simply be the power of suggestion? Do you know of someone who feels they are constantly being bothered by insects, but can never find that so-called culprit? It can be a frustrating situation, but it is imperative that the insect be identified. The Mystery Bugs and Bites FactSheet describes some alternative causes and can help individuals figure out the cause of their discomfort.

The FactSheet describes symptoms people can sometimes experience; it explains common biting arthropods, allergic, physical and physiological causes; and control measures. It is a useful resource that you may want to share with others and use to discuss hard to diagnose situations. As mentioned in the FactSheet, samples from the county can be submitted to the C. Wayne Ellet Plant and Pest Diagnostic Clinic.

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E. WINDSHIELD WIPE. BYGLers also ran into a few other arthropods this week including:

* Joe Boggs reported that the felt-like ERINEUM PATCHES produced by the eriophyid mite, *Acalitus fagerinea*, on the upper leaf surfaces of American beech have now turned their late-season dark brown color. The patches progress through several color stages throughout the season from light green in the spring to brilliant yellow then rusty red to reddish-brown and finally becoming dark brown. Although the patches are located on the upper leaf surface, they cause a dimpling of the lower leaf surface beneath the patch. The eriophyid mite is viewed more as an oddity rather than a significant pest since their erineum patches seldom cover enough leaf surfaces to cause harm to the overall health of an affected tree. However, the patches may be very evident and are often mistaken for a leaf disease.

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4. DISEASE DIGEST.

A. BUCKEYES BLASTED BY BLIGHT. Once again it appears that GUIGNARDIA LEAF BLOTCH has returned to plague the namesake of the buckeye state. This fungus, *Guignardia aesculi*, infects most species of Aesculus that are grown here in Ohio including: common horsechestnut (*A. hippocastanum*), Japanese (*A. turbinata*), Ohio (*A. glabra*) and red (*Aesculus x carnea*) horsechestnut, along with painted (*A. sylvatica*); however, it rarely affects bottlebrush (*A. parviflora*) and the red buckeye (*A. pavia*). This disease causes distinct leaf blotches that are irregular in shape, size and appearance; therefore, the pathological term of “blotch” is applied to describe these lesions.

Remember that earlier this year, Joe Boggs described in BYGL July 23, 2015, a different twist of the Guignardia fungus on buckeyes. Joe stated, "We reported observing Guignardia leaf blotch on Ohio buckeye (*Aesculus glabra*) trees in southwest Ohio with zonate leaf lesions that were various shades of red; from crimson to brick red. While some browning was evident, red was the dominant color scheme. The trees looked like they were showing unusual early fall colors with red replacing amber, which is the normal fall color associated with Ohio buckeye trees. It is not known why the Guignardia leaf blotch symptoms were so different from the "norm," but Joe noted this is not the first year that these trees have expressed these unusual symptoms. Participants in past S.W. Ohio BYGLive! Diagnostic Walk-Abouts held in the park where these trees are found have observed and discussed these interesting leaf blotch symptoms."
Right now the real impact of this fungal disease is evident in the landscape as the foliage is almost totally covered with lesions causing a browned out, necrotic appearance to the entire tree. Initially the fungal blotches are a pale green color, which rapidly turn orange-brown with an evident yellow (chlorotic) border around the initial leaf lesion. If the leaves are infected early enough in the season, as they have been this year, the leaf infections increase in size and number and begin to coalesce. Unfortunately, the infected leaves soon turn entirely brown and begin to drop from the tree. In view of the fact that this disease usually occurs after most of the annual growth has occurred for the season, Guignardia leaf blotch causes little harm to the health of vigorous trees; however, it will definitely impact landscape aesthetics and will cause you to wonder if you can sit in the shade of a buckeye tree and cool down!

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5. TURF TIPS.

A. BIG WASPS CRUISING OVER TURFGRASS. Dave Shetlar reported that he's getting calls from concerned homeowners of BLUEWINGED WASPS (Scolia dubia) performing their low-level flight plans over home lawns. This is actually a good thing since the larvae of these blue bombers are the nemesis of white grubs. The wasps may be seen cruising a few inches above the turfgrass, often in loops or a figure-8 pattern, searching for signs of white grubs. They are excellent flyers and their flight behavior sometimes causes them to be mistaken for the much larger, and different colored CICADA KILLER WASP (Sphecius speciosus). The wasp will parasitize all white grubs, but is particularly fond of GREEN JUNE BEETLE (Continus nitida) grubs.

Once grubs are located, the wasp will dig into the soil, or simply enter the green June beetle grub's burrow. It first stings and paralyzes the grub, then it lays an egg in the grub's body. When the egg hatches, the wasp larva first consumes the non-essential parts of the paralyzed grub, keeping the hapless grub alive and "unspoiled." Later, the ravenous wasp larva applies the coup de grace, killing the grub. The immature wasp pupates inside the carcass.

The bluewinged wasp is around 1 1/4" in length. As the common name implies the wings as well as the head, thorax, legs, and first two abdominal segments are dark blue. The third abdominal segment is orangish-red with two side-by-side yellow spots on a black background. The remaining abdominal segments are orangish-red, and all segments are somewhat hairy. These solitary wasps may be found cruising turfgrass from June through early-October. Since the wasp is strongly connected to green June beetles, they are most often found where the beetles occur. The wasps are not aggressive and they are one of the "good bugs," so they should be conserved, not destroyed.

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

B. GRAY LEAF SPOT IN OHIO. Joe Rimelspach reported that Ohio had its first confirmed case of gray leaf spot on August 19, 2015 in the Columbus area. This can be a very destructive disease to perennial ryegrass. If this disease is suspected and you would like confirmation, send samples to the OSU Plant and Pest Diagnostic Clinic: [http://ppdc.osu.edu/].

Gray leaf spot (GLS) is caused by the fungus Pyricularia oryzae (teleomorph Magnaporthe grisea) and can be a severe problem in the Midwest on perennial ryegrass. It is also a serious disease on rice called blast. GLS can occur on ryegrass athletic fields, golf courses, home lawns and parks. Weather patterns that favor GLS are warm to hot temperatures, excessive moisture, and high relative humidity especially at night, and periodic rainfall.

GLS or Blast gets its name from the devastating scorched appearance it causes on the foliage of turfgrass. Quite literally, severe outbreaks look as if the turfgrass leaves have been scorched with a flamethrower! Initially symptoms of GLS may appear as drought-like symptoms. Check the soil to see if there is adequate soil moisture. The pathogen kills the plant by causing severe leaf blight. Part of the
blanding process involves the production of phytotoxic chemicals, which disrupt the normal biochemical and physiological balance within the plant. Initial symptoms often appear as small pinprick lesions, which often go unnoticed or mistaken as a less aggressive leaf spot disease. Under optimal environmental and host conditions, these small spots quickly turn into water soaked spots, which then coalesce into water-soaked leaf tips which then progress rapidly to twisted necrotic leaf tips.

Kentucky bluegrass, fine fescues, bentgrasses, and many perennial weedy grasses and annual grass will not be affected. In later stages of disease development, the sward may take on a gray color as a result of the mass production of spores/conidia by the pathogen - hence its name, gray leaf spot. In most cases the ryegrass will quickly die and appears as drought stress; however, the soil is wet. In years when there are GLS outbreaks there is a strong correlation to weather patterns of warm days and nights combined with high humidity and rain fall from the remains of hurricanes that trace through the Ohio valley.

Cultural management practices:
* Reduce or limit nitrogen fertilizer in the summer. Avoid quick-release sources of nitrogen.
* Irrigate early morning and avoid evening irrigation. Check the soil moisture level because the disease mimics drought stress. Over-watering greatly increases the severity of this disease.
* On athletic fields be wary of using rain tarps during GLS-susceptible times (mid-August through September in the Midwest).
* Replace damaged areas with a resistant type of turfgrass such as Kentucky bluegrass.
* If ryegrass is planted use new perennial ryegrass cultivars that are developed to be less susceptibility to the disease. Check the National Turfgrass Evaluation Program (NTEP) web site for results of field testing; [http://www.ntep.org](http://www.ntep.org).

Here are some improved perennial ryegrass cultivars: All Star 3, Dasher 3, Defender, Derby Extreme, Fiesta 4, SR 4600, Harrier, Derby Extreme, Manhattan 5 GLR, Charismatic II GLSR, Palmer IV, Palmer GLS, Paragon GLR, Panther GLS, Protégé, Regal 5, Repel GLS, Revenge GLX, Fusion, and Buena Vista.

When selecting seed make sure ALL CULTIVARS of ryegrass HAVE IMPROVED GLS RESISTANCE. If a cultivar is stated to have GLS resistance this does not mean it is immune and over time susceptibility to GLS can change.

Chemical management options:
Chemical management must be timed to prevent damage. Stopping this disease once established in a sward can be extremely difficult and may result in loss of turfgrass. Some of the most effective products are: thiophanate-methyl, azoxystrobin, trifloxystrobin, pyraclostrobin, and DMI’s + chlorothalonil. Resistance to fungicides has been reported. No more than two applications of the chemical family’s benzimidazole (thiophanate-methyl) or strobilurins (azoxystrobin/pyraclostrobin), for the season, is recommended to avoid the development of fungicide resistance. Read labels carefully for more information. Fungicide programs in most years should be started in mid-July to early August depending on historic patterns of disease development in the area.

Remember disease prevention applications, PRE-DISEASE, are much better and successful than POST disease infection applications.

Authors: Joseph W. Rimelspach, Todd E. Hicks and Francesca Peduto Hand

6. INDUSTRY INSIGHTS.

A. TCD DIAGNOSTIC CHALLENGE. Joe Boggs reported observing a possible look-a-like challenge with diagnosing THOUSAND CANKERS DISEASE (TCD) of black walnut based on darkened cankers. He met last week with Emily Franzen (Survey Technician, Ohio Department of Agriculture (ODA) in the
Butler County quarantine zone to examine a suspicious walnut stem. Emily is an entomologist by training and she is in charge of deploying and maintaining traps for walnut twig beetle (*Pityophthorus juglandis*) in southwest Ohio. She had acquired the walnut sample from a landscaper who had noted small exit holes on the stems of a dying black walnut tree.

TCD is a potentially devastating disease of black walnut. The fungus responsible for the disease (*Geosmithia morbida*) is entirely reliant on being carried from tree to tree by the phloem-feeding walnut twig beetle which is a type of bark beetle. The resulting fungal infections produce small circular to oblong shaped dark brown cankers in the phloem tissue. TCD is so-named because of the collective impact of multiple cankers: "death by a thousand cuts" becomes death by a thousand cankers. Thus, dark colored cankers are an important feature for detecting TCD.

Joe and Emily used a draw-knife to carefully shave away stem tissue starting with the bark. Their methodical excavation revealed that the small exit holes had not been produced by the walnut twig beetle; they were the work of another type of bark beetle. However, as they further exposed the phloem tissue, they found a small dark brown canker-like area that strongly resembled a TCD canker both in size and color. Thankfully, a few more slices with the draw-knife revealed the culprit responsible for producing the TCD look-a-like symptom: a flatheaded borer, possibly a larva of the FLATHEADED APPLETREE BORER (*Chrysobothris femorata*, family Buprestidae). The larvae of this beetle tunnel through and feed on phloem tissue.

As with other native buprestid beetles, the flatheaded Appletree borer attacks stressed trees and it has a very wide host range. Indeed, Dave Shetlar has long contended the beetle should be called the "flatheaded will attack any stress deciduous tree borer!" Of course, native bark beetles also attack stressed, dying, or dead trees depending upon the species. It is well documented that the tunneling and feeding activity of phloem-feeding larvae typically produces discoloration of phloem tissue. This discoloration could easily be mistaken for TCD cankers if the affected tree is a black walnut, particularly if the borer has completed its development and left the scene. However, this certainly does not mean patches of discolored phloem should be ignored; suspicious trees and samples should still be reported to the ODA. In fact, Emily told Joe that from the ODA perspective, receiving and processing a walnut sample that turns out not to be TCD is not a problem; however, it would be a real problem if they do not get samples that are TCD!

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

B. FARM SCIENCE REVIEW IS ALMOST HERE! This year’s Farm Science Review (FSR) is Sept. 22 - 24, 2015. The Farm Science Review is Ohio’s premiere outdoor agricultural education and trade show, drawing upwards of 140,000 visitors from across the US and Canada over three days. FSR takes place at the Ohio State University’s 2,100-acre Molly Caren Agricultural Center in London, Ohio.

If FSR visitors are looking for natural resources and conservation information, they should definitely make a trip out to the Gwynne Conservation Area (GCA). There will be forestry, wildlife, and aquatic professionals available all 3 days to answer questions, as well as wagon tours through the many demonstration areas at the Gwynne and a full range of talks on a variety of topics such as tree planting, food plots for wildlife, stocking fish in ponds, flying squirrels, tree ID, and rain barrels. For a list of schedules talks visit the GCA website: [http://gwynne.osu.edu/](http://gwynne.osu.edu/). Visitors can travel to the Gwynne by catching a shuttle at the west end of Friday Avenue.

Farm Science Review is sponsored by the Ohio State University College of Food, Agricultural, and Environmental Sciences, OSU Extension, and the Ohio Agricultural Research and Development Center. Pre-show tickets are $7 at all OSU Extension county offices. Tickets are also available at local agribusinesses. Tickets are $10 at the gate. Children 5 and younger are admitted free. Hours are 8 a.m. to 5 p.m. Sept. 22 - 24, 2015 and 8 a.m. to 4 p.m. Sept. 24, 2015. For more information, see [http://fsr.osu.edu](http://fsr.osu.edu).
WEATHERWATCH. The following weather information summarizes data collected at various Ohio Agricultural Research Development Center (OARDC) Weather Stations spanning the dates from August 1 - 25, 2015, with the exception of the soil temperatures which are readings from Wednesday, August 25, 2015 at 5:05 p.m.

It is beginning to feel a lot like fall. Unseasonable cooler temperatures have arrived in the buckeye state. While it likely won’t last, most BYGLers mentioned enjoying the temperatures. Amy Stone reported that a Toledo weatherman mentioned that nighttime temperatures were supposed to dip into the 40Fs this week.

The other weather news this week is the lack of rain, primarily in the northern portion of the state. Lack of rain in NE Ohio is evident with the grass going dormant. Rainfall totals at the top two weather stations are below normal precipitation; 2.06” in Ashtabula and 2.4” in Wooster respectively.

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<td>60.6</td>
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<td>3.2”</td>
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<td>NE</td>
<td>82.1</td>
<td>58.5</td>
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<td>2.9”</td>
<td>68.27/68.37</td>
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<td>NW</td>
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<td>60.2</td>
<td>2.54”</td>
<td>2.3”</td>
<td>72.76/74.30</td>
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<tr>
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<td>Central</td>
<td>83.4</td>
<td>61.5</td>
<td>2.37”</td>
<td>3.0”</td>
<td>73.18/72.78</td>
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<tr>
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<td>60.8</td>
<td>3.64”</td>
<td>2.0”</td>
<td>73.01/72.50</td>
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For a link to the OARDC Weather Stations, visit: [http://www.oardc.ohio-state.edu/centernet/weather.htm]

COMING ATTRACTIONS.

A. FARM SCIENCE REVIEW. This year’s Farm Science Review takes place September 22 - 24, 2015 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 by catching a shuttle on the west end of Friday Avenue 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 8:00 a.m. to 5:00 p.m. Sept. 22 - 24, 2015 and 8:00 a.m. to 4:00 p.m. Sept. 24, 2015.

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. "Summer is delicious, rain is refreshing, wind braces up, snow is exhilarating; there is no such thing as bad weather, only different kinds of good weather." - John Ruskin

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/

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)
Following are the participants in the August 25th conference call: Pam Bennett (Clark); Joe Boggs (Hamilton); Julie Crook (Hamilton); Erik Draper (Geauga); Denise Johnson (Master Gardener Volunteer program); Cindy Meyer (Butler); Dave Shetlar (Entomology); Amy Stone (Lucas); Nancy Taylor (C. Wayne Ellet Plant and Pest Diagnostic Clinic); Marne Titchenell (School of Environment and Natural Resource); 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].