BUCKEYE YARD AND GARDEN LINE 2014-16
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This is the 16th 2014 edition of the Buckeye Yard and Garden Line (BYGL). BYGL is developed from a Tuesday morning conference call of Extension Educators, Specialists, and other contributors in Ohio.

Celebrate 100 Years of Extending Knowledge and Changing Lives

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APPENDIX - Additional Website Resources.
1. PLANTS OF THE WEEK.

*ANNUAL - FOUNTAIN GRASS (*Pennisetum* hybrids). These ornamental grasses are not winter-hardy in Ohio and in fact, once a good frost hits the blooms, they shatter and look pretty awful in the landscape! These are annual fountain grasses and they do not tolerate frost or cold temperatures. Therefore, plant these in the early spring and watch them take off, even if it's just for one growing season. There are different cultivars of annual fountain grass on the market that are quite beautiful. Many have red or burgundy foliage and red flower heads and accent the landscape or large container gracefully during summer and into the fall. They have the ability to make a bold impression in the landscape or in a large container.

The plants form the typical upright arching clump similar to perennial fountain grasses. They bloom in mid-summer with spikes that are muted pink and purple. The spread can be anywhere from 2' to around 5 - 6' wide, depending on the variety. They tolerate a wide range of soils and prefer full sun, though can take a light shade.

'Burgundy Giant' is around 4 - 5' tall with red foliage and 'Compactum' is about 12 - 18" tall with a lighter red foliage. 'Fireworks', a newer cultivar, is a very showy fountain grass that starts out with leaf blades that are more scarlet in appearance overall but are actually variegated burgundy, pink, cream and green. As the blades get older, they become more of a burgundy color. This grows around 2.5' tall and about 3' wide. 'Vertigo', another newer cultivar, has very bold dark burgundy blades that are about 1" wide. It grows to around 5' tall and as wide without blooms.

Author: Pamela J. Bennett

*PERENNIAL - DAYLILY. (*Hemerocallis* spp.). *Hemerocallis* in Greek means "beauty for a day" and refers to the fact that each daylily bloom lasts for one day. Thank goodness there are lots of blooms on a single plant or we wouldn't see the wide number of varieties on the market today. Each stem or scape has several flower buds on it; one will bloom each day.

Daylilies, depending on the variety, can bloom from early June to around the end of August before declining ('Stella D'Oro') or they can be considered early, mid- or late season bloomers. Avid daylily breeders and growers classify them in terms of bloom time even further, from EE (extra early) to VL (very late) with 7 total bloom time categories. Daylilies that are considered re-bloomers are those that have the extended bloom period for most of the season. No matter when daylilies bloom, the variety of colors that are available to gardeners today really makes an impression in the landscape when planted in masses; they are a staple in the perennial border.

Daylilies are heat tolerant as well as tolerant of most soils. They grow best in full sun though will take some light shade (don't expect as many blooms in the shade, however). Plants can grow from around 12" in height to around 5' at the top of the flower bloom. Width can be anywhere from 12" to around 3 - 4'. The habit is clump-growing with upright arching foliage. The flowers appear at the top of the stem or scape with several buds on the flower. The size of the individual flower varies as well; blooms can range from as small as 2" to as large as 10" in diameter. Daylily growers will tell you that these plants do their best, however, if divided every 3 - 4 years.

Another little-known fact about daylilies - the flower petals are edible and are in fact, quite tasty if you enjoy this type of fare. You can even taste slight differences between varieties. As always, don't eat the petals if you have food allergies that might cause issues but they are classified as an edible flower.

Author: Pamela J. Bennett
* WOODY PLANTS OF THE WEEK - BEAUTY BUSH (*Kolkwitzia amabalis*). Last week Chatfield traveled to central and northern Michigan and for his first time ever into extreme northern Michigan and the Upper Peninsula (UP). As ever when traveling, plants mattered. Some were different, but many were not totally unknown to us buck-eyes, yet often long forgotten. Here is one: Beauty bush is a plant we do not grow much in Ohio, but that has great ornamental appeal for its tubular soft pink flowers with yellow throats and graceful arching branches. This shrub grows to about 8' tall and wide. The fuzzy hairs on the flower stems are an attractive up-close feature, but the overall floral affect is a spectacular landscape asset. This plant grows well at Secrest Arboretum in Wooster and it is obviously very hardy, growing in many gardens in full flower in northern Michigan along Lake Michigan in the town of Leland. It flowers in May in Ohio but was at its peak in Leland on the 4th of July.

**Author: Jim Chatfield**

* VEGETABLE – KOHLRABI (*Brassica oleracea* var. *gongylodes*). Kohlrabi is a fun, cool-season, vegetable to grow. Often called stem turnip because of the large swelling that develops above the soil line, this vegetable prefers a sunny site and fertile, well-drained soil. To prepare your garden bed incorporate 2 - 4" of composted organic matter. Fertilizer should be applied based on a soil test. It does not take Kohlrabi transplants long to reach maturity (early varieties: Eder, 38 days; Rapid, 40 days; Grand Duke, 50 days), which makes it ideal for a late season crop. Kohlrabi can be grown from seed or transplants. Transplants should have 4-6 mature leaves and a well-developed root system before planting. Four to six weeks are required to get transplants up to this size. Kohlrabi needs about 1 - 2" of water per week. Moisture fluctuations will cause the stems to become tough and woody.

Harvest kohlrabi when it is about 3" in size by cutting just below the head with a sharp knife. If plants grow larger than this they become woody and unpalatable.

Kohlrabi is a good source of vitamin C and potassium and can be eaten raw or cooked. Kohlrabi tastes like mild white turnips and has the texture of water chestnuts. Young and tender kohlrabi do not usually need peeling but medium to larger kohlrabi bulbs need to be peeled. Add kohlrabi to salads and crudité’s. Use the tender leaves like other greens.

**Author: Cindy Meyer**

* WEED – YELLOW NUTSEDGE (*Cyperus esculentus* L.). Yellow nutsedge has erect, triangular-shaped, yellowish-green stems that resemble grass. It is a perennial plant that reproduces by seed and by underground nut-like tubers and rhizomes. These underground structures may be found as deep as 8-14" below the plants, thus hand-pulling has little effect on controlling this weed.

Yellow nutsedge is a warm-season, perennial plant meaning that conditions have been ideal for their growth and development. Most grasses used in Ohio lawns are cool-season plants, meaning that high temperatures stunt their growth; consequently, they are at a disadvantage when competing head-to-head with warm-season plants. This is particularly a problem in lawns with thinning stands of turfgrass. Short-term control of nutsedge focuses on herbicide applications. Long-term control focuses on growing dense stands of turfgrass to maximize competition with these weeds.

Nutsedges are hard to eradicate; controlling these weeds can be a long process. A management plan should include both cultural (i.e. focusing on healthy turf grass, fertilization program, etc.) and chemical. Herbicides that are commonly used to control yellow nutsedge, include halosulfuron (e.g. SedgeHammer) and sulfentrazone (e.g. Dismiss). Both are selective post-emergent herbicides which
means that they are selective for certain weeds, are only effective on growing weeds, and will not prevent seed germination. Halosulfuron has the potential to cause discoloration of turfgrass. Sulfentrazone can provide 100% control of nutsedge in 7 days when applied at the highest labeled rate, and it does not cause turfgrass discoloration. The effectiveness of both herbicides strongly depends on reading and following label directions.

Author: Cindy Meyer

2. HORT SHORTS.

A. SOMETHING IS EATING MY TREE?! A few calls have been coming in to the Extension offices this week about unknown critters stripping bark from trees. After consulting with the BYGL team and Marne Titchenell, the Extension wildlife specialist, all evidence leads to squirrels. Squirrels may occasionally damage trees by chewing bark from branches and trunks and can even girdle trees and several species could be the causing the damage.

It was noted that at one site, based on Joe Boggs observations, that the home backed-up against a heavily wooded area (= squirrel haven!). In fact, his backyard was surrounded on two sides by woods. According to Joe, while he was talking with the homeowner, a gray squirrel hopped out of the woods and meandered around ... no doubt pleased that they were admiring his/her handiwork! The other interesting point is that the damage was done to a native HONEYLOCUST (*Gleditsia triacanthos*). While Joe was convinced gray squirrels were the culprits, he had never seen or heard of them stripping bark from honeylocust. The damage is most commonly done to maples; particularly sugar maple. Joe also stated that he could not find any damage to any other tree in his landscaping or the woods surrounding his landscaping, including on a nice big sugar maple at the edge of the woods. Very interesting indeed!

As Marne stated, knowing when the damage is occurring can help somewhat determine what species of squirrel is happily chewing away at your tree. If the damage is occurring at night then FLYING SQUIRRELS (*Glaucomys* spp.) are more likely the culprits and if the damage is occurring in the late evening or at dusk then GREY SQUIRRELS (*Sciurus carolinensis*) or FOX SQUIRRELS (*Sciurus niger*) may be the culprits.

As far as control goes, there is truly not a lot one can do. Trapping is a possibility but the likelihood that you would be catching the culprit is next to nil. For squirrels, this type of activity is usually fleeting and it may only damage a little of the tree and then move on with their normal behaviors. If you experience lots of damage in the tree it may be useful to consult a certified arborist to help trim the damaged portions out of the tree.

Author: Cindy Meyer

B. YOU MIGHT LIKE THESE COOLER TEMPERATURES BUT SOME OF YOUR VEGETABLES DON'T! Your tomatoes and peppers are screamin' mad about this cooler weather. They are really hoping for warmer weather and you should too if you want to enjoy the fruits of your labor! These two plants in particular are warm season plants and thrive on temperatures that are around 75F during the day. When temperatures drop to below 60F at night for tomatoes and 50F at night for peppers, things stop happening. On the other hand, when the temperatures get into the 90F range at night, things slow down too. I know, picky picky picky!
Extreme temperatures affect pollination of these fruits. Temperatures above 90°F during the day and 70°F at night prevent successful pollination on tomatoes. Likewise, the same occurs when temperatures drop below 60°F at night. Peppers are more sensitive when night temperatures drop below 50°F. The take home message is that you might see the results of these past few cool nights in the near future showing up in the form of blossom drop. Don’t be alarmed however; this is only going to affect those that are in the right stage of the pollination process at the wrong time. Blooms that are already pollinated or become pollinated after this cold spell will still continue to produce (if the weather is conducive).

Other weather-related issues that BYGLers are talking about in the vegetable garden include blossom end rot of tomato, peppers, eggplant, and squash, physiological leaf roll on tomatoes, and some diseases that develop during periods of cool temperatures and/or extended periods of moisture on the leaf surface.

Blossom end rot (BER) is a physiological disorder associated with a low concentration of calcium in the fruit. Fruits require relatively large amounts of calcium for development and when it’s lacking, the tissues break down at the blossom end and the result is a blackish, sunken area. On squash it looks just like it sounds - it looks rotted.

BER is weather related because extreme fluctuations in soil moisture levels can lead to this problem. Extreme dry or extreme wet soils make it harder for the roots to take up calcium. It’s easier to manage extreme dry conditions with watering on a regular basis, keeping the soil moist. It’s more difficult to manage a soil situation in which the soil is wet for extended periods of time. In the areas where we are seeing blossom end rot, it’s likely because of the frequent summer rains this season.

Foliar calcium sprays are often recommended but have little value as they are poorly absorbed and don’t move to the fruit easily. If you have had consistent rains and the soils have really never dried down, pick off the bad fruit and hope for better weather.

Physiological leaf roll also occurs when there are extreme soil moisture fluctuations. Again, we tend to see this more often when we have these consistent rains as opposed to dry weather (people are irrigating which helps to prevent this problem). Older leaflets toward the bottom of the plant roll upward, become cupped, and take on a leathery appearance and textures. This does not usually adversely affect the plant.

Another physiological issue with tomatoes is called cat-facing. This occurs when we have cloudy, overcast, cool days. This term is used for deformed, misshapen fruit. You might find some of your older green tomatoes with this problem. The blossom end of the fruit can be puckered and scarred and some believe that it’s because the blossom sticks to the side of the developing fruit.

And finally, there are several tomato and pepper diseases that are aggravated by cool temperatures and/or extended periods of moisture (rains and heavy night dew) on the leaf surface. Determine the disease first before using any spray in order to hit the target.

Of course, in a few weeks, all of this will change and all of those fruits that are developing on your plants right now will ripen and you’ll have so much you won’t know what to do with them!

Author: Pamela J. Bennett
3. BUGBYTES.

A. MIMOSA WEBWORM POPULATIONS ARE SPINNING-UP. Heavy localized mimosa webworm (*Homadaula anisocentra*) populations are once again appearing this season in southwest Ohio. Significant populations were observed in that part of the state last season with some small trees becoming completely covered in nests (2013-22, 08/29/13). There are two to three overlapping generations per season in Ohio; most of the webworms in the southwest part of the state are now second generation.

Despite their common name, mimosa webworms are most often found on honeylocusts in Ohio. This non-native nest-maker was accidently introduced into the U.S. from China in the early 1940s. The first infestations were found on honeylocust in Washington, D.C. landscapes that had been planted to replace American elms killed by Dutch elm disease. Since that time, the webworm has spread across much of the eastern and Midwestern U.S.

Fortunately, there are numerous predators and parasitoids as well as several pathogens that naturally suppress webworm populations. These bio-allies are responsible for the widely fluctuating population densities observed in Ohio and elsewhere from year-to-year. Locations that suffer through a few successive years with high webworm populations typically enjoy a number of years with almost no webworms. Indeed, prior to last season, mimosa webworms had been largely absent from the southwest part of the state for over 10 years.

The caterpillars feed gregariously as skeletonizers within webs spun over the foliage; they only feed on leaflets enveloped by their silk nests. Attention is usually drawn to an infestation by clusters of orangish-brown “torched” leaves and leaflets that are tightly encased in webbing. Female moths often lay eggs on nests from which they developed. Consequently, the nests are expanded by each new crop of caterpillars. Eventually, the nests become so dense that insecticides will fail to penetrate to kill the caterpillars. This means that management strategies involving insecticide applications should focus on targeting first generation caterpillars that were present earlier in the season. Also, preventing first generation nests will reduce the attraction of trees to second and third generation females.

Mimosa webworms on honeylocust are generally considered an aesthetic and nuisance pest problem. The nests make trees unsightly and caterpillars will occasionally drop from infested trees to visit backyard gardeners and grillers. Significant leaf damage usually occurs late in the season as a cumulative effect of nests being expanded or new nests being created with each successive generation. Consequently, there is seldom enough leaf loss early in the season to cause long-term weakening of trees.

If insecticides are being considered to target first generation caterpillars next season, standard insecticides labeled for use on honeylocusts will be effective in controlling the webworms. However, they may also suppress the bio-allies. Products based on the naturally occurring bacterium *Bacillus thuringiensis* (Bt) will have little to no impact on the bio-allies. Two applications of Bt products spaced 7-10 days apart and targeting the first generation caterpillars is recommended. Of course, nests on small trees may be removed by hand.

Author: Joe Boggs

B. TOMATO WOES: HORNWORMS. Pam Bennett reported being thwarted with finding (and removing!) hornworms feeding on her tomatoes even though she could clearly see their black, barrel-shaped frass (insect excrement) beneath the plants. BYGLers commiserated with Pam noting how
amazing it is that these large caterpillars can remain hidden even from the best-trained detectors! Two types of hornworms may be found feeding on tomato plants: TOMATO HORNWORMS (Manduca quinquemaculata) and TOBACCO HORNWORMS (M. sexta). The caterpillars are called "hornworms" because of the prominent horn-like projection rising from the upper surface at the end of their abdomen.

Both hornworms will feed on tomatoes as well as several other closely related plants in the Solanaceae family including eggplants, peppers, potatoes, tobacco, and certain weeds. Backyard vegetable gardeners need to be alert for the symptoms of feeding activity by these luminous green caterpillars which includes missing leaves and stems, hunks bitten out of developing fruit, and the aforementioned frass on leaves and the ground beneath infested plants.

Tomato and tobacco hornworm caterpillars are the larvae of hawk or sphinx moths. Indeed, tomato hornworms eventually grow up to become the 5-Spotted Hawkmoth; the "quinque" in the specific epithet refers to the five spots on the moth. The caterpillars can grow to a truly impressive size of 4" in length and 1/2-5/8" in diameter. However, despite their size, these cleverly camouflaged caterpillars may go undiscovered for weeks owing that to their coloration and white markings. Both hornworms have white diagonal lines along their sides. The tobacco hornworms have a series of white diagonal lines while the lines on tomato hornworms appear as a series of white sideways "V's".

The caterpillars can be controlled through hand-picking; however, both caterpillars are also subject to the depredations of several predators and parasitoids. Paper wasps, yellow jackets, and other wasps will grab them, chew them up, and take the remains to their nests to feed their larvae. The tiny parasitoid wasp, Cotesia congregata (Family Braconidae) inserts its eggs into the caterpillars and the resulting wasp larvae consume the hornworms from the inside out. Just before the hornworms die, the full grown wasp larvae erupt through the upper epidermis to form oval, white, silk pupal cocoons. Rows of these white cocoons sprouting from tobacco and tomato hornworms are a well-known and a welcomed sight to home gardeners. Of course, the parasitized caterpillars should be left alone. They will do little to no feeding, and the wasp cocoons represent the potential future demise of numerous other hornworms.

Author: Joe Boggs

C. MORE TOMATO WOES: BLISTER BEETLES. Joe Boggs reported receiving an e-mail message from a tomato grower with plants being hammered by blister beetles. The attached images were not clear enough to determine whether the culprits were MARGINED BLISTER BEETLES (Epicauta pestifera) or BLACK BLISTER BEETLES (E. pennsylvanica); however, both beetles are capable of showing-up in large numbers to feed on the leaves and flowers of a wide range of perennials and annuals including vegetable plants.

Aside from producing noticeable defoliation, the beetles also pack a serious defensive punch! The beetle's blood contains cantharidin, a chemical that can cause severe skin blistering if the beetles are mishandled, hence the common name. This chemical can also be toxic to people and animals if ingested. Oddly, cantharidin is extracted from a European blister beetle to produce "Spanish Fly."

Several species of blister beetles may be found in Ohio. They range in size from 0.75 - 1.25" long. The beetles have long legs and narrow, elongated soft bodies. Their heads appear bulbous because they are much wider than the pronotum ("neck"). The beetle's flexible front wings often fail to extend to the tip of the abdomen. Margined blister beetles are so named because the margins of their black wings are bounded by gray edges. Black blister beetles lack marking; they are totally … black.
The adults of most species are plant feeders and may be found consuming leaves or flowers on plants belonging to several families including Amaranthaceae, Asteraceae (= Compositae), Fabaceae (= Leguminosae), and Solanaceae. The larvae are specialized predators. Some feed on grasshopper eggs while others feed in the nests of solitary bees where they consume bee eggs, larvae, and food stored in the nest. Blister beetle adults may emerge "en mass" and produce rapid plant damage. Fortunately, their visits are usually very short lived, lasting only a week or two. They can be easily controlled if necessary by using a gloved hand to knock them into a bucket of soapy water (to be carefully disposed!), or by using an insecticide labeled for the host plant.

Author: Joe Boggs

D. POTTER WASPS. This is the time of year when the odd looking clay nests produced by potter wasp (Eumenes sp.) may be found hanging from the undersides of leaves or plant stems. The wasp belongs to the family Vespidae, which includes paper wasps, yellowjackets, and hornets; however, potter wasps create their nesting artistry using clay rather than paper.

As their common name describes, potter wasps fashion small rounded jug-like nests out of clay, and they attach the nests to leaves, twigs, or to structures such as window seals. The 3/8 - 3/4" long potter wasp females don't gather mud for their nests. They first collect water and then mix it with dry soil using their mandibles. The mud mixture is transported to the nest-making site where it is fashioned into individual pots ranging in size from 1/4 - 6/16" in diameter. The entire construction process may require a couple of hundred trips over several hours.

As the pot nears completion, the female lays a single egg attached by a thread to the inside surface of the nest. They then provision the pot with a caterpillar or beetle larva that has been paralyzed by a sting. Once provisioned, the pot is sealed with a clay plug leaving the hapless paralyzed prey to await the wasp's hatching larva. Thus, potter wasps are considered beneficial … to all but their prey!

Author: Joe Boggs

E. A BEAUTIFUL BEETLE. BYGL reports are usually focused on plant nasties. However, this week Joe Boggs reported observing one of the most beautiful beetles found in Ohio. The beetle lacks a common name, but is generally referred to as the "DOGBANE BEETLE" because it primarily feeds on dogbane. The beetle's scientific name is Chrysochus auratus, which loosely translates to "made of gold."

Indeed, these beautiful iridescent beetles may look like shimmering spots of gold on the leaves of dogbane, or they may blaze with an array of other colors depending on the viewer's angle to the beetle. A slight change in viewing angle will cause the beetles to glisten with multiple shades of green, copper, blue, and red. The secret to this medley of colors can be found just below the surface of the exoskeleton. Beneath an outer translucent layer rests stacks of tiny slanting plates that cover color pigments. Light rays that strike the surface of the plates are reflected as a shimmering sheen, while light rays that bounce off the pigments produce an array of colors. The result is a lustrous mix of ever-changing hues; a kaleidoscope of colors that are almost unmatched in the insect world.

The beetles are found during the day feeding and resting on dogbane leaves. They are not picked-off by predators because the beetles have a nasty chemical defense. As with many members of the dogbane family (Apocynaceae), such as common milkweed, dogbane has milky sap that contains poisonous alkaloids (cardiac glycosides). The beetle ingests the cardiac glycosides, stores them in
glands, and then secretes them when threatened by predators. This is different from the chemical defense strategy employed by insects that feed on milkweeds, such as the MONARCH BUTTERFLY (*Danaus plexippus*). The butterfly caterpillars actually sequester the plant toxins in their flesh. However, the results are the same with their bright coloration advertising their ability to wage chemical warfare against predators. Pay close attention to areas with dogbane to see these iridescent spots of gold.

*Author: Joe Boggs*

F. A TRASHY SPIDER. Joe Boggs reported observing a fascinating orbweaver spider known as the TRASHLINE SPIDER (*Cyclosa turbinate*) while taking photos of calico scale on hawthorn last week. Trashline spiders are relatively small measuring around 0.25 - 0.5" from the tips of their legs. Their legs, cephalothorax, and abdomen are covered with mottled black and white markings. As with some orbweavers, these spiders construct a vertical structure of dense, coarse silk at the center of its web known as a "stabilimentum."

A close examination of the stabilimentum will reveal that the silk enshrouds the drained bodies of previous victims; the morbid structure is responsible for the "trashline" common name. The spiders rest in the middle of their trashline and their mottled coloration makes them very difficult to see among their similarly sized and colored bundles of trash. Indeed, research has shown that the trash bundles serve to confuse predators, such as birds and wasps, intent on making a meal of the spider, and the greater the number of bundles, the greater the confusion.

*Author: Joe Boggs*

G. WINDSHIELD WIPES - SQUASH BUG. Squash bugs (*Anasa tristis*) are colonizing gardens around the State this week. These insects attack squash, pumpkins, and other cucurbits. The bronze-reddish eggs of these insects are commonly found underneath leaves in clusters of 20. Nymphs are green in color and then progressively turn gray as they mature to adulthood, which generally takes 4 - 6 weeks. The adults are flat, large insects that measure 5/8" long and approximately 1/3" wide and are dark gray to dark brown in color. The edges of their abdomen have alternating orange and brown stripes.

Squash bugs suck the sap out of the leaves with their piercing-sucking mouthparts. Their feeding causes yellow spots that eventually turn brown. Unlike cucumber beetles, squash bugs do not vector diseases but their feeding can disrupt the flow of water and nutrients, which can cause wilting. Plants may die from feeding damage based on the age of plant (the younger the plant the easier it may be killed) and how extensive the plant has been attacked.

Squash bugs overwinter as adults in sheltered places, such as under plant debris. When the adult squash bugs emerge in the spring, they fly to growing curcurbit plants (i.e. cucumber) to feed and mate.

Growers should concentrate on controlling these insects early in the season. Good sanitation methods such as removing all plant debris around the garden can help to eliminate hiding areas. Crushing eggs, knocking off nymphs and killing them in a bucket of soapy water and/or trapping the squash bugs under cardboard (bugs will congregate under the boards at night), and then collecting and destroying cardboard the next day can help control these insects. Insecticides are not generally needed but can be used if plants are showing signs of damage early in the season. When using any insecticide follow directions according to label instructions.
4. DISEASE DIGEST.

A. MOIST CHAMBER. A number of usual suspects were identified in the OSU Plant and Pest Diagnostic Clinic, including VASCULAR WILTS such as Dutch elm disease, oak wilt and Verticillium wilt, and DOWNY MILDEWS on impatiens and on basil. CEDAR QUINCE RUST was also noted by Joe Boggs and other BYGLers statewide on fruits of hawthorn, stems of hawthorn, and somewhat unusually on leaves of hawthorn. Remember that the Gymnosporangium clavipes pathogen arrives on rosaceous hosts (hawthorn, crabapple, quince) from the alternate host eastern red cedar (juniper). The orangish spores splitting out from the aecial pustules on the hawthorn will be transmitted back to junipers in the next several months to complete the cycle.

Author: Jim Chatfield

5. TURF TIPS.

A. WIDE RANGE OF WEATHER CONDITIONS IMPACT TURF QUALITY. It just depends on where you live. This phrase was evident in hearing everyone's reports on BYGL this week regarding the quality of the turfgrass, especially in non-irrigated sites throughout the buckeye state. Joe Rimelspach began his report by saying that he has never seen lawns in certain central Ohio areas look so good in July. The turf is thick and the canopy dense. These areas have been on the receiving end of regular rainfall that has made growing grass an easy task this season. On the flip side, Amy Stone reported that there are some areas in Lucas County that un-irrigated lawns have begun to shut down and go dormant. The rainfall has been much more spotty and even lacking in many areas in her county.

Author: Amy Stone

B. NUTSEDGE FLOURISHES. Joe Rimelspach reported that yellow nutsedge (Cyperus esculentus) is flourishing in many Ohio lawns. Nutsedges do best during the warm months of summer. Most grasses used in Ohio lawns are cool-season plants meaning that high temperatures stunt their growth; they are at a disadvantage when competing head-to-head with warm-season plants. This is particularly a problem in lawns with thinning stands of turfgrass. Short-term control of nutsedge may focus on herbicide applications. However, long-term control should focus on growing thick turfgrass with numerous plants to maximize turfgrass competition with this troublesome weed.

Yellow nutsedge has erect, triangular-shaped yellowish-green stems. It is a perennial plant that reproduces by seed and by producing underground nut-like tubers and rhizomes. These underground structures may be found as deep as 8 - 14” below the plants, thus hand-pulling will have little effect on controlling nutsedge.

Herbicides that are commonly used to control yellow nutsedge include halosulfuron-methyl (e.g. SedgeHammer, etc.), sulfosulfuron (e.g. Certainty), and sulfentrazone (e.g. Dismiss, Ortho Nutsedge Killer for Lawns, etc.), or combination products such as sulfentrazone + prodimine (e.g. Echelon 4SC, etc.) and sulfentrazone + quinclorac (e.g. Solitare, etc.). While some of these herbicides have pre-emergent activity against a number of other weeds, their activity is primarily post-emergent against nutsedge meaning they have little effect on preventing seed germination. As with all pesticides,
applicators must read and follow label directions. Particular attention should be given to the time between applications and re-seeding if the long term plan is to manage nutsedge by thickening a lawn.

Author: Joe Boggs

6. INDUSTRY INSIGHTS.

A. A TWO-PEST DIAGNOSTIC CHALLENGE. Diagnosing multiple pest and disease problems on the same tree is made more challenging when the problems present the same or similar symptoms. “Chlorosis” (chlorotic = leaf yellowing) is a good example. The condition may be caused by a wide-range of plant problems; everything from nutrient deficiencies to vascular diseases to plant pests.

CALICO SCALE (Eulecanium cerasorum) is a non-native "soft" scale which means mature scales are protected by a soft shell. Their common name is derived from the starkly contrasting calico pattern of black-and-white markings on the hemispherical-shaped shells of mature females. As with all soft scales, calico scale adults and nymphs (crawlers) feed by inserting their piercing-sucking mouthparts into phloem vessels to extract amino acids that are dissolved in the sugary plant sap flowing through the vessels. They discharge excess sap from their anus in the form of sticky, sugary "honeydew" that drips onto leaves, stems, and understory plants. The honeydew frequently becomes colonized by unsightly black sooty molds.

At this time of the season, calico scale may be identified by the reddish to dark brown dead females that remain attached to tree stems; they look like deflated balloons. The females produced their eggs in the spring and then died. The resulting nymphs (crawlers) migrated to the underside of the leaves of infested trees. A close examination made now will reveal the tiny, yellowish-tan crawlers attached to leaf veins. The scale can infest a wide variety of deciduous trees, but honeylocust is a favored tree host and the collective sap-sucking activity of a heavy crawler infestation can cause leaflets to become chlorotic.

HONEYLOCUST SPIDER MITES (Platytetranychus multidigituli) only infests their namesake host. This is a "warm season" mite meaning that populations reach their highest seasonal densities during the warm months of summer; right now. The mites live on the underside of the leaflets. As with all spider mites, they feed by using their piercing-sucking chelicerae to rupture individual plant cells. This produces characteristic tiny yellow spots, or "stippling." As the stippling coalesces, foliage becomes chlorotic; the early symptoms mimic those produced by calico scale crawlers on honeylocust. However, an important difference is that heavy spider mite damage eventually produces bronzing at the base of the leaflets.

Joe Boggs reported observing a heavy calico scale infestation on honeylocusts in parking lot "tree planters" in southwest Ohio. Dense congregations of dead females on twigs and branches looked like tiny, brown grape clusters. Leaflets were becoming chlorotic on a number of trees and Joe at first assumed the symptoms were being produced by calico scale crawlers. However, some of the leaflets were distinctly bronze-colored at the base and a close look revealed the characteristic stippling produced by honeylocust spider mites. An even closer examination with a 10x hand-lens revealed the mites themselves!

One management option for soft scales is to make a soil application of imidacloprid (e.g. Merit). However, applications of this systemic neonicotinoid have been linked in recent years to stimulating spider mite outbreaks. Correctly identifying two pest problems on the same tree is not only important
for making a correct diagnosis; it's also important for establishing effective management options. This is particularly true if a management option for one pest interferes with managing another pest!

Author: Joe Boggs

B. GYPSY MOTH UPDATE. Another season of gypsy moth caterpillar feeding has come and gone. Many trees in western Lucas County that had been completely defoliated have begun to send out new leaves. These leaves tend to be a little smaller and are lighter green in color right now. These trees have a look about them that can be very helpful when doing drive-by monitoring to determine the extent of the spread. This should also be ground verified by looking for egg masses as well.

This particular area in northwest Ohio had high populations last season as well, and some of the trees were experiencing year two of 100% defoliation. This coupled with other stresses including drought has pushed several of the trees over the edge, and they appear not to be recovering from this year's damage.

While gypsy moth feeding typically does not kill a deciduous tree in a single season, several back-to-back years can ultimately lead to death of the tree. Caterpillars feeding on spruce in a single season can lead to this evergreens' death.

Now is the time to begin evaluating and predicting what population levels will be next season based on gypsy moth egg mass counts. The egg masses that were laid this summer will remain in this stage for the rest of the summer, fall, over the winter, and will hatch next spring about the time redbud trees are blooming.

If egg mass counts are high and populations are widespread in a given area, property owners may want to consider applying to the state to be considered for the 2015 Gypsy Moth Suppression Program. There are minimum requirements that have been set and include:

- Proposed block must be located in a county that has been designated quarantine for gypsy moth by ODA.
- Proposed block must contain a minimum of 50 contiguous forested acres.
- Proposed block must have a concentration of at least 250 egg masses per in residential forested areas or 1000 egg masses per acre in uninhabited forested areas.
- Proposed block must have a tree canopy that covers no less than 50% of the block.
- Proposed block must consist of at least 35% of tree species that are either susceptible or slightly resistant to the gypsy moth.
- Proposed block must receive a favorable T & E Assessment from Ohio Department of Natural Resources and the United States Fish & Wildlife Service.

Additional information, including a copy of the application, can be found on the Ohio Department of Agriculture’s website at [http://www.agri.ohio.gov/divs/plant/gypsy/gypsy-index.aspx](http://www.agri.ohio.gov/divs/plant/gypsy/gypsy-index.aspx). The application deadline to be considered for the 2015 treatment project is September 1, 2014. Specific questions about the program can be directed to ODA by calling...
their Gypsy Moth Hotline at 800-282-1955 (press option 3 for Pesticides and then option 7 for Gypsy Moth) (Monday - Friday, 8 a.m. - 5 p.m.) or by calling the Plant Pest Control Section at 614-728-6400.

Author: Amy Stone

7. WEATHERWATCH.

A. WEATHERWATCH UPDATE. The following weather information summarizes data collected at various Ohio Agricultural Research Development Center (OARDC) Weather Stations spanning the dates from July 1-16, 2014, with the exception of the soil temperatures which are readings from Wednesday, July 16, 2014 at 5:20 a.m.

While many areas across Ohio have been receiving ample rain, there are some areas that remain dry. Pam Bennett reported that the Springfield area has been receiving about 1" of precipitation each week. Cindy Meyer mentioned that heavy rainfall fell in SW Ohio and some reports and observations exceed 3" in certain areas. Amy Stone reported areas in the NW are dry – some lawns are going dormant as showers have been hit or miss.

Temperatures this week are feeling "anti-summer" with highs in the 70's and lows in the 40's. While forecasts predict temperatures to rebound in the average range over the upcoming weekend, we will remember the jacket weather which is unusual for the summer.

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<td>68.39/65.50</td>
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<td>60.9</td>
<td>1.12</td>
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For a link to the OARDC Weather Stations, visit: [http://www.oardc.ohio-state.edu/centernet/weather.htm]

Author: Amy Stone

8. COMING ATTRACTIONS.

A. PERENNIAL PLANT ASSOCIATION PERENNIAL PRIMER. All day symposium at the Netherland Hilton Hall of Mirrors in Cincinnati on July 28, 2014. Top perennial speakers will be Tony Avent, Paul Cappiello, Susan Martin, Jennifer Brennan, Gene Bush, and Laura Deter. For more information and registration visit: [http://events.r20.constantcontact.com/register/event?oeidk=a07e96pflsf38b4bfd6&llr=8swoa7cab]

B. NW OHIO GREEN INDUSTRY SUMMER SESSION. Don’t miss this year’s NW Ohio Green Industry Summer Session. The program will be held on Wednesday, August 6, 2014 at Owens Community College. The program will include a keynote address by Matt Ross. Matt previously worked for The Toledo Botanical Garden and Owens Community College, and is currently working at
Longwood Garden in Pennsylvania. It will be great to have Matt back in NW Ohio for this program. Additionally, there will be 16 concurrent sessions that participants can choose from throughout the afternoon from the plant track, best practices track, diagnostic track, and pest track, and will include credits from both ODA and ISA. Registration will go live next week.

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

D. PLANT TRIALS DAY AT THE CINCINNATI ZOO & BOTANICAL GARDEN. This all day symposium will take place August 28, 2014. Speakers include legendary plantsmen/nurseriesmen Roy Klehm of Beavercreek and Song Sparrow Nurseries and Bill Hendricks of Klyn Nurseries; top perennial trials expert Richard Hawk, Chicago Botanical Garden; top annual trials expert Susie Raker, Raker’s & Sons; and Steve Foltz and Scott Beuerlein. For more information and to register visit [www.cincinnatizoo.org].

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

F. PESTICIDE SAFETY TRAINING - New Commercial Applicators and Training Servicepersons, September 24, 2014. Core and Trained Serviceperson trainings are held in the morning, and Categories 8, 5, 2c, and 6c in the afternoon. The session will be held at the ODA in Reynoldsburg, Ohio. For more information about the event, check out the PestED website at [http://pested.osu.edu].

G. WOOD-DESTROYING INSECT INSPECTION TRAINING, October 8, 2014. Mandatory training is required for applicators becoming licensed in commercial Category 12. Recertification credit is available. The session will be held at the ODA in Reynoldsburg, Ohio. For more information about this event, check out the PestED website at [http://pested.osu.edu].

H. NEW FROM THE 87TH OHIO STATE UNIVERSITY GREEN INDUSTRY SHORT COURSE. Planning for the 87th OSU Green Industry Short Course, formerly the OSU Nursery Short Course, continues. As reported recently, this year’s event will be held in conjunction with the 48th Annual Ohio Turfgrass Foundation Conference and Show on December 9 – 11, 2014 at the Kalahari Resort and Convention Center in Sandusky, Ohio.

“Landscape Design from the Ground Up: The use of Prescription Organic Matter” will be one of the topics presented by John Lloyd of Plant Health Doctors of Mound, Minnesota. Learn crucial lessons about the importance of organic matter and the nuances in its use for landscapers in planning successfully sustainable garden outcomes due to root health. As Robert Frost said: “A plant’s leaves may be ever so good/so may its bark and so may its wood/but unless you put the right thing to its root/it never will show much flower or fruit.”
Also remember that this broad-based OSU green industry program will be coupled with the great Ohio Turfgrass Foundation Conference program that covers all aspects of the world of turfgrass and their additional partnerships with the Ohio Landscape Association and the Ohio Lawn Care Association.

Updates will occur throughout the summer and fall as we approach the Conference and Short Course. Look for information on the website at [www.osushortcourse.com] and here in the Buckeye Yard and Garden Line (BYGL).

9. BYGLOSOPHY.

WOODMAN, LEAVE THAT TREE ALONE – UNLESS YOU PUT IT TO USE! Along a trail at Tahquamenon Falls in the Upper Peninsula of Michigan, was a sign with this PRAYER OF THE WOODS:

“I am the heat of your hearth on a cold winter night, the friendly shade screening you from the summer sun, and my fruits are refreshing draughts quenching your thirst as you journey on. I am the beam that holds your house, the board of your table, the bed on which your lie, and the timber that builds your boat. I am the handle of your hoe, the door of your homestead, the wood of your cradle, and the shell of your coffin. I am the bread of kindness and the flower of beauty, Ye who pass here, listen to my prayer: harm me not.”

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/
Following are the participants in the July 15th conference call: Joe Boggs (Hamilton); Jim Chatfield (Hort and Crop Science and Plant Pathology); Julie Crook (Hamilton); Denise Johnson (Master Gardener Volunteer Program); Cindy Meyer (Butler); Pamela J. Bennett (Clark); Joe Rimelspach (Department of Plant Pathology); Amy Stone (Lucas); and Nancy Taylor (C. Wayne Ellett Plant and Pest Diagnostic Clinic (CWEPPDC).

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.

BYGL is a service of OSU Extension and is aided by support from the ONLA (Ohio Nursery and Landscape Association) [http://onla.org; http://buckeyegardening.com] to the OSU Extension Nursery, Landscape and Turf Team (ENLTT).

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.

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Keith L. Smith, Associate Vice President for Agricultural Administration; Associate Dean, College of Food, Agricultural, and Environmental Sciences; Director, Ohio State University Extension; and Gist Chair in Extension Education and Leadership.