

BYGL Newsletter

[July 2, 2015](#)

This is the 13th 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.

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Plants of The Week »

Annual - Celosia, Cockscomb (*Celosia* spp.)



There are three primary groups of celosia: *C. argentea* var *cristata* (flowers that look like brains!); *C. argentea* var *plumosa* (feathery, flame-like blooms); and *C. argentea* var *spicata* (spikey flower heads).

The first is definitely easy to identify as the flower does look like a brain except much more colorful than gray matter! Red, yellow or orange flowers hold up most of the season with very little maintenance.

C. argentea var *cristata* has feathery flowers held atop the stem.

These flower heads are actually composed of hundreds of tiny flowers. Some of the newer varieties have performed quite well in trials without deadheading throughout the season. For instance *C. 'Arrabona Red'* looked fantastic clear into September without any deadheading. *C. argentea* var *spicata* also has some great new cultivars that don't require deadheading during the season.

These plants come in all different sizes depending on the species and cultivar. The "brain" plants tend to be shorter and more compact as do the plumose types. The plumose types are quite a display when massed in plantings. The spicata types can be up to 3' tall and almost as wide. They are excellent in cottage and English-style gardens.

All prefer full sun and well-drained soil. The flower colors are usually red, yellow, orange, white, pink and purple. The flowers of each make great cut and dried flowers. There are very few pest problems associated with these plants. One issue with some of the taller *cristata* types is that the flowers get a little top-heavy and may need staked.

For More Information:

Texas A&M Horticulture Update based on the National Garden Bureau press release on Celosia

http://aggie-horticulture.tamu.edu/newsletters/hortupdate/hortupdate_archives/2006/apr06/Celosia.html

Missouri Botanical Garden Plant Finder search on Celosia results

<http://www.missouribotanicalgarden.org/PlantFinder/PlantFinderProfileResults.aspx>

Perennial - Coneflower (*Echinacea* spp.)



Can you say "too many cultivars to keep track of???" Coneflower lovers would disagree with this statement but the new gardener could easily be overwhelmed with the number of cultivars of this plant that are on the market today. Double and single petals, reds, whites, purples, and a variety of colors - who doesn't have at least one coneflower in their garden?

Coneflowers are tough plants and extremely easy to grow which



is one reason why you see so many. They begin blooming in last spring (mid-June) and last almost up until the end of August.

They prefer full sun but will grow in some shade. Too much shade and the plants become lazy and floppy. They also prefer well-drained soil and tolerate drought conditions, making them perfect for naturalized areas, meadows or prairie gardens. They grow 2 1/5 - 3' tall and as wide.

The daisy-like flowers come in a wide variety of colors and are quite attractive to butterflies. When they go to seed after flowering they become extremely attractive to goldfinches. The downside to allowing them to go to seed is that they can be quite prolific and you may have a lot of seedlings the next season. If you have a specific cultivar that is grown vegetatively, the seedlings may not be true to the parent plant. Keep this in mind as you will have to decide whether or not to deadhead the coneflowers. I deadhead my special cultivars (e.g. 'Hot Papaya', 'Marmalade', and others) but let the species coneflower go to seed to feed the finches and to spread. The flowers also make nice cut flowers.

One interesting challenge that has come about in recent years is the sunflower head-clipping weevil that has been a bit of a pest in coneflower plantings. Joe Boggs provides information below (see A...) about this pest. Otherwise, there are very few problems associated with growing coneflowers.

For More Information:

Missouri Botanical Garden Plant Finder information on Echinacea 'Marmalade'

<http://www.missouribotanicalgarden.org/PlantFinder/PlantFinderDetails.aspx>

Lady Bird Johnson Wildflower center information on Echinacea purpurea (purple coneflower)

<http://web126.cc.utexas.edu/plants/result.php>

Woody - Ailanthus (*Ailanthus altissima*)



The ailanthus (a.k.a. tree-of-heaven, stinking sumac, Chinese sumac, stinktree, varnishtree) is a rapid-growing, invasive tree that grows in a multitude of habitats. Ailanthus does not have overly-restrictive, environmental requirements for its growth and development. It was even the subject of the book, "A Tree Grows in Brooklyn." It can be found in inner city vacant lots, cracks between buildings and sidewalks, suburban disturbed areas, and rural fence rows and wood lots.

Ailanthus is native to Taiwan and central China. It was introduced into the US multiple times to both the eastern and western coasts

as early as 1784. Before it was recognized as an invasive, it was produced and sold as an ornamental. For many years, it was advertised and sold as the "miracle tree" on the back pages and covers of magazines and newspaper inserts. Ailanthus was brought to California by Chinese immigrants that came to work the gold fields and construction of the transcontinental railroad. It has a long history of folk medicine and cultural use in Asia and is likely the reason it was brought with the Chinese.

Ailanthus is a rapid growing deciduous tree that can reach heights of 70' with pale-gray, smooth bark, light brown twigs and large (1 - 4' long), pinnately compound (11 - 25 smaller leaflets) leaves that leave huge leaf scars when they fall off. Other compound-leaved shrubs and trees can be mistaken for ailanthus like staghorn sumac (*Rhus typhina*), ash (*Fraxinus* spp.), black walnut (*Juglans nigra*), and hickory (*Carya* spp.).

The wood of the tree is soft, weak, coarse-grained and creamy white to light brown in color. Ailanthus is called the stinktree because its leaves, stems and some flowers have a strong, unpleasant to offensive odor likened to cat urine or rotting peanuts or cashews. Ailanthus is a dioecious tree meaning plants are either male or female. Its large showy clusters of small yellowish-green flowers are produced during June. After pollination and fertilization, female trees display large bunches of flat, twisted, single-seeded winged fruits or samaras that may remain on the trees for long periods of time. Part of the attractiveness of the tree as an ornamental was the red to yellow coloration of the seeds on the green background of the foliage. From a distance, they produce a very attractive display. An individual female tree may produce upwards of 325,000 seeds per year. Ailanthus reproduces by seed, from root sprouts, and by vigorous re-sprouting, especially in response to injury such as breakage or cutting. Part of the reason that ailanthus can spread rapidly into new areas is that it produces a chemical that can prevent or kill other plants from growing near it reducing competition for resources.

Ailanthus is no longer recommended to be planted as an ornamental tree because of its invasiveness and competitiveness in different ecosystems. Besides, it spreads well enough on its own.

For More Information:

United States Forest Service Info on Ailanthus

<http://www.fs.fed.us/database/feis/plants/tree/ailalt/all.html>

Vegetable - Tomato (*Lycopersicon esculentum*)



One of the most commonly grown veggie plants is the tomato. Tomatoes are nutritious and very versatile. From stew, salsas, ketchup, juice, to eating them fried, they are a nice addition to the dinner table especially when you can open a can of homegrown tomatoes for a dish in the winter. They come in variety of different colors from yellow (my favorite), orange, black, purple, to red. Sizes range from cherry types to giant beefsteak types, with one slice covering a whole sandwich.

There are so many varieties of tomatoes and each year more become available. Newer or more modern cultivars as opposed to

heirloom varieties offer more disease-resistance, which can help cut down on the instances of disease in your tomato plantings, especially in wet, humid weather patterns like what we have been experiencing over the last few weeks across the State. Tomatoes can also be classified according to their growth habit. Determinate make great patio tomatoes because they reach a certain height and stop growing. They also typically set all their fruit within a couple of weeks' time once mature. Indeterminate tomato plants continuously grow and produce more fruit. These types do better if they are staked and are in a raised bed or even better yet an in-ground garden where they have more space.

Tomatoes grow best in well-drained, fertile soils but will do just fine in most types. Tomatoes also generally ideally grow in a slightly acidic soil with a pH of 6.2 - 6.8. Tomato plants require full sun, meaning the more sunlight they receive, they better they will perform. The planting site should receive at least 6 - 8 hours of direct sunlight per day.

For More Information:

Ohio State University Extension

<http://ohioline.osu.edu/hyg-fact/1000/pdf/1624.pdf>

Purdue University

<http://www.hort.purdue.edu/ext/HO-26.pdf>

Weed - Yellow Nutsedge (*Cyperus esculentus* L.)



Yellow nutsedge has erect, triangular-shaped, yellowish-green stems that resemble grass but is actually a sedge. It is a perennial plant, mostly found in turf areas, 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. Many times yellow nutsedge is identified by how quickly it grows, towering over the other turf plants, thus making it look like your turf has not been cut for a few days.

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.

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 those targeted growing weeds, and will not prevent further 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 relies heavily on reading and following label directions. When trying to control with a chemical it is important to always read the label and follow the application instructions before an application.

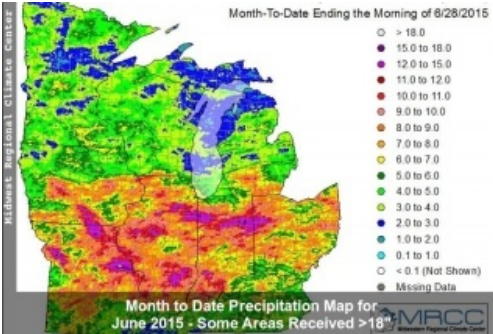
For More Information:

Clemson Cooperative Extension

<http://www.clemson.edu/extension/hgic/pests/weeds/hgic2312.html>

Hort Shorts »

Abundant Wet Weather...Starting to Feel like Swamp Thing



This spring and early summer has been extremely wet for the NW and northern parts of Ohio. This wetness also extends westward through Indiana, Illinois, Iowa and Missouri. Weather record maps are quite revealing. Some areas of NW Ohio have received greater than 18" of rain in the month of June. This rain fell on already saturated soils from April and May rains. The impact of all this water is very obvious when one looks at the corn and soybean crops in NW Ohio. The growth and development of these crops has been highly and negatively impacted by the continuously saturated soils. The impacts range from stunted growth and poor nutrient uptake to death of large areas of fields. This leads one to

wonder as to what will the impacts on landscape plants be in the near future. Some turfgrasses are beginning to die like the field crops. We need to remember these conditions later this year and maybe into next year as larger plants such as trees and shrubs will take longer to show the effects of the long-term saturated soils.

On the other hand, all of Ohio has not been receiving the same levels of rain as the NW region of Ohio. As one travels south through the state, less and less rain fell during the spring and early summer to the point that the southern edge of Ohio was a little on the dry side and welcomed recent rain events. This is a reminder that we have to be careful when making blanket statements about environmental conditions for Ohio. There can be major differences from the south to the north or east to the west portions of the state.

A Walk on the Wildside: Snakes in the Water



BYGL writer Curtis Young reported that he recently identified a COMMON WATERSNAKE for a curious homeowner. For many, seeing a snake in the water instantly brings to mind the venomous WATER MOCCASIN, also known as the cottonmouth. There are no water moccasins in Ohio, but there are plenty of common watersnakes. While the common watersnake is not venomous, it is still not a snake that should be picked as it will defend itself with a strong bite. Common watersnakes can grow up to 42" in length and have a bewildering array of variation in markings. Coloration of the watersnake ranges from pale gray to light brown with markings ranging from various shades of red to brown to black.

At times, the coloration of this snake can cause it to be mistaken for a NORTHERN COPPERHEAD, one of Ohio's 3 venomous snakes (the other 2 are the TIMBER RATTLESNAKE and EASTERN MASSASAUGA RATTLESNAKE). However, the northern copperhead has a distinct triangular head that the watersnake lacks, and is not common among well-settled areas. The common watersnake prefers streams, creeks, and other permanent bodies of water where it feeds on amphibians, fish, and small mammals. They are often seen basking on rocks, logs, or in branches near water.

A Walk on the Wildside: Goose No-Fly Zone



Ohio citizens have been taking notice of the many geese families milling around ponds and lawns. One of the management options for Canada geese that have become a nuisance is harassment, or in other words, agitating geese with a variety of tactics (noise makers, dogs, visual deterrents, predator decoys) until they take flight and vacate the area. This time of year, however, employing harassment techniques will be difficult if not futile because the geese are not flying. Why? First of all, the goslings are still learning how to fly and second, the adults are molting their flight feathers. Every year around the end of June into early July, adult geese replace their flight feathers, a process that lasts roughly 3

weeks. During this time the adults are unable to fly and considerable damage can occur. Restricting flightless geese from

areas can be done by herding geese out of the area then installing a temporary fence. In another week or so, goslings and adults will both be able to fly, and harassment can resume. For more information on managing nuisance geese, such as other management techniques, see OSU Extension FactSheet W-3-10, "Coping with Canada Geese: Conflict Management and Damage Prevention Strategies."

For More Information:

OSU Extension FactSheet W-3-10 Coping with Canada Geese

<http://ohioline.osu.edu/w-fact/pdf/0003.pdf>

Bug Bytes »

Milkweed Menagerie



BYGLers across the state are noticing milkweed beginning to bloom. With the appearance of this favorite of pollinator plants comes an assortment of insects that feed on plant, pollen, and nectar of this pinnacle in the garden!

Most butterfly enthusiasts are familiar with the necessity of milkweed plants (family *Apocynaceae*; subfamily *Asclepiadoideae*) in the lifecycle of the beloved MONARCH BUTTERFLY (*Danaus plexippus*). Milkweed is the sole host plant for the caterpillars of the adult monarch, which uses the alkaloid toxins (known as cardiac glycosides) in the milkweed's milky sap to become

unpalatable to would-be predators that quickly learn these bugs taste bad! (This is also a reminder: if you want butterflies in your garden, you must first have the host plant for the caterpillars and next be willing to let those caterpillars EAT those host plants without retaliation!)

But beyond the well-known monarch are many other milkweed-loving insects that feed on the plant and also accumulate these toxins as a form of protection from predation. These insects, including the monarch butterfly, often have warning coloration that advertises their foul taste so predators know to steer clear. Many exhibit red, orange, and black stripes or spots, flashy colors and patterns signaling toxicity. Among these brightly colored milkweed marauders are the RED MILKWEED BEETLES (*Tetraopes tetropthalmus*). These are oblong beetles with showy, red-orange elytra speckled with black spots. This long-horned beetle should not be confused with SWAMP MILKWEED LEAF BEETLE (*Labiidomera divicollis*) that are more round than oblong, and are shaped more like a very large ladybeetle. They have a black pronotum and, like the milkweed beetle, have yellow to red elytra with large black spots. It has been noted that the swamp milkweed leaf beetle will clip the veins of milkweed leaves to allow the milky sap to run out of the leaf prior to feeding to presumably lessen the amount of sap exuded at their feeding sites.

Along with these beetles you may also find LARGE MILKWEED BUGS (*Oncopeltus fasciatus*) and/or SMALL MILKWEED BUGS (*Lygaeus kalmii*). These seed-feeders are also brightly colored in oranges, reds, and black markings from nymphs through adulthood. While you may find these densely packed on milkweed seed heads and plants, they do not cause enough damage to seriously injure nor kill the plant. But another milkweed marauder may cause more noticeable damage, the MILKWEED TUSSOCK MOTH (*Euchaetes egle*). Like many caterpillars, milkweed tussock moth caterpillars feed gregariously on leaves in groups and can out-devour even the monarch caterpillar. In heavy years, they can defoliate whole patches of milkweed. These brightly colored tussock caterpillars have rows of short alternating black, orange, and white hairs framed by long black and white bristle-like hairs at the head and tail end of the caterpillar. Because the adult moth is not as showy and beloved as the monarch, some may be inclined to deny the tussock brood their food and try to control for them. Just remember, any treatment for moth caterpillars can harm monarch caterpillars as well!

For More Information:

University of Wisconsin

<https://www4.uw.m.edu/fieldstation/naturallhistory/bugoftheweek/milkweedcritters.cfm>

University of Wisconsin

<https://www4.uw.m.edu/fieldstation/naturallhistory/bugoftheweek/red-milkweed-beetle.cfm>

University of Arizona

<http://insected.arizona.edu/milkinfo.htm>

Iowa State University

<https://www.extension.iastate.edu/news/2005/jul/072201.htm>

Sunflower Head-Clipping Weevils



Sunflower Head-Clipping Weevil
Haplorhynchites aeneus

Damage caused by the sunflower head-clipping weevil (*Haplorhynchites aeneus*) is now appearing on coneflowers in southwest Ohio. This is a well-documented pest of cultivated and wild sunflowers (*Helianthus* spp.) in the Great Plains. The weevil is also known to infest other members of the Aster Family (Asteraceae = Compositae). Reports in the literature notes this native prairie weevil commonly feeds on the flowers of various members of the *Silphium* genus including compass plant (*S. laciniatum*), wholeleaf rosinweed (*S. integrifolium*), and prairie dock (*S. terzbinthinaceum*). Indeed, the weevil is sometimes called the "Silphium weevil" owing to its strong association with

plants in this genus. However, few reports in the literature mention coneflowers as a host which is a preferred host in Ohio.

The shiny black to brownish-black weevil is a little over 1/4" long with the measurement including an exceptionally long, curved snout. As with all weevils, this beetle's mouthparts are located at the end of their snout. The females insert their snouts into the flower stems to chew a ring of holes around the stem about 1" below the flower head. The flower stem is not completely cut; the damaged stem just breaks-over causing the flower head to hang from the stem on a thin strand of tissue.

Males and females move into the damaged flower head to feed on pollen and mate. The females then lay eggs on the dangling head. Eventually the flower head breaks from the stem and drops to the ground. Heavily de-flowered coneflower plantings look like a collection of soda straws. The eggs hatch once the flower heads drop to the ground and the weevil's grub-like larvae feed on the decaying flower head tissue. It is speculated that the female weevil's odd head-clipping behavior reduces larval exposure to plant defense chemicals and prevents other insects from competing with their off-spring in utilizing the flower head. Mature weevil larvae leave the flower heads and crawl into the soil to spend the winter. Pupation occurs the following spring to early summer and adults appear sometime in late-June to early July. There is one generation per year.

The best method for controlling this weevil is to remove and destroy the dangling flower heads as well as heads that have dropped to the ground. This will prevent weevil larvae from completing their development. If the flower heads are removed gently to avoid disturbing the hidden adults, the heads can be dropped into a bucket of soapy water to kill the adults. This will reduce the weevil population and thus reduce damage to flower heads. Insecticides are not a good option. First, there are no insecticides labeled for flowering landscape plants that include this weevil on the label. Second, since coneflowers attract a wide array of important pollinators, insecticide applications could potentially cause collateral damage to these "good bugs."

For More Information:

Kansas State University Fact Sheet

<http://entomology.k-state.edu/extension/insect-information/crop-pests/sunflowers/sunflower-headclipping-weevil.html>

Robbers Are on the Wing



Red-Footed Cannibalfly
Promachus rufipes

Few carnivorous insects can match the amazing aerial proficiency and brutal predatory behavior of ROBBER FLIES (family Asilidae) in their pursuit of prey. There are over a thousand species of robber flies in North America representing a wide range of forms and sizes. The largest sized species found in Ohio is the scary-looking (and named!) RED-FOOTED CANNIBALFLY (*Promachus rufipes*) which can measure over 1 1/4" long. The cannibalfly makes a loud buzzing sound as it flies and alert observers may hear the buzz periodically punctuated by a very loud "snap" which means the fly has committed an insecticidal act!

Cannibalflies have narrow bodies and long, dangling legs. Their stout thorax is packed with muscles to operate the wings and legs and appears slightly humped when viewed in profile. Each leg is tipped with two formidable tarsal claws that function like grappling hooks. In a smashing display of aerial acrobatics, the fly slams into its airborne quarry stupefying the hapless insect victim. The high-speed collision produces a snapping sound that may be heard several feet away. The fly then grasps its dazed prey with its claws, and uses its piercing-sucking mouthparts to inject saliva containing neurotoxic and proteolytic enzymes. The enzymes paralyze the victim and digest the internal tissues. The fly then lands, and sips the

life out of its victim.

Adults of all species of robber flies are predators and they will attack a variety of insects including bees, wasps, grasshoppers, dragonflies, damselflies, and sometimes each other. They often seize prey that is much larger than their own body size. Their larvae are also predaceous and live in the soil, or in decaying wood and other organic matter, where they feed on insect larvae. Thus, both the adults and larvae rob insects of their lives.

For More Information:

University of Kentucky Entomology Critter Files Fact Sheet

<http://www.uky.edu/Ag/CritterFiles/casefile/insects/flies/robber/robber.htm>

Hickory Gall Roundup



Phylloxerans (family Phylloxeridae) are aphid-like insects that produce some of the largest and showiest galls on hickory; they have been frequent subjects of past BYGL reports. The flattened, fuzzy, egg-yolk colored leaf galls produced by *Phylloxera caryaeglobulis* bisect the upper and lower leaf surfaces. They measure around 1/4" in length. The ball-like, single-chambered, bi-colored HICKORY PETIOLES GALLS, produced by *P. subelliptica*, sprout singly or in grape-like clusters from leaf petioles and leaflet midveins. They measure 1/4 - 1/2" in diameter and are greenish-white and mottled reddish-pink. Large numbers of galls on a compound hickory leaf may produce noticeable leaf

distortion.

However, hickory petiole galls are not nearly as damaging as the notorious HICKORY LEAFSTEM PHYLLXERA GALLS produced by *P. caryaeccaulis*. These galls are much larger, sometimes measuring almost 1" in diameter. They often have multiple chambers joined together into a single, lumpy gall-mass. Their formation and development may be highly destructive causing significant twig dieback.

Joe Boggs showed BYGLers images of a more diminutive leaf gall produced by an unknown Phylloxeran. The oblong, slightly fuzzy, 1/4" long galls were suspended from the underside of the hickory leaflets by a small stalk. Immature galls were reddish green and mature galls were light brown. Spent galls had openings at the top that were surrounded by short, finger-like projects making the galls look like something designed by Dr. Seuss.

A number of gall-midges (family Cecidomyiidae) also produce galls on the underside of hickory leaflets. The hickory midge-gall parade includes the ball-like BLUE-POWDER GALLS produced by *Caryomyia glauciglobus* and so named because of the fine, blueish-white powder covering their surface, as well as the tiny, light green and descriptively named HICKORY SPINY BALL GALLS produced by *C. spiniglobus*. Blue-powder galls and spiny ball galls occur as single galls randomly sprouting from the underside of hickory leaflets. This is unlike HICKORY AGGREGATE GALLS produced by *C. aggregata*. As their common and scientific names imply, these galls occur in clusters aligned along leaflet midveins. They are covered in short white hairs causing them to resemble hairy caterpillars.

Willow Gall Roundup



Willows are targeted by eriophyid mite gall-makers, gall-midges, and one of the few known sawfly gall-makers. The WILLOW REDGALL SAWFLY (*Pontania proxima*) is named for the deep red color of its bean-shaped galls. The sawfly may target a wide range of willow species and although the garishly red color makes the galls highly conspicuous, the sawfly apparently causes little to no harm to the overall health of its willow hosts.

WILLOW BLADDER GALLS (a.k.a. WILLOW BLISTER GALLS, WILLOW POUCH GALLS) are formed by a complex of eriophyid mite species in the genus *Aculus*. The taxonomy of the

eriophyids remains uncertain; consequently galls may vary in color, size, shape, and position on the leaf blades. However, most galls generally appear as overlapping clusters of beadlike deep red to reddish-green growths on the upper leaf surface. Galls may be found on several willow species with black willow (*Salix nigra*) appearing to be particularly susceptible. The same is true for WILLOW CATKIN GALLS produced under the direction of the eriophyid, *A. aenigma*.

The mite highjacks the flower parts to form gnarled, green, broccoli-like growths. Once the mites complete their development in early summer, the galls become grayish-black and remain evident throughout the season.

Arguably, one of the weirdest galls found in Ohio is produced on willow under the direction of the gall-midge, *Rhabdophaga strobiloides* (family Cecidomyiidae). The gall's appearance isn't weird; it looks like a pine cone. However, finding a "pine cone" on a willow is weird. As the common name implies, the WILLOW PINECONE GALL, which is sometimes called the "pine cone willow gall," closely resembles a pine cone with closed seed scales.

Females initiate gall formation when they lay a single egg in terminal buds in the spring. Chemicals injected by the female coupled with chemicals exuded by the egg and then by the resulting larva (maggot) direct the stem tissue to stop elongating and the nascent leaf tissue to broaden and harden into the shape of scales on a pine cone. Early-season galls are ball-like; late-season galls are cone-shaped. Slicing the gall open lengthwise will reveal a single, midge fly larva housed in an elongated chamber at the center of the gall structure and protected by multiple layers of cone-like scales. Early instar larvae are yellowish-white but they become yellowish-orange as they molt through successive instars. Once larvae complete their development, they pupate and spend the winter inside their protective chamber. New adults emerge from the top of the gall in early spring to initiate the formation of new galls.

Windshield Wipes



Galls created by Strawberry Cylindrical Gall Wasp

BYGLers also ran into a few other insect pests this week

including: Strawberry plants with swollen stems were brought into an extension office this week. The galls were dissected to reveal a hidden network of larval cells much like a string bean, each containing a plump larva with visible mandibles. It was determined that this gall was likely produced by the Strawberry Cylindrical Gall Wasp, also known as the STRAWBERRY LEAF PETIOLE GALL (*Diastrorhynchus fragariae*), in the family Cynipidae. It appears this tiny wasp lays its eggs in a row inside the stem or petiole of the strawberry plant. As the larvae develop inside the stem, the stem swells and the tissue forms a multichambered cylindrical green to reddish-brown gall.

Information on this species was limited, but a publication from 1915 revealed

some information. It was described as a "rich reddish-brown gall and bears a pubescence, varying with that of the petiole from which the gall originates." The article goes on to explain that leaves withered prematurely and the galls and the enclosed larva or pupa overwintered in the withered stems and adults emerged in the following May (in Canada in 1915, this may differ today).

For More Information:

Cosens, A. 1915. Notes on the Strawberry Leaf Petiole Gall. The Canadian Entomologist, 47(11), November 1915 pp.354-355

<http://journals.cambridge.org/action/displayFulltext>

Disease Digest »

Lurking Around the Corner: The Plant Destroyer



Vinca (*Catharanthus roseus*) decline due to phytophthora root rot

The unending rain and cool temperatures have created the perfect conditions for plant diseases to take hold. This week, BYGLers reported PHYTOPHTHORA ROT (*Phytophthora* spp.) in vinca and petunia. Phytophthora, whose literal translation means "plant destroyer" is a water mold, a fungus-like organism that causes root and crown rot of annual and perennial herbaceous plants, as well as woody trees and shrubs. This is a notorious disease that, once in the soil, remains and re-infects susceptible species or even whole families of plants, sometimes for several years. It needs water to spread and so, in this rainy year, it is no surprise that Phytophthora is being reported and may run rampant.

As Phytophthora destroys the root or crown of the plant, the water supply from root to foliage is cut off, wilting and killing the plant. Symptoms appear like drought stress with leaves turning yellow, reddish, or off-shades of green as they wilt and die. In such rainy conditions, drought symptoms should be very suspicious, so consider possible rot. However, because of the absolutely saturated soil conditions, plants that may be infected could still be hanging on, many showing no symptoms of wilting because the soils are holding so much water that the plants are still managing to absorb it.

Homeowners and landscapers alike will be very surprised when dry weather actually arrives and many plants suddenly collapse! This is because the roots or crown are not healthy enough to support the plant under normal soil conditions, so be prepared if plants start to keel over once it warms and dries out. On woody ornamentals, you may find a red to cinnamon

discoloration or streaking in roots or stems as the plant declines. On annuals, often Phytophthora is first found in the crown and will have white healthy looking roots, even though the plant is infected. The symptoms may be confused with those of other diseases and so, to confirm disease organisms in your plants, samples should be sent to the C. Wayne Ellett Plant and Pest Diagnostic Clinic for confirmation. See ppdc.osu.edu for more details.

This is a very challenging disease to manage in the landscape. Plant rotation is a must. Do not re-plant the same species or even plants in the same family as the organism can survive many years in the soil. Remove infected plants quickly to prevent spread and inoculum buildup. Suggestions for replacing affected petunias or vinca include marigolds, zinnia, and begonias, as these are less susceptible, but not immune. Prevention includes good soil drainage and not overwatering in practice, but this weather has made it difficult for preventing Phytophthora rot.

For More Information:

Root problems on plants in the garden, OhioLine

<http://ohioline.osu.edu/hyg-fact/3000/pdf/3061.pdf>

Phytophthora in bedding plants: Utah State University

<http://utahpests.usu.edu/ipm/html/ornamentals/landscape-insects-and-diseases/crown-rot/>

University of Tennessee

<https://extension.tennessee.edu/publications/Documents/W289-D.pdf>

University of Connecticut

http://www.ladybug.uconn.edu/factsheets/tp_05_phytophthora.html

North Carolina State University

<http://www.ces.ncsu.edu/depts/pp/notes/oldnotes/odin13/odin13.htm>

A Storm of Scab



Apple scab fungal colonies, olive drab gray-green spots on the leaf of 'Snowdrift' crabapple

The wet, moist weather during the past month, combined with the spores released by the fungus *Venturia inaequalis*, created the perfect storm of disease for apple scab. The primary infections occurred weeks ago when spores from last year's infected leaves, were either wind-blown or splashed by rain onto the new growth of nearby trees. Once there, the fungal spores need a film of water to germinate and start new infections. This fungus may infect and colonize the leaves, fruit, petioles, and blossoms of the tree, but symptoms are most commonly observed on the leaves and fruit. Later in the growing season, these primary infections produce secondary spores, which will then infect other leaves and

fruits. These secondary infections will cause additional infections to develop on susceptible plants and this cycle will continue to occur, throughout the growing season, during wet periods.

The result of all this precipitation, which keeps the leaves of both apple and crabapples wet, will be a challenging year to try and manage apple scab. Already evident in certain crabapples, especially those which are very susceptible to this fungus, is the phenomenon known as sheet scab. Sheet scab occurs when apple scab infections are so numerous, that they cover the entire leaf surface "like a sheet". This causes the developing leaves to be severely distorted, often with necrotic blotches and covered with drab, olive gray-green mold. These infections cause the leaf to eventually turn yellow and then drop off.

Of course the most successful way to combat this disease is to use genetics to select and use trees that are resistant to the apple scab fungus. Preventing these early infections is the single greatest step towards successfully controlling later infections; unfortunately, once primary infections occur, it will be very difficult to prevent secondary infections.

What can be done at this point? Nothing can be done to alter or protect the already infected leaves. While it is true that leaf-less trees are extremely ugly and a landscape liability, they also make it impossible to sit in the shade and sip cool drinks. However, there is no need to panic because the apple scab fungus has never been shown to outright kill apple or crabapple trees. Yes, using fungicides may help protect new the foliage but only if has not already been infected by the apple scab fungus. This preventative fungicide approach will also require multiple applications to continuously protect the leaves as they expand; however, the best way to manage this fungus is to use genetic resistance to help in the battle against apple scab.

For More Information:

"Apple Scab of Flowering Crabapples" factsheet from Purdue University

http://www.ces.purdue.edu/extmedia/BP/BP_39_W.pdf

Double Whammy Downy!



Erik Draper reported visiting a vegetable farm where the grower expressed concern over the collapse of his field of cucumbers. Sure enough, just as Erik had feared, downy mildew (DM), pathogen *Pseudoperonospora cubensis*, had begun its annual rampage against cucurbits in Geauga County. However, while on the way to inspect the cucumbers, the grower asked Erik to briefly take a look at something he didn't recognize on some muskmelon/cantaloupe leaves. OUCH! Double whammy time because that same DM disease had progressed on and had begun to infect muskmelons too. DM is an extremely virulent, fungal-like pathogen, which rapidly infects and kills only the foliage of

plants in the Cucurbitaceae family. In most gardens, cucumbers and pickles are the main crop affected by this disease; however, the next most susceptible vine crop after cucumber is cantaloupe, followed by pumpkins and winter squashes and least susceptible is watermelon. The real problem with cantaloupes is the rapid death and loss of the protective foliage, which shades the developing and ripening fruit. The exposure of all fruit to direct sunlight results in sunburn and the loss of the almost mature fruit due to overheating, while sunscald severely reduces the quality of any developing fruit.

On muskmelons, downy mildew is much more difficult to accurately identify; contrastingly, the leaf lesion appears nothing like the easily identifiable, checkerboard-like appearance of downy mildew on cucumber leaves. Leaf infections appear initially as yellow spots or flecks, with the chlorotic spots quickly turning necrotic and then the dead tissues begin to coalesce. At first, just the older leaves begin to appear affected; however, these leaves quickly turn yellow, followed by brown causing the leaf blade to roll upward as it dies and dries out. As the older leaves begin to collapse, the disease symptoms progressively move onto younger leaves, constantly moving out toward the ends of the vine. The leaf petiole and the vine remain untouched and green, but eventually, the entire plant collapses due to the rapid loss of the leaves. In moist, humid conditions, on the underside of yellow leaf lesions, there may appear a layer of spores, which may be white to purplish to almost black in color.

This foliar disease can be managed but it requires a strict adherence to a fungicide application program. Unfortunately for homeowners, when downy mildew symptoms are easily recognized on the plants, it is usually too late to do anything about this disease. However, for commercial growers, if symptoms are detected early, using specific fungicides makes it possible to delay the plant's demise just long enough to get the crop picked. The same fungicides which work on cucumbers are registered for use on muskmelons too. Commercial fungicide recommendations from Dr. Sally Miller, State Vegetable Pathologist, The Ohio State University, for Ohio growers can be found at <http://u.osu.edu/miller.769/>

For More Information:

"Managing Downy Mildew in Organic and Conventional Vine Crops"

<http://ohioline.osu.edu/hyg-fact/3000/pdf/3127.pdf>

"Managing cucurbit downy mildew in your garden"

http://msue.anr.msu.edu/news/managing_cucurbit_downy_mildew_in_your_garden

Turf Tips »

Favorable Weather for Ducks and Grubs

This rainy weather is for the ducks! It may also be favorable weather for the establishment of white grubs in turfgrass. Several BYGLers have reported observing adult activity of JAPANESE BEETLES (*Popillia japonica*), NORTHERN MASKED CHAFER BEETLES (*Cyclocephala borealis*), and EUROPEAN CHAFER BEETLES (*Rhizotrogus majalis*). These newly emerging adults differ in their individual species behavior, but ultimately their main activities are to find mates, mate and lay eggs for the next generation. All grub adults lay dehydrated eggs that must absorb moisture from the surrounding soil in which they were laid in order to begin development. Eggs laid into dry soil or soil that rapidly loses water due to droughty conditions have a poor chance of survival and are less likely to produce damaging populations of white grubs in those turfgrass areas. However, a shortage of moisture in Ohio soils is not going to be a problem this year and the success of egg survival could be high in many regions.

How does one know if they should have concern for white grub populations? That is a bit of a tricky question to answer. Not all of the white grub-producing beetles (family Scarabidae) are as obvious in their adult activities as the Japanese beetle. Japanese beetles are day-time fliers. They feed as adults on a long list of host plants including some prominent landscape plants such as roses, linden trees with the exception of silver linden, grapes, hollyhocks, rose-of-Sharon, flowering cherries and crabapples. They have striking coloration with iridescent green head and thorax and coppery wing covers. And usually when you find one, you find many. Both of the chafer beetles mentioned above are night-time fliers,

are light-brown in coloration, and neither eats as an adult insect. So unless you are out at night with a flashlight or running a light trap, you might not notice the chafers or how abundant they might be in an area. Curtis Young has reported in the past that most of the severe white grub populations that he has identified recently have been northern masked chafers. Dave Shetlar reported large captures of masked chafers in his light trap in Columbus last week. And European masked chafer is commonly encountered in NE Ohio. Since one might not witness the presence of the chafer adults, past history of damage by the chafer white grubs or the discovery of springtime populations of chafer white grubs might be the only indications of the need for preventative treatments.

Turfgrass areas that have a history of grub damage should be targeted with preventative applications of one of the neonicotinoid insecticides such as imidacloprid (e.g. Merit), halofenozide (e.g. Mach 2), clothianidin (e.g. Arena), or thiamethoxam (e.g. Meridian). Using any of these products now will reduce the grubs, as well as many other turfgrass feeding insects.

For More Information:

Penn State University Factsheet on Japanese Beetles

<http://ento.psu.edu/extension/factsheets/japanese-beetle>

Ohio State University Extension Factsheet on Chafer Beetles

http://ohioline.osu.edu/ent-fact/pdf/ENT_51_14.pdf

Michigan State University Extension Factsheet on European Chafer

<http://msue.anr.msu.edu/resources/european-chafer>

Industry Insight »

We Need Your Help: Yellow Poplar Weevil Survey



Outbreaks of the yellow poplar weevil (*Odontopus calceatus*) have been a frequent topic of past BYGL reports. Indeed, we noted in BYGL 2015-09 (06/04/15) that damaging populations of this native weevil were being observed in parts of southern, central, and northeast Ohio. High populations are also being observed in West Virginia prompting Richard (Rick) Turcotte (Supervisory Entomologist, USDA Forest Service Field Office, Morgantown, WV) to initiate a survey to document locations of the outbreak by counties rather than general geographical regions.

Survey data in Ohio is being collected and compiled by Tom Macy Forest Health Program & Special Projects Administrator, ODNR Division of Forestry). We are asking you to send an e-mail message to Tom with your answers to the following survey - you can complete the survey questions by filling in or deleting after copying and pasting the survey into your e-mail message. Tom's e-mail address is: thomas.macy@dnr.state.oh.us

YELLOW POPLAR WEEVIL (YPW) SURVEY

Surveyor's Name:

County:

- (1) Yes / No: YPW is present in the county (absence of YPW is just as important as presence).
- (2) Yes / No: YPW is widespread in the county.
- (3) Yes / No: YPW is scattered in the county.
- (4) Estimated severity of YPW defoliation: LOW (less than 50%) / HIGH (more than 50%).
- (5) YPW Hosts: Yellow Poplar / Sassafras / Magnolia / Other
- (6) If "Other," please list host plants:

What to look for:

- YPW is most often found on yellow poplar (= tulip poplar; tuliptree), magnolia (all species), and sassafras.
- Adults feed on leaves and the larvae feed within leaves as leafminers producing elongated tan to brownish-black blotch mines. Adult feeding damage appears as half-moon shaped holes in the foliage. Numerous feeding holes can cause leaves to wilt, turn brown, and die.
- Damaged yellow poplar and sassafras leaves often turn reddish-brown but remain attached to the tree. Damaged magnolia leaves may also remain attached but become cup-shaped and turn light brown to brownish-black.
- Heavily damaged leaves will drop from infested trees; look for fallen leaves.

For readers who access the BYGL via e-mail, images are available in the current issue of the BYGL posted on the Buckeye Yard and Garden onLine website <http://bygl.osu.edu/> . To view images, click on the date in the upper left corner of the opening page then then click on this report.

For More Information:

OSU Extension "Bug Doc" Fact Sheet

<http://bugs.osu.edu/~bugdoc/Shetlar/factsheet/ornamental/FSyellowpopweevil.htm>

University of Kentucky Entomology Fact Sheet

<http://www.ca.uky.edu/entomology/entfacts/ef414.asp>

WeatherWatch »

Weather Update

The following weather information summarizes data collected at various Ohio Agricultural Research Development Center (OARDC) Weather Stations spanning the dates from January 1 - June 30, 2015, with the exception of the soil temperatures which are readings from Wednesday, July 1, 2015 at 11:05 a.m.

Ditto on last week's weather report – rain, rain and more rain. Precipitation amounts reported by BYGLers were once again measured in inches with some areas reporting 5"+. In areas of NW Ohio where soils were already saturated, river banks overflowed and fields resembled lakes. Roads were closed and neighborhoods in the greater Toledo area were underwater and a record number of basements were flooded making the national news. Curtis Young reported many small communities experienced flooding in their downtown areas in NW Ohio. The city of Paulding was isolated from the surrounding areas when water levels rose, almost as if it were an island. Not surprising, many areas broke monthly precipitation records for June, especially in the northern portion of the state. Saturday's (June 27, 2015) storm brought rain and high winds in Lucas County. Amy Stone reported that in addition to major flooding, there was tree damage and power outages which added insult to injury.

Weather Station	Region of Ohio	Ave. High Temp. F	Ave. Low Temp. F	Total Precip."	Normal Precip."	Soil Temp. F 2"/3"
Ashtabula	NE	49.8	30.9	16.15	16.9	75.61/76.28
Wooster	NE	53.1	32.9	18.44	20.1	67.86/67.56
Hoytville	N	52.1	32.3	18.50	16.2	75.11/70.89
Columbus	Central	55.9	36.7	22.67	22.3	76.06/73.20
Piketon	South	58.6	35.6	23.17	21.4	83.22/79.44

For More Information:

OARDC Weather Stations

<http://www.oardc.ohio-state.edu/newweather/>

Coming Attractions »

Southwest Ohio BYGLIVE! Diagnostic Walk-Abouts



The July 2015 Southwest Ohio BYGLive! Diagnostic Walk-About for Green Industry professionals will be held from 12:00 - 3:00 pm. on Monday, July 13, at Glenwood Gardens, 10397Springfield Pike, Woodlawn, 45215. Participants will walk-about this beautiful Great Parks of Hamilton County location with Joe Boggs and Julie Crook (OSU Extension) to look at plants,



plant pests, diseases, and other points of considerable interest. ISA Certified Arborist Credits, ONLA OCNT Credits, and Landscape Architecture Continuing Education System (LA CES) CEU's for Landscape Architects will be

available. Visit the following website for registration information: <http://go.osu.edu/zs7>

Save the Date - Northwest Ohio Green Industry Summer Session - August 5, 2015

Save the Date - Northwest Ohio Green Industry Summer Session - August 5, 2015. The event will once again be held at Owens Community College. Stay tuned for a link to the registration materials.

Wildlife Nuisance Class

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

The OSU Green Industry Short Course, The Ohio Turfgrass Foundation Conference and Trade 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.

Byglosophy »

"An agricultural adage says the tiny animals that live below the surface of a healthy pasture weigh more than the cows grazing above it." - *Carol Williams*

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