BUCKEYE YARD AND GARDEN LINE 2014-23
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From: Curtis E. Young (Lead editor and contributing author) and Danae Wolfe (Co-editor and contributing author).

Contributing authors: Pam Bennett, Joe Boggs, Jim Chatfield, Julie Crook, Erik Draper, Gary Gao, Denise Johnson, Jacqueline Kowalski, Ashley Kulhanek, Cynthia M. Meyer, Amy K. Stone, Nancy Taylor, Marne Titchenell, Danae Wolfe, and Curtis E. Young.

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This is the 23rd 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.

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1. PLANTS OF THE WEEK.
*ANNUAL - EUPHORBIA (*Euphorbia* hybrid). This annual has grown in popularity as more and more people become familiar with the heat tolerance as well as the bloom power. It's easy to grow and despite its delicate appearance, it's a very tough plant. In the field trials at the Gateway Learning Gardens in Springfield, there have been several cultivars over the years and all have done well in hot dry summers as well as cool, damp growing seasons. It does not seem to be bothered by deer as well.

Part sun to full sun is recommended, however in our trials, we have been planting some annuals that normally like full sun in the shade (70% shade cloth) with great success. This is one of them that looks pretty good in the shade. In the flower bed, the plant is a 1.5' by 1.5' mound depending on the cultivar. It doesn't compete with other plants when crowded in containers and has a tendency to meander through the container, giving a very nice filler appearance. The plant is covered with fluffy clouds of white flowers that bloom all summer without the need for deadheading.

There are many cultivars on the market and many have very little noticeable difference. 'Breathless Blush' has sort of a pinkish cast overall; 'Diamond Frost' is compact with green stems and white flowers. We have a new one in our trials this year, 'Diamond Delight', which has great potential for competing in container gardens. It's tighter and more compact than 'Diamond Frost' and is loaded with flowers.

**Author: Pamela J. Bennett**

*PERENNIAL - PRAIRIE DOCK (*Silphium terebinthinaceum*). This bold Midwest native plant makes quite a statement in a prairie planting or in the back of a perennial border. The yellow daisy-like flowers appear on stems that are around 9 - 10' tall and sway beautifully in the wind. The flowers bloom from August through October. The large leaves form a basal rosette and are up to 2' long and about 1' wide. The width of the plant is around 3'. The leaves are thick with a sandpapery texture, especially on the underside. In open prairies, the leaves of this plant orient themselves north and south to reduce the heat load.

This may not be the plant to put in a small space garden but if you have a large perennial border, it's perfect. The flowers attract bees and hummingbirds and the seeds attract goldfinches and other birds. There is a long taproot which makes it somewhat challenging to transplant so start with seeds or small seedlings. It takes a little while for this plant to establish but once it does, it will be around for a long time. Prairie dock tolerates poor soils and is drought resistant.

**Author: Pamela J. Bennett**

*WOODY - BEECH (*Fagus grandifolia* and *Fagus sylvatica*). With the talk below about the beechdrops parasitic plant, let's focus this week on beech (*Fagus*). Beech trees are among the most glorious woodland trees, providing year-long grace. Beeches are the very definition of a sylvan glade. In winter the gold and silver remnant leaves of our native American beech (*F. grandifolia*) with its elephantine smooth gray bark, in spring its slender leaf buds giving rise to light green leaves, and through the seasons the grand stature of the tree and beechnut wildlife food, all are a sight to see. European beech (*F. sylvatica*), comes in many horticultural forms, from copper-leaved beech, to tricolored beech (plant in protected sites), to weeping beech, to the much-admired medium-sized rounded fernleaf-beech, a favorite of OSU Secrest Arboretum’s Joe Cochran, who particularly mourned the loss of a fernleaf beech adjacent to the
water garden during the Wooster Tornado of 2010. Joe, and Secrest, recovered quickly and after cleaning up the fallen beech and other trees, quickly commenced...planting more trees. And, he has the added attraction of two mature fernleaf beeches near the Arboretum Field Station, and the surety that soon they will display great golden yellow fall color.

Author: Jim Chatfield

*VEGETABLE - MUSKMELON (Cucumis melo var. reticulatus). In the US, the wonderful, delectable fruit of the muskmelon also goes by the names of cantaloupe, melon, sweet melon, rockmelon, etc. Most varieties of cantaloupe will differ in days to reach maturity, as well as size, weight, netting or skin texture and the prominence or lack of grooves or ribs. The first documented reports of this fruit date back to the Nile River Valley in Egypt because ancient Egyptians and Romans are known to have grown the melons. Later, in the 1700s, cantaloupe was being cultivated on a large scale in Italy. It is rumored that it was the city of Cantalupo di Sabina from which cantaloupe derived its name.

Being related to tropical plants, muskmelons require warm soil temperatures, ideally above 70F and prefer a relatively long and warm growing season too. Muskmelons grow best on well-drained, sandy loam soils with a pH between 6.0 and 6.5. In order to produce good fruit, bees and other pollinators must work the flowers. After pollination and fertilization, cantaloupe requires approximately 35 - 45 days for fruits to mature, of course, it will depend upon ambient air temperatures. As the fruit matures, the skin netting becomes coarse and raised, and the background color of the fruit turns from green to a creamy-yellow. Mature fruit will "slip" or release from the vine, with a gentle tug and the sugar content will be at its highest. Cantaloupe may be eaten as fresh fruit, in a salad or simply as a dessert; especially, when the seed cavity has been filled with vanilla ice cream or frozen custard!

Author: Erik Draper

*WEED - GIANT HOGWEED (Heracleum mantegazzianum). Extension offices are getting an increased number of giant hogweed calls in recent weeks most likely due to a report of the enormous weed in Geauga County.

Giant hogweed is a biennial in the carrot or parsley family and can be easily identified by its large, deeply lobed leaves that can grow up to five feet wide. Large compound umbel white flowers can reach two and half feet in diameter. Green stems are hollow with extensive purple splotches and prominent white hairs. Stems can reach two to four inches in diameter and ten to fifteen feet in height.

Though once widely used as an ornamental, giant hogweed is now listed as a noxious weed on both federal and Ohio lists, making it unlawful to sell. The greatest cause for concern is the plant’s ability to cause blistering burns on the skin. The sap of giant hogweed contains furanocoumarins, which react with ultraviolet light (sunlight) to cause the burns.

The plant most commonly misidentified as giant hogweed is cow parsnip (Heracleum lanatum). Cow parsnip leaves and flowers grow to only half the size of giant hogweed. In addition, cow parsnip stems are green with no purple splotches. Other plants mistaken for giant hogweed include Angelica (Angelica atropurpurea) and poison hemlock (Conium maculatum). Angelica has smooth, hairless, purple stems and softball-sized, round greenish-white or white flowers and poison hemlock grows to only four to nine feet in height, and has small fern-like leaves and
hairless stems. Additionally, poison hemlock flowers are small and white, and arranged in numerous clusters on all branches.

Control and management of giant hogweed usually requires a combination of digging, mowing, cutting, grazing, and/or herbicide application. Cutting and bagging the flower heads before they go to seed can also be an effective control measure to prevent the spread of seeds. Once a plant has been removed from the ground, be sure to place all plant parts in a heavy trash bag to avoid direct skin contact. Like most invasive plants, control of giant hogweed can take as many as five years depending on the degree of infestation. Continuous and persistent management is usually required.

Before attempting to remove giant hogweed, it’s vital to take proper precautions to avoid direct skin contact with the plant’s sap. Wear protective coveralls, rubber gloves, eye protection, and protective shoes.

Author: Danae Wolfe

2. HORT SHORTS.

A. MEET THE EDUCATOR - PAMELA J. BENNETT. Pam is the State Master Gardener Coordinator and Horticulture Educator for Ohio State University Extension in Clark County (Springfield) and has been in Extension since November 1992 (she's old!). Pam's background is in landscape horticulture and human and community resource development. She started in Clark County as a Program Assistant and was in Clark/Greene counties for a year and then came back to Clark County as an Extension Educator. In 2006 she was appointed as State Coordinator for the MGV program, splitting her duties between this and Clark County.

Pam's focus area is consumer horticulture and she enjoys teaching about anything horticulture. She is a member of the Extension Nursery Landscape and Turf Team and has written for BYGL since 1993 (once again, she is old). Her area of research is herbaceous ornamentals with trials of annuals and ornamental grasses at this time. Plans for the future are to expand the perennial trials. She also has 125 MGVs in Clark County who have a variety of projects with the main project, the 5-acre Gateway Learning Garden. She has her work cut out for the next few years as they are in the process of moving this garden!

Pam frequently writes for popular gardening magazines and is a regular writer for the Ohio Gardener. She has a column in the Dayton Daily News which serves 8 counties in southwest Ohio. Recently, she finished a book with co-author Maria Zampini that will be released January 2, 2015. The book, Garden-pedia can be pre-purchased on Amazon at the following site: [http://www.amazon.com/Garden-pedia-A-Z-Guide-Gardening/dp/0989268845] and on Barnes and Noble at: [http://www.barnesandnoble.com/w/garden-pedia-pamela-bennett/1119972428?ean=9780989268844]. See (book announcement article) for more information.

Author: Pamela J. Bennett

B. NEW BOOK ANNOUNCEMENT - GARDEN-PEDIA! Coming January 2, 2015, the answer to all your questions about gardening definitions will be available! Garden-pedia by co-authors Pam Bennett and Maria Zampini covers gardening definitions from A-Z and goes a step further
than just defining a term. The authors provide more detail on what the term means as well as how it is used in gardening.

Pam and Maria have a combined 77 years (they are both old!) of experience in horticulture. Maria is a 4th generation nurserywoman and is an incredible plants-woman. She developed the concept as a book that can help entry-level employees in the nursery industry. Pam added the idea of creating a resource to help new Master Gardener volunteers as well as new gardeners and the book was born. In addition, half of the proceeds of the book go to the OSUE MGV program. Watch for its release in January! Pre-sales are available on Amazon.com at: [http://www.amazon.com/Garden-pedia-A-Z-Guide-Gardening/dp/0989268845].

Author: Pamela J. Bennett

C. RETURN OF THE MONARCH. The last few years have been met with noticeable declines in local monarch butterfly (Danaus plexippus) populations. Fortunately, the monarch seems to be making a return this season.

Eastern North American populations of monarchs migrate 2,500 miles to overwinter in the mountains of Mexico. What's more fascinating is the fact that their migration back to the US in the spring and summer takes place over four separate generations of butterflies. In February or March each year, butterflies that overwintered in Mexico come out of hibernation to find a mate. The female butterflies then begin their journey northward and eastward to find a place to lay her eggs. In March or April, butterflies lay eggs on milkweed plants and after about 4 days, the egg will hatch to reveal the first of five larval instars, or stages. The caterpillar feeds and grows for about two weeks before pupating then spends an additional 9 - 14 days as a chrysalis. When the chrysalis is fully developed, the monarch butterfly will emerge. Newly emerged butterflies will once again begin the reproductive process by finding a mate, migrating northward and eastward, and laying eggs. The second generation of monarchs will emerge in May or June and the third generation in July or August. Each new butterfly generation lasts only 2 - 6 weeks, before reproducing and dying.

The 4th generation of monarch butterflies, however, is very different than the three previous. In early fall, the fourth generation of monarch butterflies emerges from their chrysalides and begins the long journey south to overwinter in Mexico. It takes three generations of monarchs to migrate north, but only one generation makes the treacherous journey south in the fall. The future of monarch populations relies on the ability for this fourth generation to safely make it to Mexico.

There are many possible factors that have contributed to the decline of the monarch butterfly in recent years, but research points to habitat loss as one of the primary culprits. Monarch butterflies are specialist insects, meaning they rely on a particular plant to complete their lifecycle. Monarch butterflies can only lay their eggs on milkweed. As a migratory species, it's vital that milkweed be available along the monarch's entire migratory route for reproduction to be successful.

While loss of milkweed populations along migratory routes has contributed to monarch decline, so too, has loss of overwintering habitat in Mexico. During the winter of 1996 - 97, there were over 20 hectares of overwintering sites occupied by monarch butterflies in Mexico. This past winter, that area reached an all-time low of just 0.67 hectare. Heavy rain and freezing temperatures can cause massive mortality in overwintering monarch populations. In addition, illegal logging and pests damage precious habitat in Mexico.
As a homeowner, you can lend the monarch butterfly a helping hand by planting milkweed and other important nectar plants in your garden. Nectar plants include cosmos, Joe Pye weed, and boneset. Also consider creating a certified monarch waystation by offering all the essentials that monarch butterflies need to thrive. To learn more about monarch waystations, visit [http://www.monarchwatch.org/waystations/].

Author: Danae Wolfe

D. BEECHDROPS: A PARASITIC PLANT. August is the time that woodland walkers notice the tawny brown to creamy-white, branched stems and flowers of beechdrops (Epifagus virginiana), a small 6 - 20" plant that becomes more noticeable as it grows from its earlier half-inch size and that parasitizes the roots of American beech. Beechdrops does not possess chlorophyll and does not photosynthesize, and receives its carbon energy source from beech trees alone. Beechdrops have no green tissue, just the slender brown stalks and purple-brown inconspicuous two-lipped flowers, and specialized "haustoria" that penetrate beech roots to extract its nutrients. *Epifagus virginiana* is a member of the Orobanchaceae (the broomrape family), which has many genera and species which are parasitic on plants. Fortunately, beechdrops are annual plants and do no real damage to the overall root system of beech trees.

Another plant that is often termed parasitic to trees is also commonly found this time of year, namely Indian pipe (*Monotropa* spp.). It is "often termed" parasitic to plants, but in actuality it is not. In a wondrous twist of nature, *Monotropa* is actually a "myco-heterotrophic" organism which is part of a tripartite symbiosis in that it is a "non-photosynthetic plant that obtains carbon from mycorrhizal fungi." The *Monotropa* is in fact parasitic on the mycorrhizal fungus which derives its carbon from the mycorrhizal plant it colonizes. Yikes.

Author: Jim Chatfield

3. BUGBYTES.

A. A CAPTIVATING ORBWEAVER SPIDER. Spiders are a frequent BYGL topic for good reason; they are powerful pest management bio-allies. There are over 600 spider species found in Ohio and all will feast upon insects and other arthropods. Those spiders that produce webs are very apparent at this time of the year, particularly the orbweavers (Family Araneidae). Their common name comes from their circular-shaped webs. One of the largest and most spectacularly colored orbweavers found in Ohio is the BLACK-AND-YELLOW GARDEN SPIDER (*Argiope aurantia*). The spider has several common names including black-and-yellow *Argiope* for its colors and genus; the corn spider for its common web location suspended between cornstalks; and writing or zigzag spider for the vertical structure of dense, course silk, called a "stabilimentum," near the center of their orb webs.

Female black-and-yellow garden spiders often measure over 2" from the tips of their legs. The legs have variable banding patterns with black bands broken by peach or tan-colored bands. The triangular-shaped cephalothorax is sheathed in silvery colored hairs. The large abdomen has an elongated oval shape and is pointed at the rear. There are two prominent, shoulder-like humps on top of the front end of the abdomen just behind the cephalothorax. The abdomen of most members of the species is covered in an intricate pattern of inky black and yellow markings which are responsible for the spider's "black-and-yellow" common names. However, a small percentage has dark brown rather than black markings.
As with all orbweavers, webs produced by this spider are intricate structures involving both sticky and non-sticky silk. Non-sticky silk is used for "radial threads" which radiate from a central point like spokes on a bicycle wheel. The non-sticky silk is also used for "frame threads" which encircle the web like a bicycle wheel to hold the radial threads in place and to attach the web to supports such as plant stems. "Spiral threads" are composed of sticky silk arranged in a spiral pattern emanating from the center of the web; it's the sticky silk that captures the spider's prey. Black-and-yellow garden spiders also construct a conspicuous vertical stabilimentum extending downward from the center of their web and the zigzag pattern of this dense webbing gives rise to the names "zigzag spider," and "writing spider."

Black-and-yellow garden spiders have presented entomologists with two puzzles. First, what is the exact function of the stabilimentum? Second, how can such a large, brightly colored spider hanging in the center of its web in the middle of the day be so successful in snaring insects with their web? It would be like sheep running to wolves. The answer to both questions may be connected to understanding insect vision. Many insects are capable of seeing light in ultraviolet wavelengths that are invisible to our eyes, and certain flowers that appear white to our eyes actually reflect intricate patterns of ultraviolet light, presumably to attract insects. Research has shown that when some Argoipe spiders and their webs are viewed under ultraviolet light; the spider disappears, the web disappears, but the zigzag stabilimentum blazes like a giant neon "eat here" sign. Insects may be lured to their doom thinking they are visiting the mother of all flowers!

Author: Joe Boggs

B. BAGWORM LURKING IN THE BUSHES. BYGLers continued to discuss the situation concerning the presence of bagworm (Thyridopteryx ephemeraeformis) throughout Ohio. Joe Boggs expressed the concern that many may be overlooking small populations of bagworms that are not producing overly obvious amounts of damage on the host plants upon which they are feeding. Joe reports that in his travels around the Cincinnati area, the bagworm populations that he has found this year have been relatively small and in a number of cases, fairly low and close to the ground on the host plants. Because of their positions on the host plants, from a distance their damage might be assumed to be something else such as lawn mower damage or a branch that has died from a disease. If these small populations slide under the radar of bagworm population detection, the concern is that next year they could explode into large, majorly damaging populations.

Joe also reported that bagworm populations in his area have begun to tie off or have already finished tying off. This means two things, 1) they will not produce any more damage this year and 2) they are progressing toward the adult stage, mating and egg laying. Management of bagworm at this stage is limited to hand-picking the bags off of the host plant. If the bagworms' bags are already tied off, one may need to use a pair of small, very sharp scissors to remove the bags without further damaging the host plant. The silk produced by the bagworm caterpillar is very strong and does not easily break. Many times the host plant parts will break before the silk does.

The take-home message is, don't let this year's small bagworm populations become big problems next year. Carefully inspect the bagworm's favorite hosts such as blue spruce, arborvitae and juniper for bagworm activity and deal with them now while their populations are still small.

Author: Curtis E. Young
C. APHIDS RISING IN CORN AND SOYBEANS. What does this have to do with landscape plants and/or issues? The aphids themselves...nothing directly. However, with heavy aphid populations come predators. The aphids in question are the ASIAN SOYBEAN APHID (*Aphis glycines*) in soybeans and the BIRD CHERRY-OAT APHID (*Rhopalosiphum padi*) and the ENGLISH GRAIN APHID (*Sitobion avenae*) in corn. There is a long list of predators that are appearing on the scene to take advantage of the abundance of prey available to satisfy their hunger and support the development of their offspring. Examples of some of these predators include GREEN LACE WINGS (family Chrysopidae), PINK SPOTTED LADY BEETLES (*Coleomegilla maculata*), SYRPHID FLIES (family Syrphidae), and most notably the MULTICOLORED ASIAN LADY BEETLES (*Harmonia axyridis*).

This is an early warning alert that with the development of the aphids in the field crops, there is a possibility of large invasions of the multicolored Asian lady beetles to come this fall into homes for overwintering purposes. It is not a guaranteed occurrence, but the potential is definitely there. More information is to come on the subject in the near future. Stay tuned!

Author: Curtis E. Young

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

* Jim Chatfield wowed participants at the Montgomery County Master Gardener Volunteer Diagnostic Workshop held last Wednesday at Aullwood Audubon Farm in Dayton, OH, with a sample of the showy handiwork of the SUMAC GALL APHID (*Melaphis rhois*) on its namesake host. The large, single-chambered, pouch-like galls range in size from 1/2 - 1" in length and hang down from the leaflets. The showing galls appear variegated with areas that are greenish-white bounded by areas that are mottled reddish-pink. Fully mature galls split open to release the winged adult aphids. Spent galls either dry out to become whitish structures that retained the gall's general size and shape, or they became shriveled, brown, collapsed husks.

The aphid has a complex life cycle with some generations feeding on mosses as alternate host plants. Sexual females migrate to sumac in the spring where each female lays a single egg. Their egg laying activity stimulates gall formation and the single aphid offspring proliferate clonally within the gall. Although heavy galling may cause early coloring and shedding of some sumac leaflets, the overall impact appears to be inconsequential relative to overall health of affected plants.

Author: Joe Boggs

4. DISEASE DIGEST.

A. POWDERY MILDEW. Powdery mildew is a common disease seen this time of the year on ornamental plants in the Ohio landscape. As the name implies, powdery mildews, often appear as a superficial white or gray powder-like growth of fungus over the surface of leaves, stems, flowers, or fruit of affected plants. Although the white growth covering different plants are similar in appearance, the fungi causing powdery mildew on one plant are usually different than those on another plant. The pathogen has a very limited host range. Infection of one plant type does not necessarily mean that others are threatened; meaning that the fungus that causes powdery mildew on lilac does not spread to roses and vice versa. Susceptible woody plants include some deciduous azaleas, buckeye, catalpa, cherry, a few of the flowering crabapples, dogwood,
English oaks, euonymus, honeysuckle, horse chestnut, lilac, privet, roses, serviceberry, silver maple, sycamore, tulip tree, some viburnums, walnut, willow and wisteria. Powdery mildews are also common on certain herbaceous plants, such as chrysanthemums, dahlias, delphiniums, phlox, begonias, snapdragons and zinnias. Although powdery mildew rarely causes serious damage to its host, it may accelerate plant defoliation and fall dormancy, and the infected plant may become extremely unsightly.

Most powdery mildew fungi thrive when temperatures are cooler and humidity is high, or when it is extremely dry. Overcrowding and shading keeps plants cool and promotes higher humidity. Cultural practices should be aimed at alleviating high humidity which can help prevent the disease or decrease its severity. These practices include increasing air circulation and light penetration by pruning and thinning plants to reduce overcrowding in the landscape. There are powdery mildew resistant varieties of crabapples, lilac, dogwood, azalea, and rose that can be selected.

Author: Julie S. Crook

B. PHOMOPSIS GALL ON HICKORY. In general, galls (abnormal growths on plants) may be caused by many factors, from crown gall caused by a bacterium, to over a thousand galls caused by insects, from mite-induced galls to galls caused by nematodes. There are also galls caused by fungi, most notably galls on juniper caused by the cedar apple rust fungus and related fungal species. Not as well-known are a series of galls caused by species of the *Phomopsis* fungus. *Phomopsis* galls occur on hickory, oak, forsythia, privet, elm, maple and other species. *Phomopsis* galls on hickory were collected recently from the OSU Secrest Arboretum in Wooster for use in diagnostic workshops. Fortunately, this gall, which consists of disorganized stem tissue, causes only minor dieback and little overall effect on plant health. Galls are woody and roughened, up to an inch or more in diameter, and can simply be pruned out of the tree or left to decay. These fungal galls may be distinguished from insect galls in that they do not have chambers, insect borings or other evidence of insect activity and development.

Author: Jim Chatfield

5. TURF TIPS.

A. ARMYWORMS SOON ON THE MARCH? Joe Boggs reported that he made a site visit last week to a golf course in southwest Ohio to investigate the sudden appearance of an abundance of moth egg masses. The tan colored egg masses appeared within a few days on sign posts, marker stakes, and hole marker flags. A close examination revealed that the masses consisted of one or more layers of tightly packed round eggs that were lightly "dusted" with tannish-brown, fluffy scales shed by the female moths as they laid the eggs.

Joe sent images to Dave Shetlar (the "Bug Doc," OSU Entomology) who identified the moth culprit as either being FALL ARMYWORM (*Spodoptera frugiperda*) or YELLOWSTRIPED ARMYWORM (*Spodoptera ornithogalli*). Neither of these southern moths is capable of surviving winter temperatures in Ohio. Adult moths are blown up from southern states on storm fronts during the spring and summer. The resulting caterpillars feed on a wide variety of field crops including corn and are most often viewed as agricultural pests. However, they may also feed on turfgrass and are capable of causing significant damage, particularly in September. The caterpillars usually do not survive the frequent low mowing on tees and greens, but they
can survive in roughs and move into tees and greens to damage turfgrass. The caterpillars consume grass blades and stems and heavy feeding damage may mimic disease symptoms.

Dave noted that he also found egg masses produced by one, or both of these moths on another golf course in southwest Ohio last week and he cautioned that there could be an armyworm caterpillar outbreak over the next couple of weeks. He recommended that golf courses with heavy egg masses should be closely monitored. Although insecticide applications are rarely required to suppress these caterpillars, products labeled for rapid knockdown of other turf-feeding caterpillars, such as black cutworms, will provide effective control. Thankfully, Dave also reported that a significant percentage of the eggs he found were parasitized meaning that there is a possibility that no outbreaks will occur. Indeed, this is a common theme with these armyworms: there is a wide range of predators, parasitoids, and pathogens that are capable of wiping-out caterpillar populations before they cause noticeable damage to turfgrass or field crops.

Author: Joe Boggs

6. INDUSTRY INSIGHTS.

A. HORSEWEED: THE NEXT SUPER-WEED? Horseweed (Conyza canadensis, family Asteraceae) which is also known as Canadian horseweed, Canadian fleabane, coltstail, and marestail, is an annual plant that in recent years has moved from being a plague in field crops to become a scourge in landscapes and nurseries. Indeed, this native North America plant has become such a problem in Ohio it has been added to the state’s noxious weeds list [http://www.agri.ohio.gov/Public_Docs/Pest_Study_Material/5%20Noxious%20Weeds%20ID%202007.pdf].

Weed management challenges center on three issues. First, horseweed can flourish under a wide range of growing conditions. It is drought tolerant but will also do well in water-logged soils in drainage ditches. Plants will produce viable seeds in poor, low nutrient soils as well as highly fertile soils. Growth appears unaffected by soil pH with plants enduring both alkaline and acidic soils. Finally, horseweed tolerates a wide range of cultivation conditions from field crops to nurseries to landscapes.

The second challenge is this annual weed’s opportunistic life-cycle with the ability to behave as a summer annual and winter annual. Seeds may germinate in late-summer to early fall (winter annual cycle) or in the spring (summer annual cycle). Once seeds germinate, the plant forms a ground-hugging rosette that can be easily mistaken for other weeds. As a winter annual, horseweed remains in the rosette stage through the winter, and then it bolts in the spring. As a summer annual, the weed remains in the rosette stage for only a very short time, and then it bolts in early to mid-summer.

Once horseweed bolts, it quickly forms a single, unbranched hairy stem that is densely covered in alternating oblanceolate leaves measuring 3 - 4” in length. Leaves near the base of the stem are longer and somewhat toothed compared to leaves near the top of the stem. As flowers are produced, old leaves on the lower stem wilt and turn brown. Numerous small flowers are borne on multi-stemmed panicles at the top of the stems. The common names "marestail" and "coltstail" are based on the broom-like flower structures. Horseweed is a prolific seed producer and membership in the Asteraceae family is clearly demonstrated by the tiny, puff-ball-like seed heads which resemble miniature dandelion seed heads.
Finally, the most serious issue with managing horseweed is herbicide resistance, including resistance to the many forms of glyphosate (e.g. Roundup, Glyphomax, etc.). Roundup Ready soybeans were released in 1996; horseweed resistance to glyphosate was first reported in 2000 with glyphosate resistant biotypes now found in 10 states. Adding to the challenge, horseweed biotypes have also been identified that are resistant to other common agricultural herbicides including paraquat, diquat, atrazine, simazine, chlorimuron, diquat, linuron, and diuron. Indeed, it would appear the only thing keeping horseweed from clearly becoming a true “super-weed” is its annual lifestyle.

Horseweed can be managed in landscapes and nurseries by focusing on removal through cultivation or hand-pulling before seeds are produced. The single, stout stem makes a nice "handle" for pulling this annual weed! Unfortunately, seed production has already commenced in southern Ohio. Seed germination and horseweed establishment can be limited by maintaining a 2 - 3” mulch layer.

Although there are horseweed biotypes that are resistant to certain herbicides, other herbicides remain helpful in suppressing horseweed. Effective preemergent herbicides include flumioxazin (e.g. SureGuard, BroadStar); oryzalin (e.g. Surflan); and isoxaben (e.g. Gallery). Postemergent control is more problematic because of the risk of damaging desired plants. Carfentrazone-ethyl (e.g. QuickSilver) is effective if mixed with a phenoxy-type postemergent herbicide such as 2,4-D, and 2,4-D is effective if mixed with dicamba, MCPP, or MCPA. However, the mantra “read and follow label directions” is particularly important with these high-risk applications; pay very close attention to recommended distances to desired plants including warnings about plant root zones. However, no horseweed management strategy should depend entirely on herbicides. That's how we got into trouble with this weed in the first place!

Author: Joe Boggs

B. THE 87TH OHIO STATE UNIVERSITY GREEN INDUSTRY SHORT COURSE. Recently, several ENLTTers visited this year’s site for the OSU Short Course at the Kalahari Resort in Sandusky, along with Brian Laurent and John Street of the Ohio Turfgrass Foundation. Although we had attended and enjoyed conferences there before, it was a revelation to see it in the light of preparing for this new joint effort of OTF and OSU. No parking issues or charge! Excellent rooms for the conference dates, starting at $99. Comfortable lounge chairs and eating and libation venues right in the Convention Center. A Convention Center that will be fully focused on this joint conference, warm and relaxing.

Granted, the site is not in central Ohio, but it is such a convenient venue once there. Convention goers may want to get their rooms somewhat away from the central indoor water park area where there is a good deal of resort buzz, but on the other hand, the convention is well apart from this part of the resort, and in case you can swing a day or so with the family present, there are four tickets for the water park that go with every room each day, and though all hotels have pools, this one is rather large!

As indicated earlier, 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. 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 Lawncare Association. Naturally, the programs will cover a wide range of pesticide applicator and professional certification credits.

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

Author: Jim Chatfield

7. WEATHERWATCH. The following weather information summarizes data collected at various Ohio Agricultural Research Development Center (OARDC) Weather Stations spanning the dates from January 1 - August 31, 2014, with the exception of the soil temperatures which are readings from Tuesday, September 2, 2014 at 5:05 a.m.

Each of the five weather stations are reporting below average precipitation totals for the first eight months of 2014.

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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. OHIO PLANT DIAGNOSTIC WORKSHOP: THIRD NOTICE - SEPTEMBER 5. PESTICIDE CREDITS. The Ohio Department of Agriculture will be offering 5 hours of pesticide credits for this workshop. There are a great number of interesting samples and photographic diagnostic case studies we will be featuring this year, so don't miss the 82nd Ohio Plant Diagnostic Clinic, open to all interested plant diagnosticians.

This 10:00 a.m. - 4:00 p.m. hands-on workshop held at OSU’s Secrest Arboretum in Wooster, OH includes diagnostic samples, walks and updates by OSU's Tree Amigos (Joe Boggs, Erik Draper, and Jim Chatfield), and all the assembled experts covering plant pathology, entomology, and horticulture with all the assembled attendee-experts. Two added bonuses will be identification of herbaceous plants by Cathy Herms of OARDC and updates and tours of Secrest Arboretum by Kenny Cochran, Joe Cochran and Paul Snyder. The registration fee of $40.00 includes program materials, lunch and refreshments.
B.  SOUTHWEST OHIO DIAGNOSTIC WALK-ABOUT. The September 2014 Southwest Ohio BYGLive! Diagnostic Walk-About for Green Industry professionals will be held from 12:00 p.m. - 3:00 p.m. on Monday, September 8, at the Boone County Arboretum at Central Park, 9190 Camp Ernst Road, Union, Kentucky 41090. The program will start at 12:00 p.m. and participants will walk-about with Joe Boggs (OSU Extension), Dr. Mike Klahr (Horticulture, UK Extension, Boone County), and Kris Stone (Director, Boone County Arboretum) looking at trees, shrubs, turf, plant pests, diseases, and other points of considerable interest until 3:00 p.m. To learn more about the Arboretum, check out their web site: [http://www.bcarboretum.org/].

This monthly hands-on training series for Green Industry professionals provides the following training credits: ISA Certified Arborist CEUs; ONLA OCNT credits, and Landscape Architecture Continuing Education System (LA CES) CEUs for Landscape Architects. Visit the following website for more information: [http://hamilton.osu.edu/topics/horticulture/byglive-diagnostic-walk-about ].

C.  FARM SCIENCE REVIEW. This year's Farm Science Review takes place September 16 - 18, 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 [http://www.gwynne.osu.edu] for more information now. Farm Science Review pre-show tickets are $7.00 at all OSU Extension county offices, many local agribusinesses, and also online at [http://fsr.osu.edu/visitors/tickets]. Tickets are $10.00 at the gate. Children 5 and younger are admitted free. Hours are 8:00 a.m. - 5:00 p.m., September 16 - 17 and 8:00 a.m. - 4:00 p.m. September 18, 2014.

D.  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].

E.  ARBOREATUM FEAST, PART DEUX: MAPLE SYRUP TASTING IS ADDED TO THE MIX! The 2nd annual ArborEatum edible landscape feast and sharing will be held on Wednesday, October 8, 2014 at the OSU Secrest Arboretum at the Ohio Agricultural Research and Development Center in Wooster. More details to come, but start planning your menu items. Last year's hits were legion, from over 30 entries from Cleveland's Lois Rose (from bitter orange marmalade to medlar jelly) to ramps soup to controlling invasives one-bite-at-a-time Autumn olive pate de fruits. Lambsquarter omelettes anyone?

F.  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].

G.  THE 87th OHIO STATE UNIVERSITY GREEN INDUSTRY SHORT COURSE. Mark your calendars! The 87th OSU Green Industry Short Course, formerly the OSU Nursery Short Course, 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. For more information, visit the Short Course website at: [http://www.osushortcourse.com].

H. TRI-STATE GREEN INDUSTRY CONFERENCE. Save the Date - 2015 Tri-State Green Industry Conference on February 5, 2015 at the Sharonville Convention Center, 11355 Chester Rd., Cincinnati, OH 45246. The Tri-State Green Industry Conference is a collaborative effort between Ohio State University Extension, Purdue Extension, Cincinnati State Technical and Community College, and the Cincinnati Zoo and Botanical Garden. It features a variety of high quality education and training for professionals in the areas of Annuals & Perennials, Garden Center & Greenhouse Innovation, Tree & Shrub Care, Turfgrass Management, Green Infrastructure and General Pest & Disease Management and also features a vendor trade show. Pesticide recertification credits for Ohio, Indiana and Kentucky will be given, OCNT training credit is available, ASLA CEUs are available and CEUs will be available for ISA Certified Arborists.

For more information visit: [http://hamilton.osu.edu/topics/horticulture/2015-Tri-State-Green-Industry-Conference].

8. BYGYLOSOPHY. "That old September feeling... of summer passing, vacation nearly done, obligations gathering, books and football in the air.... Another fall, another turned page: there was something of jubilee in that annual autumnal beginning, as if last year’s mistakes and failures had been wiped clean by summer." - Wallace Stegner

APPENDIX
ADDITIONAL WEBSITE RESOURCES:

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

Buckeye Turf
http://buckeyeturf.osu.edu

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

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

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

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

Ohio Pesticide Safety Education Program
http://pested.osu.edu/

Ohio State University Department of Horticulture and Crop Science Plantfacts
http://plantfacts.osu.edu/web/
Ohio State University Extension Bee Lab
http://u.osu.edu/beelab/

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

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

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

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

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

Following are the participants in the September 2nd conference call: Pam Bennett (Clark); Joe Boggs (Hamilton); Jim Chatfield (Hort and Crop Science and Plant Pathology); Julie Crook (Hamilton); Erik Draper (Geauga); Denise Johnson (Master Gardener Volunteer Program); Ashley Kulhanek (Medina); Cindy Meyer (Butler); Danae Wolfe (Summit); and Curtis E. Young (Van Wert).

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

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

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

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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.