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Buckeye Yard and Garden Line (BYGL) enhanced with photos and links is available online at: [http://bygl.osu.edu]. Become a fan of the BYGL on Facebook at [http://www.facebook.com/OSUBYGL] or follow the BYGL on Twitter at [http://www.twitter.com/OSUBYGL].

This is the 11th 2013 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 - LARKSPUR (*Delphinium exaltatum*). This native Ohio plant is quite easy to grow and reseeds readily, if left unchecked. Its bright purplish-blue color (some resources describe the flowers as a "gentian blue" color) makes a great addition to a cottage garden or naturalized area. Larkspur is also a great cut flower for arrangements. The flowers are racemes with spikes growing as tall as 4 - 6', depending upon the location. Spent flowers can be removed to encourage a later bloom. Keep some of the seed heads for reseeding. Larkspur doesn't thrive in hot humid situations and may die back somewhat in the heat of summer. However, new seedlings emerge and provide additional bloom.

Larkspur reseeds regularly and comes back year after year. If they get out of control, simply rogue out any seedlings that aren't needed. These plants tend to be deer resistant. Since they are members of the buttercup family, all parts of the larkspur plant are poisonous.

*PERENNIAL - RED HOT POKER (*Kniphofia uvaria*). The unique blooms of this plant tend to catch one's eye when scanning the perennial border in June and July. The showy flowers rise above the foliage on 2 - 4' flower stalks. The 8 - 10" long, spike-like flowers begin to bloom at the base of the spike (lower flowers) and then move to the top; they fade as they develop, giving the appearance of a two-toned flower. Bees and hummingbirds are attracted to the flowers. Numerous cultivars have been developed, providing a variety of flower colors in the red, yellow, orange, and cream range. Once the flowers die, remove the stalk down to the base of the plant.
The foliage is gray-green and narrow, sword-like, and about 18 - 36" long. It can be somewhat evergreen and is fairly unattractive as the flowers fade. Cut it back about half-way to rejuvenate when it starts to look ragged to keep the garden looking nice.

Red hot poker plants do quite well in average well-drained soils, but thrive in moderately rich, humusy soils in full sun. They are, however, intolerant of wet, heavy soils and won't make it through winter in this type of environment. Some gardeners find that mulching extends the longevity of these plants.

*WOODY - SWEETBAY MAGNOLIA (Magnolia virginiana). This year was a mixed bag throughout Ohio for a range of magnolia blooms with our up-and-down freezes and frosts. A few late frosts even caused damage to leaves on some of the bigger-leaved magnolias and even sweetbay magnolia. Flowers of this June-blooming magnolia were not affected, and they are at their sweet-smelling best in northeast Ohio right now. This versatile small tree or multi-stemmed shrub with simple glossy green leaves (silvery below), and very aromatic sweet lemony flowers, was a great hit at the Name That Tree program at OSU-Mansfield last week. Sweetbay magnolia is a favorite of many horticulturists, and BYGLers will always cherish the memory of our friend and landscape architect, designer, and installer Ricky Thomas of Norton, who loved this tree above all others, enjoying its appeal throughout the growing season. Sweetbay magnolia tolerates wet soils and shade, and prefers acid soils. Michael Dirr notes, "lovely, graceful small patio or specimen tree…excellent for the sweet fragrance of its flowers."

Checking out the arborday.org website they do a nice descriptive job - here it is. "The Sweetbay Magnolia has glistening dark green leaves with a silver underside that has a frosted appearance. The 2 - 3" creamy white flowers have a light lemon scent and are visible in late spring and early summer. It is very elegantly shaped and is a good choice for a specimen or patio tree. Bright scarlet-red seeded fruit ripens in late summer attracting many birds. This tree prefers moist, acidic soil with sun to partial shade. Grows 10 - 20' high with equal spread."

*VEGETABLE - OKRA (Abelmoschus esculentus). Okra is a tall-growing, warm-season, annual vegetable that belongs to the Mallow family. Also included in the Mallow family are cotton, hollyhock, rose of Sharon and hibiscus. Okra is referred to as lady fingers or gumbo in other areas of the world. The immature young seed pods are the edible part of this plant and are used for soups, canning and stews or as a fried or boiled vegetable. The hibiscus like flowers and upright plant (3 - 8' or more in height) also has ornamental value for backyard gardens.

Okra usually grows in any well drained good garden soil. Plant the seeds of okra after the soil has warmed in the spring, at least 7 - 10 days after the last frost date for your area. To accelerate germination, the seeds may be soaked in water at room temperature overnight. The seeds should be sown 1" deep in hills 12 - 24" apart. Thin all but the strongest plant per hill when the seedlings are 3" tall. Shallow cultivation near the plants will help keep down weeds.

Harvest the okra pods 4 - 7 days after the flowers open. The pods should be cut while they are tender and free of fiber, 2 - 4" long for most varieties. Harvest every other day as the pods go rapidly from tender to tough with increased size. When the stem is difficult to cut, the pod is probably too mature to use. Remove these pods and discard as they reduce the plant's production capability. The plant will continue to grow and produce pods until frost.

*WEED - COMMON POKEWEED (Phytolacca americana). Gary Gao reported observing the common pokeweed in many parts of Ohio as he visited fruit growers. Most of the common pokeweed plants he saw were around 8 - 12" or so in height during the second week of June. With the warmer temperatures on their way, pokeweed growth rate will pick up very quickly.

Common pokeweed is a large showy perennial. Despite its size, this 3 - 10' tall weed still finds a way to escape detection in landscapes and nurseries. The plant is well branched and resembles a small tree. Emerging shoots, leaves, petioles and branches are green to red-purple in color. Leaves are oblong and 2 - 8" long. Pokeweed flowers in mid to late summer. The flowers are drooping red racemes located at the ends of branches. Individual flowers are white or pink. The fruit is a dark purple 1/4" berry. Birds feast on berries and drop seeds below their roosting areas. However, pokeweed leaves, stems and berries are poisonous to humans and livestock, causing gastrointestinal irritation. Deaths in pigs and cattle have been reported.
Pokeweed can be dug out. Wear gloves when trying to remove pokeberry plants since the juice of pokeweed can be absorbed through the skin.

2. HORT SHORTS.

A. NAME THAT TREE. Sounds simple, doesn't it? Yet trees have multiple names. Why so many? Here is an example from Ohio State University's Secrest Arboretum at the Ohio Agricultural Research and Development Center in Wooster. Our example is a familiar species, with the common name of redbud. The Latinized botanical name for redbud is *Cercis canadensis*. The cultivar (cultivated variety) name of our example is 'JN2', with a plant patent number often attached to it, in this case PP#21,451. The trademark name of this particular redbud is The Rising Sun redbud. Say what? Let us deconstruct.

Common Name: Redbud. This is the name most people use for this small native tree, common in Ohio woodlands, especially as an understory tree in association with flowering dogwoods. It is often noted as the Eastern redbud to distinguish it from the western redbud (*C. occidentalis*) and other species in the genus *Cercis*. It has pinkish-buds and wonderful reddish-pink flowers.

Botanical name: *Cercis canadensis*. The two part Latin name for the Eastern redbud is also known as the scientific or botanical name for this species. The idea behind scientific names for plants and animals was forwarded by the 18th century Swedish botanist Linnaeus to reduce confusion and improve communication. Don't believe me? Consider this example cited in Michael Dirr's "Manual of Woody Landscape Plants" in which he indicates that *Nymphaea alba*, has 245 different common names (including European white water lily) in just the four languages of English, French, German and Dutch. This tower of botanical Babel obviously needed a better system. Common names are wonderful, but often communication commands clarity.

Cultivar name: 'JN2' (PP#21451), in our example. As horticulturists know, there are many different types of Eastern redsuds, in fact there is something of a renaissance of redsuds in recent years, from weeping redsuds to purple-leaved redsuds, to yellow and apricot-leaved redsuds. This is because horticulturists, practiced in the nurture of nature, have noted variations that come about through genetic recombination and mutations. If they successfully can propagate these new variations, typically through asexual propagation, such as clonal cuttings and then grafting to a rootstock, then they may be able to patent their new introduction to the horticultural trade. Cultivars are designated by single quotation marks. In the case of the redbud in question, its name is sometimes termed a nonsense cultivar name, given that 'JN2' is not very descriptive, compared for example, to the cultivar name of, say, *Acer palmatum* 'Bloodgood' which clearly refers to this old standby purple-leaved Japanese maple. Why did Jackson Nursery of Tennessee decide to use a nonsense cultivar name ('JN2') instead of something more descriptive of what they describe as "A new and distinct variety of *Cercis canadensis*, an Eastern Redbud tree found and introduced by Jackson Nursery."

Typically the reason for this is that the nursery that introduces a new plant has control of the propagation for sale and other commercial use rights of the plant only for the 20 years afforded by plant patent regulations. After twenty years, other horticulturists can propagate and sell the plants without going through the patenting nursery. Which brings us to…

Trademark name: 'The Rising Sun redbud. Jackson Nursery chose as the trademark name a descriptive term which relates to its features of what they describe as its "orange new growth developing into bright yellow, then into yellow green, finally maturing into light green with some lighter and darker speckling on the leaves." I also like their description of "golden tangerine heart-shaped foliage in summer extends through fall; new leaves are bright rosy apricot." Indeed that well describes its features as does the trademark name of The Rising Sun. A key factor of trademarks is that they can be renewed, not for 20 years, but rather…forever. This is done because 20 years is often deemed inadequate for recouping the costs of discovery, propagation, production, and marketing of a new tree.
So, that is at least one aspect of why trees have so many names. For our last word though, about names and any word, go ask Alice. Or rather, in this case - Humpty Dumpty from Lewis Carroll:

'When I use a word', Humpty Dumpty said in a rather scornful tone, 'it means just what I choose it to mean - neither more nor less.

'The question is,' said Alice, 'whether you can make words mean different things.'

'The question is,' said Humpty Dumpty, 'which is to be master—that's all.

3. BUG BYTES.

A. LEAF CURL ASH APHID. Participants in this week's Southwest Ohio BYGLive! Diagnostic Walk-About found an unusual "woolly-type" aphid infesting green ash. The aphid (Prociphilus (Meliiarthizaphagus) fraxinifolii) is sometimes called the "leafcurl ash aphid" because of the symptoms produced on its namesake host, or the "woolly ash aphid" because of the white, waxy filaments covering the aphids. The literature notes that this aphid only feeds on green ash. The aphid's feeding activity on newly expanding leaves produces rosette-like symptoms with the ash leaves becoming stunted, curled, and distorted.

While the aphid's life cycle is poorly understood, it appears to be complex and possibly involving an overwintering stage on tree roots. There is also some evidence that the overwintering stage may include a symbiotic relationship with a fungus (Gyrodon merulioides) commonly found in the soil under ash trees. Reports suggest that the fungus surrounds and protects the aphid with knots of mycelium called "sclerotia" in exchange for the sugary honeydew produced by the aphid. Indeed, the aphid is a prolific honeydew producer with the sticky liquid dripping onto leaves and stems to become colonized by black sooty molds.

The literature indicates this aphid is a native pest and ranges from the eastern U.S. across the Great Plains. Heavy infestations are commonly reported from Wisconsin, Minnesota and the Dakotas; however, in recent years, the aphid has also become increasingly common in Ohio. There is little information on effective management strategies for the leafcurl aphid. It is speculated that the extreme leaf distortion may protect the aphid from contact insecticides. The infested ash viewed on the Walk-About has been receiving biannual treatments of emamectin benzoate for the past 5 years to protect the tree against emerald ash borer (Agrilus planipennis), so it would appear this systemic insecticide may not provide protection against the aphid.

B. OAK APPLE WASP GALLS. Joe Boggs reported observing several types of oak apple wasp galls on their namesake host. These unusual plant growths range in size at maturity from 0.5 - 2" in diameter and are named for their resemblance to apples. The galls are constructed of leaf tissue that has been hijacked by a gall wasp (Family Cynipidae) to surround a single wasp larva located within a seed-like structure positioned at the center of the gall. There are over 50 species of gall wasps that are known to produce oak-apple galls in North America and there are probably at least 10 - 15 distinct species of oak-apple gall wasps found in Ohio.

The exact species of gall-wasp that is responsible for producing the oak-apple gall can be identified based on the gall's structure, size, color, and oak host. Cutting the gall open will reveal the gall's internal structure. In general, there are two groups of oak-apple galls: those with internal tissue composed of a mass of white fibers radiating from the central larval capsule, and those with tissue that strongly resembles the flesh of an apple; it is spongy and juicy. Beyond the internal structure, oak-apple galls are further identified based on the color of the gall, whether or not the surface of the gall is smooth, dimpled, or covered in bumps, and whether or not the gall has spots.

The so-called SPONGY OAK-APPLE GALL is produced by the gall wasp, Amphibolips confluenta, on scarlet, red, and black oaks. The galls may be up to 2" in diameter and as their common name implies, the internal tissue is spongy and closely resembles the flesh of an apple. The surface of the gall is light green, smooth, and free of spots. The LARGE EMPTY OAK-APPLE GALL is produced by the wasp, A. quercusinanis (syn. A. inanis). The gall is also found on scarlet and red oaks and measures up to 2" in diameter. However, the internal structure of this gall is
composed of white fibers radiating from the central larval structure. The surface of the gall is light green and covered with purplish-red bumps.

As with all plant galls, oak-apple galls change their appearance once they reach "maturity;" the point where a mature gall-making wasp emerges from the gall. For example, the large empty oak-apple gall has turned tannish-brown and a single gall-maker emergence hole is apparent. However, the fibers within the gall remain dense; the gall becomes true to its name once the fibers break-apart and become sparse. As with most leaf-galls, oak-apple galls cause little harm to the overall health of their oak hosts.

C. MIDGE GALLS ON OAK. Joe also reported observing galls on pin oak that were produced by gall-midges; small gnat-like flies belonging to the family Cecidomyiidae. VEIN POCKET GALLS are elongated plant structures that arise from leaf veins on the lower leaf surface. A close examination of the upper leaf surface will reveal that the galls are indeed pocket-like with slit-like openings through the upper surface into the galls beneath the leaf. Several species of gall midges produce vein pocket galls.

The vein pocket galls produced by the midge fly, *Macrodiplosis goruca*, are light green, hairless, and appear rope-like as they flank the main veins on underside of the leaves. The pocket galls produced by the midge fly, *M. quercusoruca*, are greenish-yellow and covered in fuzzy white hairs. These warty-looking galls are much larger rising noticeably beyond the plane of the leaf veins. Vein pocket galls develop very early during leaf expansion. As a result, heavily galled leaves may become crinkled, curl downward, and exhibit a claw-like appearance.

The midge fly, *M. niveipila*, produces unsightly, lumpy growths on oak leaves that are sometimes called "GNARLED OAK LEAF MIDGE GALLS." The galls appear as irregular, brain-like twisted masses of leaf tissue that may arise near the base of the leaf with normal leaf tissue extending beyond the gall, or the misshapen growths may be comprised of an entire leaf. The affected leaf tissue is thickened; darker green compared to normal tissue, and covered in sporadic patches of short, fuzzy, white hairs. The galls tend appear throughout the tree canopy in random collections, with several galls in close proximity to one another. However, only a very small percentage of the leaves on an entire tree are usually affected; thus, gnarled oak leaf midge galls have a limited impact on the overall health of the host tree.

D. AN UNUSUAL GOLDENROD LEAF GALL. A number of interesting plant galls look so much like fungal structures that for years they were misidentified as a fungal plant disease. Such is the case with the goldenrod leaf galls associated with the midge fly, *Asteromyia carbonifera*. The galls appear as white, circular to elongate slightly raised structures on both the upper and lower leaf surfaces. As the galls mature, they develop a faint black ring near the outer edge making the galls look target-like. The leaf galls were originally described as being the result of infections by the fungus *Rhytisma* spp. However, as with many things in nature, there is more to this story than meets the eye.

In fact, the galls do house a fungus, *Botryosphaeria dothidea* (previously identified as *Sclerotium asteris*) as well as the midge fly. However, the midge fly and the fungus have an obligate mutualistic symbiotic relationship meaning that the two live for the mutual benefit of one another and the relationship is so strong that without the fungus, the flies could not develop on goldenrod, and vice versa. Indeed, the female flies carry spores of the fungus in specialized structures (mycangium) in their terminal abdominal segment. When the flies insert eggs into the goldenrod leaf tissue, they also inoculate the plant with the fungus.

Most gall-making midge flies that belong to the family Cecidomyiidae directly orchestrate the growth of their associated galls. However, it appears that the growth of the galls on goldenrod is directed by the fungus rather than the midge fly. And, this is not the only "service" provided by the fungus. The fungal mycelium surrounds the midge fly larvae (maggots) and the maggots feast on the fungal tissue rather than plant tissue. Eventually, a layer of the fungal mycelium differentiates to form a black, tough, dense vegetative structure called a stroma. The black, carbon-like stroma may be revealed by carefully peeling away the surface of the galls on the lower leaf surface. The stroma adds rigidity to the gall structure, and it also helps to protect the midge maggots and pupae from the depredations of the parasitoid wasp *Torymus capitae*. The wasp probes the gall with its ovipositor seeking to lay an egg in the immature flies; however, their ovipositors cannot easily penetrate the fungal stroma.
The midge-fungus is a symbiotic relationship that keeps on giving; the midge fly has multiple generations per season with each new generation being entirely dependent upon the fungus, and vice versa. Although the galls were originally misidentified as a fungal plant disease, there is indeed a fungus among us ... which is a very good thing for the midge fly!

E. PORCH LIGHTS SHED LIGHT ON COCKROACHES. Joe Boggs reported that WOOD COCKROACH (Parcoblatta pennsylvanica) males are appearing at porch lights southwest Ohio and occasionally finding their way into homes. The males measure around 1” in length and are blackish-brown. The edges of their thorax as well as the margins of the forward half of their wings are transparent to slightly yellowish in color. The males have fully functional wings and are very good fliers. However, adult females are unable to fly; they only have "wing pads" which makes them look like female ORIENTAL COCKROACHES (Blatta orientalis), also known as "water bugs."

Wood cockroaches are very different from other cockroaches. They are much less secretive compared to other cockroaches and are active both day and night. Unfortunately, the males have a distinct attraction to outdoor night lights which may bring them to homes. Fortunately, these cockroaches will not take-up residence in buildings. Both the adults and nymphs feed on decaying organic matter and are commonly found in rotting logs.

The cockroaches may be inadvertently brought into homes in firewood or males that are attracted to night lights may zip into homes through open doors or windows. In either case, this cockroach is only considered a nuisance pest; there is no need to dispatch them with an insecticide. If errant males or females are found in a home, they will not hide which makes easy targets for the "cockroach stomp" ... which also produces the disgusting side-effect of the "cockroach smear and scrap." While simply shepherding the occasional wayward wood cockroach outside may be far less dramatic, it is also less messy.

4. DISEASE DIGEST.

A. QUINCE RUST ON HAWTHORN. Participants in this week's Southwest Ohio BYGLive! Diagnostic Walk-About observed early infections on hawthorn fruit (haws) by the quince rust (a.k.a. cedar-quince rust) fungus, Gymnosporangium clavipes. Fruit infections cause no harm to the overall health of affected trees; however, the infections do produce some of the most obvious and problematic signs of the disease. Infected fruits sprout peculiar looking bright orange tube-like spore structures (aecia). Fruits covered in "orange hair" reduce the aesthetic appeal of heavily infected trees and the bright orange spores (aeciospores) shed from the aecia will settle onto sidewalks, patios, outdoor furniture, slow-moving gardeners, etc., to bestow a noticeable burnt-orange patina.

The fungus also infects hawthorn stems and thorns causing more significant damage. Cankers associated with stem infections can produce significant twig dieback causing serious harm to heavily infested trees. The dieback may become widespread throughout the canopy with the overall tree symptoms mimicking a severe case of bacterial fire blight.

As with the other Gymnosporangium rust fungi that occur in Ohio, G. clavipes alternates between two very different types of plant hosts. The fungus infects several species in the Juniperus genus including J. communis, J. horizontalis, J. sabina, J. scopulorum, and J. virginiana which is also known as the Eastern red cedar from whence the "cedar" name often appended to the disease name is derived. On junipers, the fungus produces spheroid twig cankers from which spores are released that infect plants in the rose family (Rosaceae) such as hawthorn and quince. The stem cankers on juniper can become perennial meaning the cankers will continue to enlarge and release spores for several years. The cankers may also cause stem dieback on juniper.

Spores released from the juniper cankers infect rosaceous hosts in the spring as new leaves and flowers are emerging. The fungus is capable of infecting over 480 rosaceous plant species in 11 genera including quince, crabapples, pears, and serviceberries; however, infections are most apparent in Ohio on hawthorns. In most cases, fungicide applications are not warranted in the landscape, but if stem dieback becomes a perennial problem, or where fruit infections, particularly of hawthorns, are severe and result in unwanted tracking of orange-colored
spores into houses, preventive fungicide sprays in the spring may be an option. Application timing is critical; fruit infections typically occur before flower petals are shed.

B. WHAT EXACTLY DO YOU SEE? The sixth question of The 20 Questions of Plant Diagnostics is a key one - what exactly do you see? It is an effort to focus on details. Is leaf scorch on horsechestnuts and buckeyes a brown discoloration along leaf edges, which is typical of physiological leaf scorch due to moisture stress, or is the leaf discoloration more blotch-like along leaf veins and with yellow halos around brick red to brown lesions? On crabapple leaves are distinct leaf spots brown with purple edges suggestive of frogeye leaf spot, or are leaf lesions more diffuse and with grayish to olive green coloration on the leaves that is suggestive of apple scab disease, or are their bright orange spots on leaves, indicative of cedar apple rust disease? The devil is in the details since how serious the problem is and what controls are available depend upon diagnostics, which requires careful attention to "exactly what you see".

C. ROSE ROSETTE VIRUS DISEASE. This serious disease of roses has become quite a problem for the green industry and rosarians. Rose rosette is a disease caused by a virus (tiny submicroscopic pathogens) and transmitted by an eriophyid mite (*Phyllocoptes fructiphilus*), the rose leaf curl mite. This is a tiny mite, much smaller than spider mites, and magnification equivalent to a dissecting microscope is helpful for identification. Symptoms of this disease include distortion of new growth, excessive thorn production and elongation of new shoots, "witches-brooming," and abnormal reddening and discoloration of leaves. Take all these symptoms in consideration in the diagnostic process since reddening of new growth may simply be a characteristic of a particular cultivar and distortion of growth may be caused by growth regulator herbicide injury.

Control is difficult. There are no "viruscides." Miticides for the rose curl leaf mite are a potential help, but need to be considered in an overall and sustained program that includes a focus on sanitation. Roguing out affected plants, including root systems, from the planting might be the best approach for most situations and consideration of alternative crops when infestations are widespread may be warranted. The invasive plant species, multiflora rose, is highly susceptible to rose rosette disease and control of this plant is useful in areas where horticultural roses are an important landscape asset.

If rose cultivation is intensive and miticides are considered warranted, check out what is legal in your area an situation, be it as a grower or landscaper. Here are some comments from OSU grad Dave Kuack in the February 4, 2013 edition of *Greenhouse Grower*:

"Three miticides (Avid, Akari and Judo) along with horticultural oil have been listed as controls in Conard-Pyle's Rose Rosette Disease Guide...We advise growers who use these miticides to rotate between the three chemicals," Dobres [of Conard-Pyle] says. "It is important to rotate these miticides so that the mites don't build up resistance. These are contact controls and it is important to use them in rotation."

5. TURF TIPS.

A. HARD-TO-CONTROL TURFGRASS WEEDS. There are several hard-to-control turfgrass weeds with which one may have to contend in Ohio lawns. Among some of the more difficult weeds to control are clover (*Trifolium* spp.), ground ivy (*Glechoma hederacea*), violets (*Viola* spp.) and yellow woodsorrel (*Oxalis* spp.). To deal with these and many other undesirable plants in lawns, the first step is to develop and maintain a dense, healthy stand of turfgrass.

The production of a healthy stand of turfgrass incorporates the planting of recommended turfgrass varieties and cultivars suitable for the area, proper management practices to establish the turfgrass, and a maintenance program to keep the turfgrass growing. The maintenance program should include an adequate fertilization program, proper mowing practices, supplemental irrigation when rainfall is limited, and the application of insect and disease control measures based upon actual need. Unfortunately, even the best cared-for lawns are sometimes invaded by weeds. When all else fails to prevent weeds from establishing in turfgrass, one may have to resort to the careful and selective use of herbicides to control the weeds such as those mentioned above.
Chemical management of these hard-to-control weeds typically involves the use of one or combinations of a couple of different broad spectrum broadleaf weed herbicides. Examples of these herbicides and combinations of herbicides are clopyralid, or fluroxypyr, or dicamba, or quinclorac, or combinations of clopyralid or dicamba, or 2,4-D + triclopyr, or 2,4-D + 2,4-DP, or 2,4-D + 2,4-DP + dicamba. The hard-to-control weeds may also require repeated applications to reduce some populations.

After satisfactory management of the weeds has been accomplished, the job is yet incomplete. To finish the job, one has to re-establish turfgrass in the holes left after removing the weeds. If the holes are not filled with turfgrass, weeds could fill the void again.

6. INDUSTRY INSIGHTS.

A. ODA SCHEDULED TO BEGIN GYPSY MOTH PHEROMONE FLAKING NEXT WEEK. The Ohio Department of Agriculture (ODA) will begin aerial treatments designed to disrupt gypsy moth mating on 89,195 acres in Allen, Athens, Champaign, Delaware, Fairfield, Hancock, Hardin, Hocking, Logan, Marion, Meigs, Putnam, Ross, Union, Van Wert, Vinton, and Wyandot counties.

A yellow crop duster will fly 100' above the tree tops to apply the treatment. Weather permitting, treatments will begin in southeast Ohio the week of June 17, 2013 and move northward with a target completion date of June 27, 2013. In all counties receiving treatment, the department will use a single application of the product Disrupt II. This product does not kill the adult moth, but it disrupts the mating process by confusing the male as it searches for a female mate. Disrupt II is not harmful to birds, plants, pets or humans.

Pre-recorded daily updates about planned treatment blocks are available to citizens by calling 614-387-0907 or 800-282-1955 ext.37, after 5:00 p.m.

The gypsy moth is a non-native, invasive species that advanced into Ohio from both Pennsylvania and Michigan over the past several years. In its caterpillar stage, it feeds on the leaves of more than 300 different trees and shrubs and is especially fond of oak (*Quercus* spp.). A healthy tree can usually withstand two to three years of defoliation before it is permanently damaged or dies. To date, 51 of Ohio's 88 counties have established gypsy moth populations.

Treatment will take place across the state on a total of 89,195 acres in Allen, Athens, Champaign, Delaware, Fairfield, Hancock, Hardin, Hocking, Logan, Marion, Meigs, Putnam, Ross, Union, Van Wert, Vinton and Wyandot counties. For more information on Disrupt II, maps of the application areas or general information about the gypsy moth, visit www.agri.ohio.gov/gypsymoth.

B. GET YOUR GREEN INDUSTRY FIX WEBINAR: JULY 10. We had a great Webinar session on rose rosette disease, the many names of trees, and insect galls this past Wednesday. Next up: Wednesday, July 9, 8:00 - 8:50 a.m. Join OSU Buckeye Yard and Garden Line (BYGL) experts for this Ohio Nursery Landscape Association's Green Industry Webinar then. If you have questions about registering, contact ONLA at 614-899-1195 or 800-825-5062.

7. WEATHERWATCH.

A. WEATHER UPDATE. The following weather information summarizes data collected at various Ohio Agricultural Research Development Center (OARDC) Weather Stations spanning the dates from June 1 - 12, 2013, with the exception of the soil temperatures which are readings from Wednesday, June 12, 2013 at 5:05 p.m.

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<td>68.2</td>
<td>53.1</td>
<td>2.63&quot;</td>
<td>2.0&quot;</td>
<td>73.99/74.78</td>
</tr>
<tr>
<td>Wooster</td>
<td>NE</td>
<td>73.8</td>
<td>54.9</td>
<td>1.7&quot;</td>
<td>1.5&quot;</td>
<td>74.81/72.76</td>
</tr>
</tbody>
</table>
For a link to the OARDC Weather Stations, visit: [http://www.oardc.ohio-state.edu/centernet/weather.htm].

B. GROWING DEGREE DAYS (GDD). GDD is a measure of the daily maximum and minimum temperature and directly relates to growth and development of plants and insects. The GDD of any zip code location in Ohio is estimated using the GDD of ten OARDC weather stations and available on the web at: [http://www.oardc.ohio-state.edu/gdd/].

The range of GDD accumulations in Ohio from north to south is 702 to 978. Following is a report of GDD for several locations around Ohio as of June 12, 2013: Painesville, 702; Cleveland, 741; Toledo, 791; Canfield, 757; Findlay, 805; Van Wert, 813; Wooster, 887; Coshocton, 887; Columbus, 980; Springfield, 903; Dayton, 908; Cincinnati, 953; Ironton, 967; Portsmouth, 968; and Piketon, 978.

To put these GDD accumulations into perspective, the following is an abbreviated listing of plant and insect species with their respective phenological event and average GDD accumulations at which these events occur. Due to variations in weather, temperature, humidity, etc., these events may occur a few days earlier or later than predicted by the average GDD. By looking at a city, town, or village nearby on the above list, or visiting the above website, one can see what is taking place in the landscape.

Black vine weevil, first leaf notching due to adult feeding, 677; Washington hawthorn, full bloom, 731; calico scale, egg hatch, 748; greater peach tree borer, adult emergence, 775; rhododendron borer, adult emergence, 815; northern catalpa, full bloom, 816; mountain laurel, full bloom, 822; dogwood borer, adult emergence, 830; oakleaf hydrangea, first bloom, 835; cottony maple scale, egg hatch, 851; panicle hydrangea, first bloom, 856; fall webworm, egg hatch (first generation), 867; mimosa webworm, egg hatch (first generation), 874; fuzzy deutzia, full bloom, 884; winged euonymus scale, egg hatch, 892; spruce budscale, egg hatch, 894; winterberry holly, full bloom, 897; panicled goldenraintree, first bloom, 924; June bride littleleaf linden, first bloom, 953; azalea bark scale, egg hatch, 957; Japanese beetle, adult emergence, 970; rosebay rhododendron, first bloom, 1,010; and June bride littleleaf linden, full bloom, and 1,115.

8. COMING ATTRACTIONS.

A. OHIO'S INVASIVE SPECIES SERIES, JUNE 2013, OSU MANSFIELD CAMPUS. Invasive species come in all shapes and sizes. Whether a plant, insect, fungus or vertebrate, each invasive species impacts their segment of the ecosystem in different ways. This seminar series focuses on some of the key issues associated with non-native, as well as how to identify them and deal with them in your own backyard.

*June 18 - Non-native invasives don't impact just our trees. This evening seminar will focus on the impacts non-native invasives have on wildlife and the wood products our woodland produce.

*June 25 - The last seminar session will focus on specific non-native invasive plants. Characteristics for identification will be covered along with control options.

Registration for each seminar is $15 OR register for all 4 seminars for $45. Information can be found on the website at [http://woodlandstewards.osu.edu].

B. DIAGNOSTIC WALKABOUT FOR THE GREEN INDUSTRY. Diagnostic Walkabout for the Green Industry series is once again occurring around Ohio this summer. ONLA, AGI and OSU Extension will be hosting 6 more events in 2013: June 27, BGSU Firelands, Huron; July 18, Mingo Park, Delaware; August 1, Stan Hywet Hall and Gardens, Akron; August 15, Toledo Botanical Gardens; September 12, Inniswood Metro Gardens, Westerville; September 26, Sunset Memorial Park, North Olmsted. Pre-registration is required and class size is limited to 30 per class. ODA, ISA and OCNT credits available. For registration, location and pesticide credit information see: [http://www.onla.org].
C. TCD WORKSHOP. On Wednesday, July 31, 2013, a workshop will be held in Hamilton, Ohio to discuss THOUSAND CANKER DISEASE ON WALNUT. The program will be held at the Butler County Extension and include both an indoor and outdoor portion. Information, including a flyer about the workshop can be found on the Woodland Stewards website at [http://woodlandstewards.osu.edu/]. The workshop runs from 9:00 a.m. - 3:45 p.m. Registration cost is $20.00 per person. Questions about the program can be directed to Kathy Smith at 614-688-3136.

9. BYGLOSOPHY. "There is no gardening without humility. Nature is constantly sending even its oldest scholars to the bottom of the class for some egregious blunder." - Alfred Austin

APPENDIX - ADDITIONAL WEBSITE RESOURCES:

Ask a Master Gardener Volunteer (Consumer Gardening Questions)
http://mastergardener.osu.edu/ask

Buckeye Turf
http://buckeyeturf.osu.edu

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

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

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

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

Ohio State University Extension Master Gardener Volunteer Program
http://mastergardener.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 June 11th conference call: Joe Boggs (Hamilton); Jim Chatfield (Hort and Crop Science); Julie Crook (Hamilton); Gary Gao (OSU South Centers); Francesca Peduto-Hand (Plant Pathology); Amy Stone (Lucas); Nancy Taylor (C. Wayne Ellett Plant and Pest Diagnostic Clinic); and Curtis Young (Van Wert).

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

BYGL is a service of OSU Extension and is aided by support from the ONLA (Ohio Nursery and Landscape Association) [http://onla.org; http://buckeyegardening.com] to the OSU Extension Nursery, Landscape and Turf
Team (ENLTT). Any materials in this newsletter may be reproduced for educational purposes providing the source is credited.

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

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

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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. TDD No. 800-589-8292 (Ohio only) or 614-292-6181.