BYGL Newsletter

May 24, 2012
This is the 8th 2012 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 - Calibrachoa (Calibrachoa x hybrida)

Sometimes called million bells or trailing petunia, Calibrachoa is related to the petunia and has smaller blooms that resemble petunia blooms. It's an excellent annual for sun and does quite well in containers and hanging baskets. Don't forget to fertilize on a regular basis (according to label instructions) in order to keep full and blooming. Calibrachoa does not tolerate high pH soils that are found in most of Ohio; therefore, it won't perform as well in the ground. Flower colors are quite vivid and are various shades of violet, blue, red, pink, magenta, yellow, orange, bronze, and white. The compact mounding plants grow to around 9" tall on trailing stems; some cultivars grow up to 24" in width. Common series and cultivars include 'Million Bells', 'Terracota', 'Lirica Showers', 'Starlette', 'Colorburst', and 'Superbells'.

For More Information:
Missouri Botanical Garden Kemper Center for Home Gardening information on the Calibrachoa group
University of Illinois Extension hortanswers on Calibrachoa
http://urbanext.illinois.edu/hortanswers/plantdetail.cfm

*Perennial - Salvia (Salvia x hybrid)

These hardy hybrids are in spectacular bloom in central Ohio now, but may not last long with the current temperatures! The perennial salvia prefers cool nights and adequate moisture which normally makes them a perfect plant for striking color in the spring garden. The dark-bluish to light-purple flower spikes stand out among other perennials when planted in a mass. The flowers are slightly aromatic when crushed and are attractive to bees and hummingbirds. Deadhead or shear the blooms when finished as this initiates sporadic re-blooming during the summer.

Hardy salvias do best in full sun but tolerate very light shade (blooming decreases when shade increases, and the plants get leggy and floppy). Plants grow around 2' tall. If they tend to get straggly or leggy after blooming, cut them back to the new basal foliage. They are easy to grow and tolerate most Ohio soils. 'Mainacht' (May Night) (1997 Perennial Plant Association Perennial of the Year) has dense, upright spikes of deep violet flowers. 'Ostfriesland' (East Friesland) grows 18 - 24' tall and has purplish-blue flowers spikes. Both are excellent for cut flowers. Other cultivars include 'Rosenwein' or Rose Wine with 2' tall plants and rosy red flowers and 'Viola Klose' with dark blue flowers.
**Woody - Shingle Oak (Quercus imbricaria)**

The shingle oak or laurel oak is a medium to large-sized tree that can reach heights of 70'. Appropriately named, the specific epithet means, overlapping, and the common name refers to its use by pioneers for shingles. This tree, which is in the beech family, has an alternate branching pattern with simple, leathery, shiny dark green leaves. The leaves are approximately 3 - 5" long, unlobed and have a terminal bristle tip. Shingle oaks are pyramidal to oval in shape and are in the red oak group. Like many of the oaks in the red oak group, shingle oaks prefer acidic soils but can adapt to neutral or a slightly alkaline pH. Found in zones 4 to 8, shingle oaks thrive in full to partial sun.

For More Information:
- Ohio Department of Natural Resources – Ohio Trees
- Virginia Tech
  [http://dendro.cnre.vt.edu/dendrology/syllabus/factsheet.cfm](http://dendro.cnre.vt.edu/dendrology/syllabus/factsheet.cfm)

**Vegetable - Common Sage (Salvia officinalis)**

This perennial herb is in the Lamiaceae or mint family and is one of the easiest herbs to grow. Sage likes average soil that is medium to dry, but well-drained. It grows best in full sun, however, sage will tolerate light shade. Sage has few serious pest problems; it is affected by four-lined plant bug but since this insect feeds early and then pupates for the summer, the new growth tends to cover up any damaged foliage. Pruning and removing foliage to use in the kitchen helps to keep the plant more compact. Sage can become a shrubby perennial; some like to cut it back to just above ground level each spring in order to keep it in shape.

Sage grows around 2 - 2 1/2' tall and about as wide. It can be mixed in perennial or annual borders, used in containers, or planted in the vegetable garden. The leaves are aromatic when crushed. Bluish lavender flowers appear in June to add a little color to the garden. While common sage has foliage that is somewhat gray-green, cultivars of sage can have different combinations of colors. The cultivar 'Tricolor' has green, cream-colored and purple on the leaves and 'Icterina' has green in the center of the leaves edges by gold. 'Purpurescens' has purplish leaves making it a great ornamental for the garden as well as the dinner table.

**Weed - Wild Parsnip (Pastinaca sativa)**

Wild parsnip plants are rising towards their full height and blooms are beginning to appear in southern Ohio. This Eurasian perennial weed can grow to impressive heights topping 8’. The umbellate flower arrangement looks like an upside-down umbrella; a characteristic shared by all members of the carrot family (Apiaceae (= Umbelliferae)). The umbels on wild parsnip are topped with tiny yellow flowers.

Wild parsnip plants spend the first year as rosettes with leaves growing from a short stem only a few inches above the ground.
While in this stage, the plant produces a long, thick taproot. During subsequent years, the plant will generate a single, thick, deeply ridged, greenish-yellow stem that sprouts lateral branches topped with hundreds of clusters of yellow umbellate flowers. Wild parsnip is a prolific seed producer, and this is the primary means by which the plant spreads. Leaves are alternate, pinnately compound, branched, and have saw-toothed edges. Each leaf has 5-15 ovate to oblong leaflets with variable toothed edges and deep lobes.

Gardeners should exercise extreme caution around this plant; the plant’s juices can cause phytophotodermatitis (a.k.a. Berloque dermatitis). If plant juices contact skin and the skin is then exposed to sunlight (specifically ultraviolet light), a severe rash or blistering can occur, as well as skin discoloration that may last several months. The toxic nature of the sap makes mechanical control of wild parsnip problematic. Plants are susceptible to glyphosate (e.g. Roundup) which may be the safest approach to controlling this non-native invasive weed.

For More Information:

USDA Plant Profile
http://plants.usda.gov/java/profile

OSU-OARDC Perennial and Biennial Weed Guide
http://www.oardc.ohio-state.edu/weedguide/singlerecord.asp

Hort Shorts »

Growing Degree Days (GDD)

Growing Degree Days (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 532 to 883. Following is a report of GDD for several locations around Ohio as of May 23, 2012: Painesville, 532; Cleveland, 577; Toledo, 667; Canfield, 600; Findlay, 683; Van Wert, 695; Wooster, 642; Coshocton, 735; Columbus, 844; Springfield, 806; Dayton, 810; Cincinnati, 851; Ironton, 881; Portsmouth, 883; and Piketon, 851.

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.

Smokebush, first bloom, 501; arrowwood viburnum, first bloom, 534; American yellowwood, first bloom, 546; bronze birch borer, adult emergence, 547; black locust, full bloom, 548; American holly, first bloom, 556; mountain laurel, first bloom, 565; potato leafhopper, adult arrival, 568; juniper scale, egg hatch, 571; common ninebark, full bloom, 596; American yellowwood, full bloom, 599; arrowwood viburnum, full bloom, 621; multiflora rose, full bloom, 643; northern catalpa, first bloom, 675; 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; and winged euonymus scale, egg hatch, 892.

For More Information:

Growing Degree Days and Phenology for Ohio
http://www.oardc.ohio-state.edu/gdd/
Understanding and Using Degree-Days
http://ohioline.osu.edu/sc165/sc165_14.html

Bug Bytes »

Windshield Wipes

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hemicyphus) females are excreting heavy quantities of honeydew in central Ohio. The sugary, sticky, honeydew is coating needles, twigs, and branches and will soon become colonized by black sooty molds to produce an unsightly mess. This soft scale is so named because it looks very similar to spruce buds. The rounded females are reddish-brown, about the same size as buds, and they usually occur in clusters of 2 - 8 at the base of new shoots. Scale infestations often first appear on lower branches and heavy infestations can cause branch dieback. There is only one generation per year in Ohio.

* Dave also noted that JUNIPER TIP MIDGE (Oligotrophus aplites) females are inserting eggs into the shoot tips of their namesake host in central Ohio. Larvae mine tissue in the shoot tips and their feeding activity produces gall-like swellings. The affected tissue eventually turns reddish-brown producing tip die-back symptoms. The symptoms may be mistaken for tip blights produced by the fungi Phomopsis juniperovora or Kabatina juniperi.

* Curtis Young reported that he found BOXWOOD LEAFMINER (Monarthropalus flavus) pupal skins hanging out of the lower leaf surfaces of boxwoods in northwest Ohio. This means adults are on the wing in his part of the state. The adult leafminers superficially resemble miniature mosquitoes; however, they have bright orange abdomens. After the emerged flies mate, the females insert their eggs between the upper and lower leaf surfaces to initiate the next generation. An application made now of imidacloprid (e.g. Merit and generics); clothianidin (e.g. Arena or Aloft); or thiamethoxam (e.g. Meridian) will reduce damage during the upcoming season by killing 1st instar larvae soon after they hatch from the eggs. Previously, we had noted that reports of this non-native leafmining midge fly were almost exclusively relegated to the central and southern parts of the state. Whether Curtis’ observation was a previously undiscovered population or the midge fly is extending its range remains to be seen.

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* Curtis Young reported the appearance of FALL WEBWORM (Hyphantria cunea) adults around security lights in NW Ohio. Fall webworm overwinters as pupae usually in the soil, but it can also survive the winter under loose bark flaps on trees or within the remains of nests from last year. Fall webworm passes through 2 generations each year, however the 1st generation is usually small and inconspicuous. This year could be a different story if a larger than normal number of overwintering pupae survived the winter compared to other years. If this is the case, 1st generation fall webworm could be much larger than normal. And, if the generations start early enough, there could be a 3rd or partial 3rd generation.

* Curtis Young and Erik Draper reported witnessing LAKE ERIE MIDGE MANIA! While on a photography workshop excursion to Kelleys Island, they were asked to venture out in the wee hours of the morning and the waning hours of the evening to take sunset and sunrise images. Interesting exercises, but what really struck them more than the beautiful sunrises and sunsets were the thousands ... nay ... MILLIONS of midges (a.k.a. mufflehead or mucklehead) (Family Chironomidae) that took to flight and mating as the sun set below the horizon and disappeared shortly after the sun rose. There were so many of the midges in the air that at first glance, it looked like clouds of smoke hugging the shoreline of the island. To add to the visual fascination, the noise that the bellowing clouds of midges were making was unbelievable! It sounded like people were running numerous whiny little power tools all over the island. The sound was generated by the millions of tiny wings beating.

* Another interesting find on Kelleys Island was a FISHFLY (Order Neuroptera). Fishflies like dobsonflies are aquatic insects whose eggs and larvae are found in bodies of water and the adults are usually found near these bodies of water. They are relatively weak fliers, thus they do not venture far from their breeding sites. They are also relatively large insects that are easy targets for predators. They are fascinating in appearance to some while others find them primitive and ferocious-looking.

For More Information:
OSU Extension FactSheet - Fall Webworm Management

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**Hordes of Mosquitoes Abuzz in Ohio**
BYGLers throughout Ohio reported that harassment by blood-sucking mosquitoes is high and many are asking what can be done. The mosquitoes are being encountered in backyards, parks and woodlots. A somewhat surprising experience that Curtis Young and Erik Draper had this past weekend was a weekend-long photography workshop on Kelleys Island. This workshop included sunrise and sunset sessions in areas where one would think mosquitoes would be horrific, yet not a single slap was needed. Mosquitoes were absent or nearly so from the island. Go figure! On the mainland, on the other hand, mosquitoes are running rampant. Many of the more common mosquito species currently plaguing homeowners will readily reproduce around or near homes, so prevention begins at home. Mosquito larvae, or "wigglers," require some form of moisture to survive. Even temporary standing water will serve the purpose. Stagnate pools of water in ditches are obvious mosquito generators. Less obvious are clogged gutters, tire swings, potted plant trays, outdoor toys, etc. Mosquito breeding sites will be revealed by a slow, close inspection around homes.

A number of larvacidal products are available for controlling mosquitoes where permanent pools of water are part of the landscape, such as aquatic gardens. The products are based on two naturally occurring bacteria: either \textit{Bacillus thuringiensis} var. \textit{israelensis} (Bti) (e.g. Vectobac, Aquabac, Mosquito Dunks, etc.), or \textit{B. saprius} (e.g. VectoLex). These products can be highly effective; however, users must read and follow label directions for maximum effect. For more information on pesticide licensing requirements, see "INDUSTRY INSIGHTS" below.

The search continues for the most fool-proof, ever-lasting method to fend off mosquitoes, but BYGL readers are urged not to hold their breath for a miraculous answer. Mosquitoes are attracted to carbon dioxide exhaled by large animals (e.g. people). Dark clothing as well as certain floral scents in lotions and soaps also serve as "eat here" signs to mosquitoes.

Insect repellents may provide some relief from mosquito bites. Products containing DEET (N,N-diethyl-meta-toluamide) (e.g. Deep Woods Off!, Repel Sportsman Max, Backwoods Cutter, etc.) have long been effectively used to repel mosquitoes. In recent years, two new compounds have been added to the repellent arsenal. Picaridin (e.g. Cutter Advanced) and oil of lemon eucalyptus (e.g. Cutter Lemon Eucalyptus Insect Repellent, Repel Lemon Eucalyptus, etc.) are now widely available. Remember that insect repellents are not fool-proof or ever-lasting; however, they can provide some protection and relief from buzzing blood-suckers.

For More Information:

OSU Extension Bulletin 641, "Mosquito Pest Management"
http://ohioline.osu.edu/b641/index.html

Did They Really See What They Think They Saw?

Curtis Young and Dave Shetlar both reported that they have received inquiries over the past week about whether Ohioans could possibly be seeing PERIODICAL CICADAS (\textit{Magicicada septendecim}) emerging in eastern Ohio. The identification of the insects in question was verified from images posted to eXtension. They were most definitely the "red-eyed" beasty that is the periodical cicada. Technically, Ohio is not expecting an emergence of periodical cicadas until 2016 (Brood V). However, sporadic emergences of the periodical cicadas can occur at any time from 1 to 4 years before or after the expected year of each recognized Brood. The following is from a web site dedicated to periodical cicadas (http://magicicada.org/about/brood_pages/broods.php) (this is also a site where observations can be reported):

"Straggling and spurious broods - Sometimes periodical cicadas emerge "off-schedule" by one or more years. This phenomenon is often referred to by the general term "straggling," although straggling cicadas can emerge either later or earlier than expected. Straggling makes it difficult to construct accurate maps of periodical cicada brood distributions, and historical reports of emergences often contain little or no information about how many cicadas were seen. Straggling emergences in which one or two cicadas are present are common; larger unexpected emergences of thousands of individuals have been reported (e.g. Dybas 1969). Stragglers are almost certainly responsible for reports of "spurious broods" that are not generally recognized and that are not listed above."

At least one of these off-schedule emergences was in Wintersville in Jefferson County, Ohio. These off-schedule
emergences may be how the different Broods originated in the first place. However, observations of these recent early and late emergers revealed that most of them do not survive long enough to successfully reproduce.

For More Information:
Penn State University FactSheet - Periodical Cicada
http://ento.psu.edu/extension/factsheets/periodical-cicada

The Leaves Have Eyes

Joe also reported observing MAPLE EYESPOT GALLS on maple leaves in southwest Ohio, or perhaps they were observing him(?). The galls appear as circular spots on the upper and lower leaf surfaces. They are produced by the midge fly, *Aceria ocellaris* (Diptera Family: Cecidomyiidae). The midge’s scientific name is descriptive since *ocellaris* comes from the Latin word *ocellus*, meaning "eye". The galls first appear as slightly raised bumps with dark green centers bounded by a brilliant, deep-red ring. Later, the centers turn tannish-brown and are bounded by concentric rings of white, red, black, and occasionally yellow. Indeed, this striking ring arrangement makes the galls look like eyes.

The midge flies spend the winter as pupae in the soil. Adults emerge in early spring and lay eggs on newly expanding leaves. The resulting maggots secrete chemicals that direct undifferentiated leaf tissue to form dimples (galls) around the maggots. The sessile maggots imbibe plant juices that ooze into their gall. The colorful concentric rings around the gall develop as the maggots mature. Once their development is complete, the maggots drop from the bottom of the leaf to pupate in the soil. At this point, the centers of the galls also drop from the leaves producing circular holes. There is only one generation per season.

The damage caused by maple eyespot galls rarely matches their dramatic appearance. In some years, the midges produce enough galls to catch the eye. However, in most years, the galls are somewhat rare since the flies are eyed as fodder by a range of predators, parasitoids, and pathogens.

Spittlebugs "Spitting"

Curtis Young reported that MEADOW SPITTLEBUG (*Philinus spumarius*) is producing its tell-tale frothy, spittle-like masses on a variety of herbaceous plants in northwest Ohio. Joe Boggs noted that DOGWOOD SPITTLEBUG (*Clastoptera proteus*) and PINE SPITTLEBUG (*Aphrophora parallella*) are doing the same on their namesake hosts in the southwest part of the state. The frothy masses are produced by spittlebug nymphs (family Cercopidae); adults of these insects are called "froghoppers."

Nymphs are found embedded within the frothy mass. The foamy "spittle" serves several functions including keeping the nymphs moist and protecting them from predators and parasitoids. Despite their common name, the bubbly mass is not produced by the nymph's mouth; it arises from the other end. The nymphs feed by using their piercing mouthparts to extract plant sap. Like many other sucking insects that tap into phloem vessels, the spittlebugs extract a greater quantity of sap than is required for sustenance. They expel the excess sticky, sugary sap much like certain aphids and soft scales excrete "honeydew." However, spittlebugs take the process one step further by using special glands near their anus to pump air into their honeydew. Thus, an alternative common name proposed by Dave Shetlar is "anal bubble bugs."

Most types of spittlebugs cause little harm to their hosts and are primarily viewed as oddities. Dogwood spittlebug is a good example. While they may feed on all species of dogwoods in Ohio's woods and landscapes, their "damage" is mostly relegated to the unattractive appearance of the spittle-mass as well as the unsightly occurrence of blackened foliage produced by sooty molds colonizing spittle that drips onto leaves.

Meadow spittlebug feeds on over 400 species of plants and is a common occurrence in naturalized areas where they cause little concern. It's a different matter when they appear on alfalfa, wheat, oats, corn, and strawberries where they can cause plants to become stunted and wilt. Alfalfa yields may be reduced by 30 - 50%. Pine spittlebug may be found on Scotch, Austrian, and eastern white pines as well as all spruces and firs. Heavy infestations and intense feeding activity can clog the
vascular system causing new shoots to be stunted or killed. Feeding wounds have been found to serve as entry points for certain infectious fungal diseases such as Diplodia tip blight. As with dogwood spittlebug, black sooty molds can produce an unsightly mess when they colonize spittle that has dripped onto needles and branches.

Fortunately, spittlebugs usually occur in relatively low numbers and can be effectively controlled by crushing the nymphs by hand. Heavy populations can be suppressed by applying an insecticide labeled for use on the affected host.

For More Information:
OSU Entomology Bug Doc Fact Sheet
http://bugs.osu.edu/bugdoc/Shetlar/factsheet/christmasstree/pine_spittlebug.htm
North Carolina IPM Fact Sheet
http://ipm.ncsu.edu/ag271/forages/meadow_spittlebug.html

Grass Bagworm

Joe Boggs reported that grass bagworms (*Psyche casta*) are pupating in southwest Ohio. This small-sized relative of the COMMON BAGWORM (*Thyridopteryx ephemeraeformis*) is sometimes mistaken for their much larger arboreal cousin; however, grass bagworms occur much earlier in the season. They usually complete their development in Ohio at about the same time or shortly after the overwintered eggs of common bagworms hatch.

Grass bagworms primarily feed on grasses, mosses, lichens, and other low growing plants. They may occasionally be found feeding on tree leaves; however, damage is seldom noticeable. The caterpillars construct their bags from parallel bundles of grass or plant stems. The bags are at first green but later turn brown as the stems dry. Grass bagworms become most obvious when the caterpillars climb vertical surfaces (e.g. tree trunks, fence posts, building walls, etc.) to pupate. They have been connected to woodpeckers hammering on the sides of homes in search of these tiny morsels of meat.

The appearance of these small bagworms may cause landscapers to incorrectly conclude that the eggs of common bagworms have hatched, or that common bagworms have two generations. Both types of bagworms only have one generation per year in Ohio. Unlike common bagworms, grass bagworms cause little damage and infestations seldom warrant control efforts.

Disease Digest »

Fusarium Wilts Down Tomatoes

Erik Draper reported finding a vascular wilt disease in two different high-tunnel tomato greenhouses in northeast Ohio. This particular vascular wilt involving a Fusarium fungi, was confirmed by Dr. Sally Miller’s vegetable diagnostics lab in Wooster, Ohio. This soil-borne fungus, pathogen *Fusarium oxysporum* f. sp. *lycopersici*, causes a wilting of foliage and collapse of tomato plants and is commonly known as Fusarium Wilt of tomato. The Fusarium fungus infects plants through the rootlets and wounds on the plant’s roots; eventually, it invades the xylem tissue, which moves water, nutrients and ultimately the fungus too, throughout the plant. Individual leaves and shoots on plants infected with Fusarium become yellow and begin to wilt down. Sometimes only one shoot or one side of the plant is affected, creating a yellow flag effect. Typically, tomato plants which are infected by this fungus usually die. A dark-brownish vascular discoloration extends up the stem and into the lower leaf petioles. Symptoms most often began to appear during fruit sizing, a growth phase which requires a significant amount of water to be moved into and within the plant.

Once present, Fusarium overwinters and survives for many years in the soil as spores. This fungus can be spread via seed, transplants, and soil on farm machinery. Environmentally, warm weather conditions complement this disease’s ability to infect plants. Disease development, on plants growing in infected soils, is favored by warm temperatures, specifically 80 - 83°F, dry weather, and acidic soil (pH 5 - 5.6) conditions. Tomato plants with extremely succulent growth encouraged by the use of ammonium nitrate as a nitrogen source are especially susceptible to infection by Fusarium. Nitrate nitrogen sources are preferred when this disease has been identified in a high-tunnel growing situation. Crop rotation also becomes a
very critical tool to assist with managing this disease.

For More Information:
- OSU Extension FactSheet - Fusarium and Verticillium Wilts of Tomato, Potato, Pepper, and Eggplant
  [http://ohioline.osu.edu/hyg-fact/3000/3122.html](http://ohioline.osu.edu/hyg-fact/3000/3122.html)
- The World Vegetable Center FactSheet - Tomato Diseases- Fusarium Wilt

Turf Tips »

**Keep Watering That Young Turfgrass**

Relatively new turfgrass, whether established last fall or this spring, is still tender and easily damaged even after it is up and growing. The leaves may look green and lush but roots are still growing and developing. Stress situations, such as the drought some areas are currently experiencing, can damage tender young turf resulting in poor growth, thin turf and excessive weed competition.

Any newer turf installations, seed or sod, should be watered on a regular basis. The rule of thumb is to provide 1" of irrigation per week to established turf. Young turf may need to be watered more frequently during dry weather. The best method for determining whether or not to irrigate is to touch the soil and make sure it is moist near the surface and 1 - 2" below the surface. Several light irrigations will likely be needed during rain-less weeks.

New seedings, on the other hand, need to be kept moist until the grass seed has germinated and is growing. This would require several waterings per day especially during hot dry weeks. If possible, do not renovate or seed more of an area than can be easily watered on a regular basis. Fall is the better time for major lawn renovations as soil moisture is generally better for seed germination and growth.

For More Information:
- Managing Turfgrass Under Drought Conditions
  [http://ohioline.osu.edu/hyg-fact/4000/4029.html](http://ohioline.osu.edu/hyg-fact/4000/4029.html)
- Lawn Establishment
  [http://ohioline.osu.edu/b546/index.html](http://ohioline.osu.edu/b546/index.html)

Industry Insight »

**Ambrosia Beetle Redux: A Diagnostic Case Study**

In BYGL 2012-01 (04/05/12), it was reported that ambrosia beetle activity was occurring in both nurseries and landscapes in several areas of Ohio, and a detailed description of these fascinating beetle as well as control recommendations was provided. This week, Joe reported on a site visit that provided an instructive "case study" regarding proper identification of ambrosia beetles as well as how to separate these beetles from bark beetles. Joe visited a landscape in the southwest part of the state that had five out of six recently planted 'Cloud 9' flowering dogwoods heavily festooned with "frass toothpicks", the calling card of ambrosia beetles! The trees had been planted in the landscape for only about two weeks, so aside from asking for a pest ID, the landscaper also wanted to know, "When did the trees become infested?"

Ambrosia beetles belong to the family Scolytidae which also includes bark beetles. Beetles in this family are usually very small, measuring only 1/8 - 2/8" long, and they produce tiny shot-sized holes in the bark. However, the hole-making behavior and larval feeding activity of ambrosia beetles is very different from bark beetles and knowing the differences is important to identifying which type of beetle is at work and determining when an infestation was initiated.

Bark beetles are phloem-feeders. Adults bore through the bark but they only tunnel through the phloem where they feed and lay eggs. Once the eggs hatch, the larvae continue to tunnel and feed in the phloem. The resulting "brood galleries" etched onto the surface of the xylem have characteristic shapes depending upon the beetle species; some galleries look like giant centipedes. However, the larval tunnels do not extend into the xylem. Once the larvae complete their development, the new crop of adults emerge directly through the bark producing a new, and usually more numerous, set of shot-holes.

Ambrosia beetles bore through the bark and straight into the xylem. As the female beetles tunnel forward into trees to lay
eggs, they push a mixture of excrement (frass) and wood particles backwards. The sticky mixture clings together as it is extruded from the entrance holes and has been commonly described as looking like "frass toothpicks". The beetles release fungi from specialized oral structures called mycangia and the fungi colonize the wood. Ambrosia beetle larvae do not eat wood; instead, they eat the fungal "ambrosia" that grows from the walls of the tunnels created by the adults. Once the larvae complete their development, which occurs deep within the xylem, the new crop of beetles make their way out of trees using the same tunnels and holes created by their parents; they do not produce more shot-holes through the bark.

So, frass toothpicks emerging from the bark means ambrosia beetles, not bark beetles. However, shot-holes in the bark may point to bark beetles or ambrosia beetles. All can be revealed by cutting away the bark. Holes bored directly into the xylem means ambrosia beetles; brood galleries extending throughout the phloem mean bark beetles.

What about the timing of the infestation? In the case of the flowering dogwoods, the depth of the tunneling (indicated by the length of the toothpicks) revealed a forensic time-line that showed the beetles had only recently discovered of the trees. Indeed, the landscape was surrounded by a heavily wooded area which was a perfect source of ambrosia beetles. Of course, the final determination came from a visit by the landscaper to the nursery. While ambrosia beetles have become a very serious nursery pest, no dogwoods in the nursery had been removed or destroyed and no dogwoods were festooned with frass toothpicks meaning the source of the beetles was not the nursery.

For More Information:
Xyleborini Ambrosia Beetles Identification Tool Web Site
http://itp.lucidcentral.org/id/wbb/xyleborini/
Ambrosia Beetle Symbiosis Website
http://www.ambrosiasymbiosis.org/

WeatherWatch »

Current Conditions
The following weather information summarizes data collected at various Ohio Agricultural Research Development Center (OARDC) Weather Stations spanning the dates from May 1 - 23, 2012, with the exception of the soil temperatures which are readings from Wednesday, May 23, 2012 at 6:05 p.m.

The word from most BYGLers this week was dry, dry, dry! Especially compared to last year (2011), many areas of Ohio are short of rain and beginning to border on drought conditions. Newly transplanted, newly seeded or recently established plants should be watched carefully and watered regularly to avoid severe stress that could lead to infestation by stress-oriented insects or simple decline and failure.

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<td>49.3</td>
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<td>2.4</td>
<td>76.53/77.23</td>
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<td>NE</td>
<td>75.6</td>
<td>49.5</td>
<td>1.74</td>
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<td>72.66/70.25</td>
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<tr>
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<td>NW</td>
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<td>51.6</td>
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<td>68.09/69.21</td>
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<td>Central</td>
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<td>67.52/66.18</td>
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<tr>
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<td>5.66</td>
<td>3.0</td>
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</table>

For More Information:
OARDC Weather Stations
http://www.oardc.ohio-state.edu/centernet/weather.htm

Coming Attractions »

2012 Commercial New Applicator Trainings Scheduled
The Ohio State University Extension’s Pesticide Safety Education Program has scheduled four training dates for those preparing to take the commercial applicator's exams including Core, 8 (Turf), 5 (Industrial Vegetation); 6c (Ornamental
Weed) and 2c (Agricultural Weed). The morning session also qualifies as Trained Serviceperson training. The dates are August 29, 2012; and September 26, 2012. Registration begins at 8:30 a.m. Additional information, including pre-registration is available on the web at http://pested.osu.edu/commnewapp.html.

**Woody Plant ID Workshop at Secrest Arboretum - Note: Date Change!!**

On Wednesday, August 8, 2012 from 10:00 a.m. - 3:30 p.m., there will be a woody plant identification class held at Secrest Arboretum in Wooster, Ohio. This workshop will highlight plant identification terms, describe and explain them, and then show these characteristics on plants and samples, common taxonomic terms used in most dichotomous plant identification keys. Jim Chatfield and Erik Draper will be the instructors for this hands-on, samples galore workshop.

Lunch, handouts, snacks and prizes are all included in the $40 fee for this workshop. To register for this workshop or to obtain additional information, contact the Ohio State University Extension, Geauga County at 440-834-4656.

**2012 NW Ohio Summer Session**

Save the date for this year’s NW Ohio Summer Session for green industry professionals. The event will be held on Wednesday, August 1, 2012 at Owens Community College just south of Toledo, Ohio. The yearly event is kicked off with lunch, followed by concurrent sessions during the afternoon. Registration materials will be available next month.

**Plant Diagnostic Dilemmas for the Green Industry**

On Wednesday, June 13, 2012 from 10 a.m. - 3:30 p.m. there will be a plant diagnostic workshop held at Secrest Arboretum in Wooster, Ohio. The workshop will highlight the latest and greatest plant maladies and diseases that are afflicting plants throughout Ohio. As is the tradition of our diagnostic workshops, there will be multiple plant samples to help refine critical diagnostic skills. There will be exploration of findings regarding Imprelis symptoms, discussions of new and emerging diseases in Ohio and samples, samples, samples! Jim Chatfield and Erik Draper will be the instructors for this hands-on, clinical catharsis of plant diseases workshop.

Lunch, handouts, snacks and prizes are all included in the $40.00 fee for this workshop. To register for this workshop or to obtain additional information, please contact the Ohio State University Extension, Geauga County at 440-834-4656.

**Diagnostic Walkabout for the Green Industry**

The first class will be held at Sunset Memorial Park, 7:30 a.m. - 9:00 a.m., on June 7. Pre-registration is required and class size is limited to 30 per class. ODA, ISA and OCNT credits are available. For registration, location and pesticide credit information see: http://www.onla.org.

"We can complain because rose bushes have thorns, or rejoice because thorn bushes have roses." - Abraham Lincoln

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