BYGL Newsletter

June 14, 2012

This is the 11th 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 »

*Weed - Yellow Woodsorrel (Oxalis stricta)*

Yellow woodsorrel is a common summer annual in cool-season turf and gardens in Ohio. This plant, also known as oxalis and sour-grass, reproduces from seed and is one of the latest germinating summer annual weeds. Often, infestations of oxalis can be associated with spring-timed broadleaf weed control applications. The reason is that most spring-timed herbicide applications are applied before the oxalis has germinated. The result is that oxalis is perfectly suited to fill in any voids left in your turf and garden. Once established, oxalis can be difficult-to-control because summer conditions limit herbicide effectiveness. For more information on this plant, refer to "Yellow Woodsorrel" at http://www.msuturfweeds.net/details/_/yellow_woodsorrel_30/.

For More Information:

    MSU Turf weeds - Yellow Woodsorrel
    http://www.msuturfweeds.net/details/_/yellow_woodsorrel_30/

* Vegetable - Egyptian or Walking Onions (Allium cepa var. proliferum)*

This distinct onion is difficult to miss in the garden, leading one to stop and figure it out! This unusual onion can be eaten like chives or early spring onions when it first emerges. However, when it's ready to bloom, it sends up a green stalk 2 - 3' tall that gets as thick as one's thumb. At the end of the stalk appear clusters of small onions that are called bulbils. These can be harvested and eaten like shallots or pearl onions; they have a much stronger flavor than shallots.

The "walking" moniker comes from the fact that after the plant sets its bulbils on top of the stalk, it sends out a shorter stalk where the flower emerges and sets another set of bulbils. This second set of bulbils is heavy enough to weigh down the initial stalk, thus allowing the bulbils to make soil contact and voila - "walk." These bulbils develop roots away from the mother plant, thus propagation is ensured. One can keep a walking onion patch under control by separating and planting the individual bulbils about 8" apart in rows. They can be planted in spring or fall, in full sun with good drainage. These onions are perennial, coming back each year.

Walking onions won't produce bulbs at the base like normal onions do; rather, they develop several large bunching onions in the ground. These can be eaten as well. Use in the garden or in the edible landscape. They are quite interesting! Provide good drainage and full sun or a very light shade and they'll be around for many years.
It is a great year for magnolias from the early star and saucer magnolias (which did get nipped by hot weather and frosts), the 'Little Girl' and other hybrids, the waxy-textured yellow magnolias, and now the ever northward-surviving southern magnolias and, perhaps, most lovely and versatile of all, sweetbay magnolia. This is a great small tree or multi-stemmed shrub with simple glossy green leaves (silvery below), and very aromatic sweet lemony flowers. This small landscape magnolia is a favorite of many horticulturists, and BYGLers cherish the memory of our friend and landscape architect, designer, and installer Ricky Thomas of Norton, who loved this tree above all others. 

Sweetbay magnolia tolerates wet soils and shade, prefers acid soils. Michael Dirr notes: "lovely, graceful small patio or specimen tree…excellent for the sweet fragrance of its flowers."

Lavender is in the mint family and does best in full sun in dry, well-drained soils. This plant absolutely does not tolerate wet soils. In addition, summers that have high humidity and lots of rain can be detrimental to these plants. The gray-green foliage makes this an attractive plant for the perennial border; plants grow to around 2 - 3' tall with a similar spread, depending upon the cultivar. Lavender flowers appear in early June and are held on stems above the plant and can last for 2 - 3 weeks. Cut the flower stems back into the plant when it's finished blooming as this will encourage additional flowers. Lavender is sometimes classified as a "subshrub;" it has a tendency to get a little woody. When it gets a little straggly or unkempt, cut it back in the early spring before new growth resumes. Some like to keep it neat and orderly in regards to the shape and size of the plant. Do this by cutting back to about 6'' tall each spring.

For More Information:
Cornell University Growing Guide on Egyptian Onions
http://www.gardening.cornell.edu/homegardening/scene18b1.html
University of Tennessee Gardens Plant of the Month information on Walking Onion
http://utgardens.tennessee.edu/pom/onion.html

*Woody - Sweetbay Magnolia (Magnolia virginiana)

*Perennial - Common Lavendar (Lavandula angustifolia)

*Annual - Vinca or Rose Periwinkle (Catharanthus roseus)
The secret to success with this plant is that it likes its “feet” warm, therefore don’t plant in cold soils! This sun-loving, heat-loving annual won’t tolerate cold soils and usually ends up with rotted roots if sitting in cold soils for prolonged periods. Ohio gardeners tend to push the envelope and plant this one early in the spring along with other bedding plants. The best time for planting this in central Ohio is generally late May. This year, of course, was a little different!

Almost all cultivars of this plant, except for the spreading ones, grow in a mound about 1’ tall and 1’ wide. The colorful flowers last all season, hanging on until a hard frost. Flowers come in pink, white, red, salmon, and a combination of these colors (white with red eye, etc.). The glossy green foliage has few pest issues. They can be used in a perennial border, as bedding plants, and in containers. The vining or trailing varieties (Mediterranean and Cora Cascade) are excellent for hanging baskets or hanging over the edge of a container.

For More Information:
- Missouri Botanical Garden Kemper Center for Home Gardening information on Catharanthus roseus
- University of Illinois Extension Gardening with Annual information on Vinca
  [http://urbanext.illinois.edu/annuals/directory_detail.cfm](http://urbanext.illinois.edu/annuals/directory_detail.cfm)

### Hort Shorts »

#### Size Matters

The size of the produce matters tremendously when selling fruits and vegetables. The variable rainfall has left some producers with lush growth and others with barely enough water to keep the crops from wilting. Plants need water to pump up leaves, and more importantly, fruit. The period of rapid fruit expansion, from small green marble to juicy berry or pome, requires a significant and regular supply of water. The general rule of 1’ per week is on the low side for fruit growth and efforts should be made to exceed that amount if possible.

#### Absent Apples

Apple trees with little to no fruit is a problem in some areas of Ohio this year along with paltry peach and pear crops. The repeated freezes and resulting pollination problems have led to significant fruit drop. The developing fruit needs to have a viable seed (or several seeds in apples) in order to grow to maturity. Without the viable seed(s) the fruit will drop from the tree. Peaches and pear seem to have had the most significant fruit loss. Apples didn’t fair much better, though their loss seems to run along varietal lines; some varieties have lost nearly all of their fruit while others have held onto a moderate amount.

#### 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/](http://www.oardc.ohio-state.edu/gdd/).

The range of GDD accumulations in Ohio from north to south is 905 to 1,321. Following is a report of GDD for several locations around Ohio as of June 13, 2012: Painesville, 905; Cleveland, 968; Toledo, 1,092; Canfield, 988; Findlay, 1,115; Van Wert, 1,130; Wooster, 1,032; Coshocton, 1,155; Columbus, 1,321; Springfield, 1,247; Dayton, 1,249; Cincinnati, 1,278; Ironton, 1,295; Portsmouth, 1,296; and Piketon, 1,265.

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...
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.

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; June bride littleleaf linden, full bloom, 1,115; bottlebrush buckeye, first bloom, 1,158; Ural falsespirea, first bloom, 1,170; panicled goldenraintree, full bloom, 1,251; rose-of-Sharon, first bloom, 1,347; pine needle scale, egg hatch - 2nd generation, 1,349; mimosa webworm, egg hatch - 2nd generation, 1,920; euonymus scale, egg hatch - 2nd generation, 1,923; magnolia scale, egg hatch, 1,938; and banded ash clearwing borer, adult emergence, 2,195.

This will be the last reporting of GDD for this year. Most locations for which GDD is being reported have accumulated enough GDDs to have exceeded most of the pests and flowering plants that are included in the phenology table. Reporting of GDD will return in next year's BYGL. Thanks for following along!

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**

BYGLers also ran into a few other arthropods this week including:

* Joe Boggs reported receiving an e-mail about a large number of MILLIPEDES suddenly appearing on the outside of a building in southwest Ohio. These worm-like arthropods occasionally beat-feet in large groups for reasons that are not entirely understood. It has been speculated that millipede stampedes may be in associated with mating behavior, or in response to drought or flooding. Fortunately, such mass migrations are short-lived and those that wander into homes will dry-out and quickly die becoming easy fodder for vacuum cleaners.

Millipedes range in color from tan to brownish-black. When disturbed, they curl their bodies into a spiral "watch-spring" configuration. Their armored segments each possess two pairs of legs; the legs in some species are hidden beneath the body causing the millipedes to appear to float as they undulate over the ground. Millipedes feed on decaying organic matter, so the most effective long-term management option is to reduce the proximity of organic matter (e.g. mulch) near foundations. An 8 - 12" mulch-free zone near structures is recommended. Also, irrigation should be closely managed to avoid providing a continual wet-zone near the buildings.

* Curtis Young reported that he is observing dozens of small buff-colored moths flitting up from the turfgrass in many areas around NW Ohio and gathering at his porch lights in the evening. The clustering and flitting moth is the LUCERNE MOTH (*Nomophila nearctica*). This moth is one of the webworms that can be found in turfgrass. The caterpillar looks similar to other webworms, but tends to be more slender than the other species. Reported hosts of the caterpillar include a wide variety of low growing plants such as celery, grasses, *Polygonum* species, and sweet clover. At this point, the webworm does not appear to be a serious concern, but in combination with other turf-feeding insects, it could be a contributing factor to declining turfgrass.

*Aster Disaster*
While setting up for a diagnostic clinic held in Clark County on June 7, 2012, Pam Bennett discovered a planting of asters and ornamental goldenrod that were looking very sickly. The foliage of both species of plants was very pale in color with a stippled appearance. Upon closer examination, she discovered numerous insects sitting on the upper surfaces of the leaves. The insects were a species of lace bug. Curtis Young identified the lace bugs as the CHRYSANTHEMUM LACE BUG (*Corythucha marmorata*). The chrysanthemum lace bug attack a wide variety of plants including asters, goldenrod, Helianthus, Rudbeckia, and Tanacetum.

Adult lace bugs are relatively flat, mottled creamy-white insects with lacey wings held flat over the back and are around 1/8” in length. Adult females lay groups of black eggs on the undersides of leaves near veins. Like other lace bugs, they deposit brown to black, tar-like frass on the leaves where they are feeding. Nymphs are covered in spines and have triangular shaped heads. There may be 2 or more generations per year.

Unlike many of the lace bugs, the chrysanthemum lace bug feeds on both the upper and lower leaf surfaces, thus the insects are observed sitting on the upper leaf surface. Lace bug damage is first noticed as yellow spots on the upper leaf surfaces of affected plants. The first yellow spots that appear are very similar to mite damage, but the spots made by lace bugs are much larger. When feeding damage becomes severe, the leaves take on a gray-blotched appearance. Eventually, the leaves turn brown and die. Usually older leaves are attacked first. Later in the growing season, new growth may be damaged as well.

Management of chrysanthemum lace bug is accomplished by applying a chemical control (e.g. acephate, malathion, permethrin) in late May, following egg hatch. Direct the spray from the bottom of the plant upward to ensure thorough coverage of the lower and upper leaf surfaces. A systemic insecticide such as imidacloprid (e.g. Merit) applied to the soil in the spring could give season-long control.

To add insult to injury, the asters were also discovered to be infected with white mold (see article under Disease Digest).

**For More Information:**
University of California IPM PestNotes - Lace Bugs  

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**Porch Lights Shed Light on Cockroaches**

Curtis Young and Joe Boggs reported that WOOD COCKROACH (*Faro:Alatta pennsylvanica*) males are appearing at porch lights in northwest and southeast Ohio, respectively. 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 makes 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 them easy targets for the "cockroach stomp" ... which also produces the disgusting side-effect of the "cockroach smear and scrape." While simply shepherding the occasional wayward wood cockroach outside may be far less dramatic, it is also less messy.

**For More Information:**
Joe Boggs noted that the galling handiwork of *Taxodiomyia cupressianana*, a tiny midge fly with a large scientific name, is becoming evident on their namesake host in southwest Ohio. The spongy, elongate, 1/8 - 1/2" long galls produced by the fly appear white due to a covering of fine, powdery material. Rubbing the powder off the galls reveals their true light green color. The common name "twig gall" is technically inaccurate since the galls actually arise from the base of leaflets. Needle growth extends through the galls with the needles protruding beyond the surface of the galls and a portion of this season’s growth usually extends beyond the tips of the galls.

Opening the galls will reveal the tiny, orangish-yellow midge fly larvae (maggots) that directed gall formation. Each maggot is individually housed in its own tiny compartment. Once maggots pupate, and a new set of adults emerge, the galls will eventually shrivel and detach from the trees. At this time, the leaflet growth extending beyond the gall will sometimes die and turn reddish brown producing an unsightly appearance. Adult flies emerge from the fallen galls on the ground. The flies may have two generations per year with a second set of galls appearing in late-July or August. The second generation gall-makers spend the winter on the ground as pupae in fallen galls. Although the galls and browned-tipped foliage may reduce the aesthetic appeal of infested trees, the flies appear to cause no appreciable harm to the health of the tree. Populations are often regulated by a wide range of parasitoids that target the maggots. Therefore, insecticide applications are not recommended. Pruning and destroying galls now on small trees will reduce the number of future galls.

For More Information:
University of Florida Creature Feature
http://entnemdept.ufl.edu/fasulo/woodypest/400.htm

BYGLers noted that fleecy white PLANTHOPPER nymphs are appearing on the lower stems of herbaceous perennials and low-growing woody ornamentals in several areas of Ohio. Planthoppers belong to the Family Flatidae (Order Hemiptera; Suborder Auchenorrhyncha), and are sometimes referred to as "flatids." The nymphs of several flatid species cloak themselves in a dense tangle of waxy, white "fluff." They also congregate in groups, or "colonies," and their profusion of flocculent material on affected plant stems draws attention to the insects. The nymphs also produce copious quantities of honeydew which may coat the plant and become colonized by black sooty molds.

Planthoppers are related to aphids and the nymphs are sometimes mistaken for woolly aphids. However, planthoppers ... hop. Aphids just mosey around. Planthopper adults are 1/4 - 3/8" long, purplish blue, lime green, or powdery white, and they hold their broad wings vertically in a tent-like fashion covering the sides of the body and legs. They usually have little impact on the overall health of landscape plants and seldom become more than a nuisance pest. The nymphs can be washed from affected plants using a coarse stream of water, or killed using an insecticide labeled for use on the host plant.

For More Information:
N.C. State Entomology Ornamentals and Turf Insect notes
University of Minnesota IPM of Midwest Landscapes
http://www.entomology.umn.edu/cues/Web/187Planthopper.pdf

Monitor for Clipped Coneflowers
Joe also reported receiving an e-mail message describing coneflowers with clipped flower heads. The most likely culprit is the SUNFLOWER HEAD-CLIPPING WEEVIL (Haplorhynchites aeneus), a well-documented pest of cultivated and wild sunflowers (Helianthus spp.) in the Great Plains States. The weevil is also known to infest other members of the Aster Family (Asteraceae = Compositae). However, coneflowers appear to be a less well-known menu item based on the literature; few sources mention this host.

The shiny black to brownish-black weevils are a little over 1/4” long which includes their exceptionally long, curved snout. As with all weevils, this beetle’s mouthparts are located at the end of their snout. The females insert their snouts into the flower stems to chew a ring of holes around the stem about 1 - 1 1/2” below the flower head. The flower stem is not completely cut; the damaged stem just breaks-over causing the flower head to hang from a thin strand of stem tissue.

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

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

For More Information:
Kansas State University Fact Sheet
http://www.entomology.k-state.edu/DesktopDefault.aspx

"Invisible" Bagworms

It is not uncommon for COMMON BAGWORM (Thyridopteryx ephemeraeformis) populations to go undetected until the caterpillars have caused significant damage to their plant host.

There are a number of reasons for these diagnostic oversights. While bagworms are most often associated with conifers, the caterpillars may feed on over 130 species of plants. Sometimes bagworms are missed because they are feeding on an "unexpected" host. Another reason bagworms are overlooked is because they start out so small. First instar bagworm bags measure around 1/8" in length; they are easy to overlook. Finally, the caterpillars construct their bags with plant debris woven into the bag's silk. Not only does the plant material provide structural stability, it also imparts the perfect camouflage to the caterpillar's bag-abodes.

Just how easily a burgeoning bagworm population can be missed by even "trained eyes" was illustrated this week by two reports. Curtis Young reported that he brought a juniper sample that was loaded with first instar bagworms to a recent diagnostic workshop. Despite being closely examined by over 30 diagnostoids, the tiny bagworms were totally missed by the entire group. Size matters.

Joe Boggs owned-up to his own recent bagworm blunder based on a preconceived diagnosis. He had noticed ratty looking foliage on his Knockout roses but chalked it up to the BRISTLY ROSESSlug SAWFLY (Claudius diffusus). The sawfly has multiple generations and he had battled the pest in past seasons. However, he noted that despite giving the roses an inspection on two occasions, he had been unable to find the sawfly larvae. Also, holes were appearing in the leaves without the pre-occurrence of the "windowpane" symptom caused by the sawfly. Early instar larvae of this sawfly feed as leaf...
skeletonizers on the lower or upper leaf surfaces. The corresponding epidermis on the opposite side of leaf remains intact and eventually turns white producing the “windowpane” symptom. Of course, Joe reported that during a recent examination of his roses, the true culprit finally came into sharp focus: bagworms!

While the cone-like bags of bagworms are relatively easy to spot once the caterpillars reach late instar stages, particularly when the bags dangle from the denuded branches of a decimated host plant, the presence of early instar bags may be masked by their size, their camouflage, or by a predetermined diagnosis. Regardless, the take-home message is that since early detection is essential for avoiding the substantial damage that can be caused by these general defoliators, look sharp!

For More Information:
Purdue University, Department of Entomology Extension Fact Sheet

Fall Webworm: A Third Generation?

In BYGL 2012-08 (05/24/12), Curtis Young reported observing large numbers of fall webworm moths (*Hyphantria cunea*) fluttering around a security light in northwest Ohio. Normally, fall webworm has 2 generations per year in Ohio. However, Curtis’ report suggested that with record warm temperatures this spring giving the webworms an early start, there may be 3 generations in some areas of the state. Indeed, Joe Boggs reported this week that first generation nests in southwest Ohio are already approaching sizes that are usually not seen until much later in the season.

Fall webworms only feed on leaves that are enveloped by their silk nest. As caterpillars grow in size, they expand their nest by casting silk over more leaves to accommodate their expanding appetites. In "normal" years, first generation nests are seldom as numerous or as large in size as those produced by the second generation; the first generation nests normally involve only a few leaves. Female moths often lay their eggs on or near the nests from which they developed, thus second generation caterpillars expand the nests once occupied by first generation caterpillars. The second generation nests typically reach their maximum size in the fall which accounts for the common name. However, a third generation this season may result in truly record-breaking sized nests.

There are two types of fall webworms, known as "races," and both races are found in Ohio. The two races differ in coloration, and to some extent, they also differ in host preferences, nesting behavior, and the timing for spring adult moth emergence. Caterpillars of both races are very hairy and they feed as skeletonizers on leaves enveloped by webbing. The caterpillars of both races may also be found on a wide variety of shade, ornamental, and fruit trees. Both races normally pass through two generations per year and they spend the winter as pupae in cocoons located in leaf debris or in the upper layer of the soil; however, moths emerge at slightly different times in the spring.

The so-called "black-headed race" webworm caterpillars have black head capsules and two rows of black bumps (tubercles) running the length of their yellowish-white bodies. Black-headed caterpillars typically feed in a common web until they are half-grown, then they may separate to produce small, elongated, wispy nets along tree branches that envelope only a dozen or so leaves. Black-headed race moths usually emerge from overwintering cocoons prior to the adult emergence for the red-headed race.

"Red-headed race" webworm caterpillars have red to reddish-orange head capsules and two rows of reddish-orange tubercles running the length of their light to dark tan bodies. Adult moths usually emerge from overwintering cocoons 2 - 3 weeks after the black-headed race adults have emerged. Red-headed webworms remain together throughout their development to produce truly spectacular multilayered nests enveloping dozens of leaves at the ends of branches. Although first generation female moths of both races often lay their eggs on or near the nests from which they developed, this is behavior is most commonly practiced by the red-headed race which explains their often truly spectacular sized nests.

If first generation nests are few in number and easily accessible, the best control approach is to physically remove and destroy the nests and caterpillars. Insecticide applications should be used sparingly since insecticides may limit the impact of bio-allies. There are over 50 species of parasitoids, and 36 species of predators known to make a living off of fall webworms. In past seasons, parasitoids have proven to be very effective in reducing year-to-year populations of this defoliator.

For More Information:
In the past few days the Clinic has examined a number of plant problems. From the landscape, the clinic examined English ivy experiencing dieback of the stems. Anthracnose (Colletotrichum sp.) and Phomopsis were isolated from the stems of these plants. A weeping cherry showed evidence of branch end dieback caused by a different Phomopsis fungus. A white pine sample from a nursery had Phytophthora root rot. From the greenhouse, a begonia sample tested positive for impatiens necrotic spot virus and for tomato spotted wilt virus; a geranium was infected with Pythium root rot. Vegetable samples included snap bean seedlings with damping off. Fruit samples included a strawberry sample with symptoms of potato leafhopper, a grape with black rot, and peach exhibiting nutrient deficiency symptoms typical of nitrogen deficiency.

For More Information:
C. Wayne Ellett Plant & Pest Diagnostic Clinic, Ohio State University
http://ppdc.osu.edu

Clinic Clips
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Just in from Crablandia: Crabapple Disease Report
As all Ohioans know, crabapples are out of this world, and we proved that last year when crabapple seeds collected from OSU's Secrest Arboretum were launched into space as part of NASA's Student Spaceflight Experiment Program. They went, they came (back) and they germinated. Of course, the real reason for the Crablandia evaluation plots at Secrest is to assess disease incidence over the seasons and years, especially such infectious diseases as apple scab, frogeye leaf spot, and fireblight. So, what is this year's toll?

Apple scab (pathogen: the Venturia inaequalis fungus) got off to an early start with our 2 - 3 weeks early flowering and leafing for most of these ornamental Malus taxa. More recently, however, as in the past 6 - 8 weeks in which we have a deficit of from 4 - 6" in this northeast Ohio area, scab has not reared much of its ugly head. Crabarians Erik Draper and Jim Chatfield in fact, wonder if this may turn out to be the lowest overall apple scab incidence for our plot in the past 20 years. It is too early to tell, but for now, scab is mostly a scratch. Frogeye leaf spot and fireblight also have low apparent incidence in the Secrest plots at this time.

To close, remember this short ditty about crabapple. By definition crabapples are pomes (fleshy fruits from compound ovaries) and in the genus Malus. Their fruits at maturity are under 2" in diameter, with not much meat on the bone for such pests as codling moths and apple maggots. From the First Lord of Pome-roy, a limerick…

There was a young wormling from Rome
Who yearned to make Malus his home
He searched and he searched
For a perch to besmirch
But crab-apple was too tiny a pome

Black Rot Control in Grapes
Gary Gao reported that he received phone calls about black rot control in grapes. Nancy Taylor of CWEPPDC also reported that she received samples of grape leaves and berries with black rot.

Symptoms of black rot first appear as small yellowish spots on leaves. As the spots (lesions) enlarge, a dark border forms around the margins. The centers of the lesions become reddish brown. By the time the lesions reach 1/8 - 1/4" in diameter (approximately 2 weeks after infection), minute black dots appear within the lesions. These are fungal fruiting bodies (pycnidia) and contain thousands of summer spores (conidia). Pycnidia are often
arranged in a ring pattern, just inside the margin of the lesions. Lesions may also appear on young shoots, cluster stems, and tendrils. The lesions are purple to black, oval in outline, and sunken. Pycnidia also form in these lesions. Fruit symptoms often do not appear until the berries are about half grown. Small, round, light-brownish spots form on the fruit. The rotted tissue in the spot softens, and becomes sunken. The spot enlarges quickly, rotting the entire berry in a few days. The diseased fruit shrivels, becoming hard, black and wrinkled raisin-like mummies. Tiny black pycnidia are also formed on the fruit mummies. The mummies usually remain attached to the cluster.

A good fungicide spray program is extremely important for black rot control. Good timing and properly selected fungicides are all critical for successful management. Early season control must be emphasized. The most critical period to control black rot with fungicides is during the period from early bloom through 3 to 4 weeks after bloom. Grape berries will not be susceptible to black rot infection once they start turning color, which is called veraison in grape-growing terms.

Captan, a common fungicide, is only slightly effective against black rot. Mancozeb, on the other hand, is highly effective. Mancozeb is not widely available. Gardeners may need to ask a garden center or a retailer to special order Mancozeb. For the most current spray recommendations, commercial growers are referred to Bulletin 506-B2, "Midwest Commercial Small Fruit and Grape Spray Guide," and backyard growers are referred to Bulletin 780, "Controlling Diseases and Insects in Home Fruit Plantings."

For More Information:
Midwest Commercial Small Fruit and Grape Spray Guide
Controlling Diseases and Insects in Home Fruit Plantings
http://ohioline.osu.edu/b780/b780.pdf

White Stem Wonders
High-tunnel tomato growers in northeast Ohio are finding the WHITE MOLD fungus, Sclerotinia sclerotiorum, starting to cause mayhem, wilting and death. In the southwest, Pam Bennett found this same disease to be the annihilator of asters in the Clark County office's perennial display garden. This fungal disease is somewhat cosmopolitan, in that it doesn't just affect a single genus of plants, but it can attack over 170 species of plants. Some vegetables which are especially susceptible to white rot include bean, cabbage and other crucifers, carrot, cucumber, eggplant, Irish potato, lettuce, pepper and squash. This fungal disease can infect stems, petioles, and leaves of tomato plants. Infections are characterized by the plant tissue exhibiting a soft, watery rot and often the stem tissue begins to collapse. If environmental conditions remain moist, a large amount of cottony-white, moldy growth (mycelium) can be seen on the infected, dead tissue.

As the fungal growth matures, hard black, irregularly-shaped bodies, called sclerotia, may develop intertwined in the mycelia on infected tissue surfaces or inside the pith of the stem. This fungus is often nicknamed "mouse poop disease" due to sclerotia resembling mouse droppings! Sclerotia serve as overwintering or survival structures in the soil and in such structures, the fungus may survive up to 7 years in dry soils. The best management practices include rouging out and destroying infected plants as soon as possible, keeping the plant foliage dry through the use of a drip or emitter irrigation system and always rotating crops.

For More Information:
Timber Rot of Tomato factsheet

Rose Rust
There are nine different fungi which cause rust on rose, all in the genus Phragmidium. The disease may occur on leaves, sepals and stems depending upon which fungus is involved.

Infections occur in the early spring and may be overlooked; the orange pustules are visible on the underside of the leaves in the early stages of the disease. Later the pustules may be visible on the upper leaf surfaces. Infected leaves can drop or may remain attached depending on the variety of rose being grown; roses vary widely in their susceptibility and how they react to infection.
Rust spores are spread through the air and infect leaves through stomata (the breathing pores). The environmental conditions which favor infection are continuous leaf wetness for 2 - 4 hours and temperatures between 64.4 - 69.8°F. Rust causes new infections during the summer (repeating stage) with new spores being formed about every 10 - 14 days when environmental conditions are favorable. In late summer or fall the fungus develops its overwintering spores which are formed in black pustules on the leaves or stems. The fungus in these pustules will form infectious spores the following spring and the cycle will begin again.

Disease management:

* Sanitation: Reduce inoculum by removing infected leaves off of the plant during the growing season, as well as those that fall to the ground upon which the fungus may overwinter.

* Sanitation: Reduce overwintering inoculum by removing all infected leaves, including fallen leaves, and canes with lesions during the winter or early spring while the plants are dormant and before new growth begins.

* Sanitation: In small plantings and home gardens careful observation of plants in the spring and removal of any leaves showing pustules may assist in reducing the impact of the disease.

* Environmental: Avoid overhead watering if possible so that foliage is not wet for extended periods.

* Chemical: There are a number of fungicides labeled for rose rust management. The key is to make applications on a preventive schedule; when the disease is present and active in a planting the applications will be needed about every 7 days or as recommended on the product label because this fungus has a repeating cycle through the summer. Fungicides may not eliminate already existing infections but will protect newly emerging foliage.

* Timing: Make applications in the spring when weather is wet and when it is transitioning to hotter, dry weather. If the growing season is wet or if the disease is active in the planting treatments may have to continue into the summer.

- Dormant: Bordeaux or a copper sulfate material
- Tri唑oxysterbin (Compass O 50 WDG), FRAC group 11
- Flutolanil (Contrast 70WSP, ProStar) FRAC code 7
- Kresoxim-methyl (Cygnus) FRAC group 11
- Myclobutanil (Eagle 20EW) FRAC group 3
- Azoxystrybin (Heritage) FRAC group 11
- Propiconazole (Banner) FRAC group 3
- Home Garden/Noncommercial Growers:
  - Tebuconazole (Bayer Advanced Disease Control) FRAC group 3
  - Spectracide Immunox Multi-Purpose Fungicide (myclobutanil) FRAC group 3

Angst Over Anthracnoses

In Northeast Ohio, there has been a flood of samples and calls, most likely due to a heightened sensitivity toward tree killing, invasive insects, which merit a clarification about ANTHRACNOSES. We wish to emphasize to highly anxious and worried citizenry that the deformation, leaf blotching and leaf drop of ash, which is occurring right now, is in no way associated with an insect. Those misshapen, spotted or blotched leaves and ultimately the loss of those affected leaves are symptoms of a fungal disease called ASH ANTHRACNOSE, pathogen *Gnomoniella fraxini.*

Ash anthracnose occurs in landscapes almost every year, but becomes much more noticeable in years where Spring consists of cool, wet weather during leaf expansion. This year appears to be one in which ash anthracnose is more noticeable than usual; however, this fungus is not a major health problem for the plant. Why? Because a plant may lose up to one-third of all of its foliage and still be perfectly healthy and able to produce all of the carbohydrates necessary to meet its physiological requirements. What can be done right now? Fungicidal applications now will not eliminate any existing foliar damage and
Turf Tips

Any new, significant infections are not likely as the weather warms and the leaf tissue rapidly matures. Fungicide sprays earlier in spring can protect the newly emerging leaves from infections by the fungi, which overwinters on twigs on the trees, but these sprays are typically not recommended. Fungicide applications may be warranted where customer eye appeal is high, in nursery production situations, and in high profile sites such as garden centers. It should be stressed that tree anthracnose diseases are typically not major problems for the tree, even though it may look pretty dreadful in some years, before the tree refoliates.

Other anthracnose diseases intermittently noted so far this year include maple anthracnose, pathogen *Discula campestris*, and oak anthracnose, pathogen *Apiognomonia quercina*. Maples this year are exhibiting atypical symptoms consisting of blackened, necrotic leaf spots with vein-associated lesions. Oaks are just beginning to exhibit a greater amount of leaf blotching and foliar distortion on the lower portions of plants, where poor air movement and a lack of drying conditions initiate more foliar lesions.

The take home message of all of these fungal anthracoses is simply this... RELAX and don't panic because it will not affect the overall health of the tree if some leaves are lost.

For More Information:
OSU Extension FactSheet - Anthracnose Leaf Blight of Shade Trees
http://ohioline.osu.edu/hyg-fact/3000/3048.html

Industry Insight

"Green Industry Fix" Webinar II

This Wednesday morning at 7:30 a.m. we convened and learned of ambrosia beetles, the 20 questions of diagnostics, hemlock woolly adelgid, useful websites for invasive plants, pests, and pathogens, and much more from Joe Boggs, Amy Stone, and Jim Chatfield from OSU Extension. This monthly Green Industry Fix Webinar is a partnership between the Ohio Nursery Landscape Association and the Ohio State University Extension Nursery Landscape and Turf Team. The remaining scheduled webinars for 2012 (7:30 - 8:20 Wednesdays) are July 11, August 8, September 12, and October 10.

These webinars offered by ONLA are a quick, affordable, convenient way to learn...helping with WHAT you need to know, WHEN you need to know it. These are 'hot topic' seminars delivered to your computer and hosted by speakers from the Ohio State University Extension Nursery, Landscape & Turf Team. You will be given timely and useful information on current and emerging issues critical to your green industry business: from plant selection to pest management, from weed control to product knowledge, from invasive species to infectious diseases. It's a short course class delivered to your office! Webinars are visual and will include many images of pests and plants.

For registration information for the Get Your Green Industry Fix webinars, contact ONLA at 614-899-1195 or 800-825-5062.

Hemlock Woolly Adelgid

We have written previously in BYGL of this serious invasive pest of hemlock trees (*Tsuga spp.*) that debilitates trees over time. It is a sad sight in North Carolina and West Virginia forests where...
serious natural woodland infestations occur. It was not found in
forested natural areas in Ohio until January 2012. It was
discovered in southern Ohio in the Marietta and the Hocking Hills
area. New efforts are underway in those areas for management
and control. As far as the green industry connection to this pest,
we have had several occurrences in recent years of hemlock
woolly adelgid occurring in landscapes from infested nursery
plants from other states, brought in or sold here. That appears to
be the case in the most recent find which occurred in the last two weeks in northeast Ohio.

A garden center with good customer relations and a good diagnostician felt that they had a suspect sample from a
homeowner who had bought a hemlock from them several years prior. They called BYGLers on Friday afternoon, we took
a look at the sample on Saturday, went to the landscape on Sunday, contacted the Ohio Department of Agriculture on
Monday, and with them (the most excellent Mary Smallreed and Jim Slyh) visited the property again on Wednesday. It
was indeed hemlock woolly adelgid (Adelges tsugae). The tree, which apparently originated from a North Carolina nursery
several years ago, was destroyed, burned and buried by ODA, and adjacent hemlocks were treated. It is to be hoped that
there was no spread to landscapes and woodlands and this will be a successful eradication. If you suspect hemlock woolly
adelgid, with its waxy white fluff at the base of needles, contact ODA at 614-728-6400.

**Woolly American Elm**

BYGLers discussed an interesting American elm sample Pam Bennett brought to a recent diagnostic workshop for Master
Gardener Volunteers. The sample showed a heavy infestation of either WOOLLY ELM APHID (Eriosoma americanum) or
WOOLLY APPLE APHID (E. lanigerum). Unfortunately, an exact identification couldn't be made because the aphids had "left the
building." The symptoms included white, flocculent material and thousands of cast aphid skins among rosette-like clusters of
heavily deformed leaves. However, a close examination revealed that the aphids had not caused a proliferation of buds as is often
seen with "true rosettes", just a serious stunting of the stem elongation. There were an equal number of leaves on the affected stems compared to non-infested stems, but the leaf spacing on the stunted stem was so reduced that it looked like a rosette.

Although the true culprit could not be identified, the fact that the sample came from one of the American elms that are
resistant to Dutch elm disease (DED) illustrated that just because a tree is resistant to one problem does not make it resistant
to all problems. Indeed, several BYGLers noted that with the loss of American elms from Ohio's forests and landscapes,
they had either not had first-hand experience with all of the other pests and diseases found on these trees, or they had
forgotten the wide-range of other problems that could occur on this elm. In fact, while woolly apple aphid has been
reported in past BYGLs on a range of Rosaceous hosts including hawthorn, Johnson and Lyon (Insects that Feed on Trees
and Shrubs, 2nd Ed., Cornell University Press) note that American elm is the primary host for this aphid. Although the
exact relationship between this aphid and American elm has become questioned in recent years, with the ever increasing use
of DED resistant American elms in Ohio landscapes, it's time to revisit diagnostic resources that include this tree in
anticipation of the return of the native.

For More Information:
Cornell University IPM Fact Sheet

**Calico Scale Crawlers**

Joe Boggs reported that calico scale (Eulecanium cerasorum)
crawlers are now very obvious on the underside of the leaflets of
heavily infested honeylocusts in southwest Ohio. The tiny
yellowish-tan, oval-shaped crawlers appear flattened and are
attached to the midvein of the leaflets. Like the adults, the
crawlers also exude sugary, sticky honeydew, although in lower
quantities compared to the adults. As fall approaches, the
crawlers will move to stems where they overwinter.
It is well known that the collective feeding activity of high populations of adult soft scales, such as calico scales, can cause significant harm to tree hosts. However, landscape and nursery managers should also be aware that the immature stage (crawlers) of soft scales also sucks plant juices and can cause significant plant damage. In past years, high populations of calico scale crawlers produced visible damage to honeylocust leaflets in central and southern Ohio. Their feeding activity caused leaflets to turn yellow and then brown with heavy damage producing noticeable defoliation. The leaf discoloration and defoliation were sometimes mistaken for moisture stress.

Calico scale can infest a wide variety of deciduous trees. The stems of off-colored trees should be closely examined for globular, reddish-brown, or dark-brown dead female scales. Trials in Ohio have indicated calico scale can be managed using soil drenches of neonicotinoid systemic insecticides such as imidacloprid (e.g. Merit, Marathon), clothianidin (e.g. Arena), and dinotefuran (e.g. Safari) made from September into November.

For More Information:
Penn State Woody Ornamental IPM FactSheet
http://woodypests.cas.psu.edu/FactSheets/InsectFactSheets/html/Calico_Scale.html

White Pine Weevil Damage Becoming Evident

Jim Chatfield reported that white pine weevil (Pissodes strobi) larval feeding damage is now becoming very evident in northeast Ohio. In early spring, overwintered females deposit eggs in the terminals of a wide range of conifers including: eastern white, Scotch, jack, red, and pitch pine; Douglas-fir; and all spruces. The resulting white, legless, slightly curved, grub-like larvae tunnel downward just beneath the bark, feeding on phloem tissue until pupation. The tops of weevil infested trees become wilted, turn brown, and die. Main leaders are often curled into a "shepherd's crook."

Removing the paper-thin bark from infested leaders will reveal reddish-brown frass (insect excrement) and weevil larvae. As the larvae near pupation, they excavate tub-shaped chambers in the xylem and surround themselves in Excelsior-like wood fibers. This forms the so-called "chip-cocoon" within which the larvae pupate. New adults emerge through the bark creating small, round exit holes. The adults mate and feed on bud and twig tissue; their damage is inconsequential. The weevils then move to the duff beneath conifers to spend the winter.

There is one generation per year and populations may be reduced by removing the infested terminals before adult weevils emerge. Wilted terminals should be pruned from trees and the cut ends closely examined to determine if the entire infestation has been removed. Infested material must be destroyed since the weevils will complete their development in cut tops left on the ground. Pruning and destroying the infested terminals remains a viable control option if no exit holes are found.

If exit holes are found, it is not too late to cut-out damaged tops and to begin training a lateral branch to become a new terminal. It is also not too late to consider insecticide options for managing this insect. A soil drench or soil injection application of imidacloprid (e.g. Merit, Xytect, etc.) in the fall has been shown be effective in protecting trees against white pine weevil infestations the following season. This application is generally considered economically feasible only for landscape trees and should be reserved for landscapes that have a history of white pine weevil activity.

For More Information:
U.S. Forest Service Leaflet
http://www.na.fs.fed.us/spfo/pubs/fidls/wp_weevil/weevil.htm
Penn State Entomology Fact Sheet
http://woodypests.cas.psu.edu/FactSheets/InsectFactSheets/html/White_Pine_Weevil.html

WeatherWatch »

Current Conditions
The following weather information summarizes data collected at various Ohio Agricultural Research Development Center (OARDC) Weather Stations spanning the dates from June 1 - 13, 2012, with the exception of the soil temperatures which are readings from Wednesday, June 13, 2012 at 6:05 p.m.
Dry...dry...and more dry. Dry was the most common word of the week on Tuesday’s BYGL conference call. Even when BYGLers reported being on the receiving end of recent rains, the precipitation totals varied greatly within a given county. Tim Malinich reported that rainfall amounts in the northeast differed greatly from neighboring municipalities. Many others expressed similar situations in their own county or region. Dave Dyke mentioned that he has been one of the areas that has been receiving enough rain to keep the grass green and growing - still is mowing every three days.

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

**2012 Commercial New Applicator Training 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.

**Diagnostic Walkabout for the Green Industry**

This will be held at the Erie County Fairgrounds, 7:30 - 9:00 a.m., on June 28. 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.

**Asian Longhorned Beetle (ALB) Information Forum Scheduled**
On Tuesday, June 19, 2012 from 4:00 p.m. - 7:00 p.m. the Asian Longhorned Beetle (ALB) Cooperative Eradication Program will host an Informational Forum for the public to provide information about proposed actions outlined in the Environmental Assessment, as well as provide current information on eradication activities and answer questions. Representatives from the Ohio Department of Natural Resources, Ohio State University and The Nature Conservancy will be assisting in the program.

The forum will be an open house-style format, and people are free to come and go as they please. There will be various stations/tables set-up offering a variety of information and the opportunity to have conversations with program officials and representatives from partnering agencies and organizations. The forum will include a comment station for the purpose of collecting comments about the assessment itself.

The forum will be held on the grounds at the Clermont County Fairgrounds in Owensville, Ohio.

Please find a link to the Informational Forum Notice included here: http://www.beetlebusters.info/downloads/Flyer_Informational10C2FE8.pdf.

If you have any questions or need more information, please feel free to contact Brett Gates, ODA Public Information Officer, at (614) 752-9712.

Byglosophy

"Most of us can read the writing on the wall; we just assume it's addressed to someone else." - Ivern E.xall

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