BYGL Newsletter

July 5, 2013
This is the 14th 2013 edition of the Buckeye Yard and Garden Line (BYGL). BYGL is developed from a Tuesday morning conference call of Extension Educators, Specialists, and other contributors in Ohio.

Authors for 2015: Amanda Bennett, Pam Bennett, Joe Boggs, Jim Chatfield, Julie Crook, Erik Draper, Gary Gao, Denise Johnson, Jacqueline Kowalski, Ashley Kulhanek, Cindy Meyer, Amy Stone, Nancy Taylor, Marne Titchenell, Danae Wolfe, and Curtis Young.

Plants of the Week

Annual - Cannas or Canna Lillies (Canna X hybridis)
These bold exotic tropical plants are great for containers, perennial borders, mass planting, and just about any location in the home landscape. The new varieties include colors of flowers and foliage that absolutely show off in the garden. One of the most popular seed-grown varieties, the Tropical Series, has been around awhile and is still quite popular. In 1992, Tropical Rose was an All-America Selection. Cannas begin to bloom in mid-summer and don't quit until frost. Flower colors are quite tropical in the reds, oranges, salmons, and pinks range. Leaves of cannas are quite large and usually shiny green. However, there are numerous cultivars with variegated and bronze leaves. For instance, 'Cleopatra' has yellow flowers and dark green foliage with bronze-red markings and 'Stuttgart' has green and white variegated foliage.

Standing anywhere from 2 - 8' tall depending upon the variety, these plants are quite easy to grow in the garden. They do best in full sun and well-drained soil.

Purchase cannas as rhizomes in the spring and pot up indoors in April to have blooms earlier outside in the summer. Seed-starting for cannas can be quite a challenge. The rhizomes must be dug up in the fall and stored in a cool dry place. However, some plants have been known to overwinter in the ground in some protected areas of the garden. Don't take a chance, though, if it's a variety you want to save!

For More Information:
Missouri Botanical Garden Kemper Center for Home Gardening information on Canna 'Striata' (yellow variegated foliage)
Iowa State Extension publication on Growing Cannas
http://www.extension.iastate.edu/Publications/RG323.pdf

Perennial - Stokes' Aster (Stokesia laevis)
This perennial is very easy to grow and is often overlooked. In full bloom right now, the cornflower blue flowers are showy as they are held at the top of 18 - 24" stems. The flowers show up in mid-June and last almost through August. You can also deadhead the flowers to extend bloom. The growth habit when it's in bloom gives a very airy appearance to this plant. The plant grows in a rosette with the leaves growing around 8" long. The foliage in Ohio has a tendency to be somewhat evergreen, giving it an additional season of interest.

Plant in full sun in well-drained soil; however, avoid wet soils during winter months. Stokes' aster tolerates average soils and has very few insect or disease problems. In addition, rabbits tend to leave them along. The long flower stems may get beat down in a rain but tend to recover.

For More Information:
Missouri Botanical Garden information on Stokes' Aster
Washington State University information on Stokes' Aster
http://pnwplants.wsu.edu/PlantDisplay.aspx

Ginkgoes are a fine example of a tree which not only has tremendous value as a green industry standby, but also is great natural story. The genus *Ginkgo* is of ancient lineage, originating 250 million years ago or more in the Permian period, long before flowering plants. Its early relatives were extinct seed ferns and the surviving ginkgo species, *Ginkgo biloba*, is not closely related to any currently living plants, though alone with cycads ginkgoes produce motile sperm cells and thus have some evolutionary linkage to these cycads. Ginkgoes are considered gymnosperms ("naked seeds") rather than angiosperms (true flowering plants) since their seeds are not protected and enclosed by an ovary wall like true flowering plants which have seeds enclosed in fruits.

Of course female ginkgoes do have fruitlike reproductive structures (named "golden apricots" or "silver apricots" by some), the fleshy part of which is quite malodorous, in fact vomit-grade malodorous. The seeds inside however are prized in Oriental cuisines, but in excess can be toxic and some people are especially sensitive. Ginkgoes are also highly valued for medicinal properties, and ginkgo plantations that harvest leaves are used to produce ginkgo products including those touted, with some evidence that they have some effects as memory aids. At least this BYGLer thinks he remembers reading this somewhere. Oh yes, the New England Journal of Medicine.

Horticulturally, ginkgoes are quite popular as trees of veneration worldwide, from Buddhist temples to the Morton Arboretum in Chicago, from the Old Lion ginkgo at Kew Botanic Gardens to the street tree ginkgoes outside The Jake where the Indians play in Cleveland (yes, it is now Progressive Field officially, but to this BYGLer it will always be The Jake). Ginkgoes are good urban survivors if they are male and not therefore subject to ground-level pruning somewhere down the road when the smells arise from falling puke-balls.

Ginkgoes are large trees, growing to 60 - 100' and to more than 150' in remnant native Chinese groves. There are a number of cultivars these days, from upright ginkgoes, to dwarves such as 'Troll' to 'Variegata' with lovely cream-white variegation. Natural streamside survivors, ginkgoes do best with moist, but well-drained acid soils. Ginkgoes have relatively few diseases or pests, and of course, at the end of the season, the wonderful sometimes quite synchronous falling of the lemon-yellow leaves on an October or November day is spectacular.

And ginkgoes have quite a literary connection, from the story of Goethe and the Ginkgo to these words of uneasy mortality from the former US poet laureate Howard Nemerov (as reprinted in a wonderful new book "Ginkgo" by Peter Crane):

_"Late in November, on a single night_

_Not even near to freezing, the ginkgo trees_
In one consent, and neither to rain nor to wind
But as though to time alone: the golden and the green
Leaves litter the lawn today, that yesterday
Had spread aloft their fluttering fans of light

What signal from the stars? What senses took it in?
What in those wooden motives decided
To strike their leaves, to down their leaves,
Rebellion or surrender? and if this
Can happen thus, what race shall be exempt?
What use to learn the lessons taught by time,
If a star at any time may tell us: Now.

**Vegetable - Carrots (Daucus carota)**

A great source of vitamin A can be planted in the vegetable garden now and harvested in 60 - 80 days. The most important factor to have success with growing great carrots is to have a loose, well-drained soil. Carrots will not be productive nor grow straight if the soil is compacted, therefore, put a little extra effort into soil preparation. Add composted organic matter, on a one-third soil volume basis to help increase tilth and drainage. In fact, carrots will grow quite well in raised bed gardens or even patio containers because of the more suitable soil quality. Another tip for great carrots is to ensure that they do not become stressed for water. Prolonged hot weather in the later developmental stages of carrots may retard growth and affect flavor; consequently, provide a consistent amount of moisture throughout the growing season.

Carrots may be harvested as soon as they reach finger size, due to the fact that less mature carrots are usually more tender and juicer. Popular varieties (and maturity rate) include: Red Cored Chantenay (70 days), Danvers and Nantes Half Long (70 days), and Little Finger (65days). Also try some of the interesting and different colors, shapes, and sizes of carrots including, Purple Dragon (purple), Rainbow Blend (all colors), and Thumbelina (small and round) or other "baby" varieties.

For More Information:
Ohio State University Extension Fact Sheet- "Growing Carrots in the Home Garden" HYG 1606-93
http://ohioline.osu.edu/hyg-fact/1000/1606.html

**Weed - Birdsfoot Trefoil (Lotus corniculatus)**

Often used for erosion control and as forage for livestock, birdsfoot trefoil is making an appearance across the state as a weed in lawns and parks. This trefoil is a fine-stemmed legume that grows to a height of 20" or more. Erect stems are moderately leafy. Leaves are smooth, consisting of five leaflets. Showy yellow to orange flowers bloom profusely during the summer months. When mature, seedpods extend outward from the stalk, resembling a bird's foot.

Birdsfoot trefoil tolerates drought, poor soil conditions, and low mowing, making control difficult. Small patches or individual plants may be hand-pulled. For large infestations, broadleaf herbicide application may be necessary.

For More Information:
USDA Plant Fact Sheet: Birdsfoot Trefoil
http://plants.usda.gov/factsheet/pdf/fs_loc06.pdf

**Hort Shorts**

What Causes Raspberry Fruits to Be So Small?
Home fruit growers look forward to a bountiful harvest of large, juicy, sweet, and flavorful raspberries each year. Sometimes, the results can be disappointing. Berries might be small and sour, if there are any at all.

Many factors contribute to poor fruit quality in raspberries. Sunlight, pruning, cane density, age of the patch, pollination, weather, fertilization, and watering are some of the common factors. Raspberry plants need full sun. Hence, shading will decrease fruit quality. If there are too many canes, the canes will shade each other. With everbearing raspberries, such as Heritage or Caroline, floricanes should have been thinned to 5 - 6" between canes. Pruning is the way to achieve this goal.

Black raspberries need to be tipped now to induce formation of laterals. These laterals will then be shortened to about 8 - 10" next March. Shortening of laterals will reduce number of flower buds, thus increase the berry size of remaining fruits. The floricanes that have produced fruits can be removed after harvest or during dormant pruning in the coming March.

Improper fertilization, such as too much nitrogen, can cause excessive vegetative growth, thus reducing fruit quality. Do a soil test to determine what your soil is missing. Watering once a week is enough. Too much water can cause raspberry plants to die of root rot.

Age of the planting may be a very important factor. A raspberry patch does not last forever. Plants might still be alive, but fruit quality can be poor. When raspberry plants get old, they may be infected with various viruses. Fruit quality can be quite low. In this case, removal of planting might be necessary. A new planting of virus-free plants in a different location would be the only good solution. Cultivar selection and weather can also affect fruit quality. Refer to OSU Extension Bulletin 941, "Midwest Home Fruit Production Guide" for more information.

When all else fails, gardeners can still visit a berry farm in Ohio to buy some large, juicy and sweet raspberries. Gary Gao reminded BYGLers that both black raspberries and summer red raspberries are ripening right now in many parts of Ohio. Harvesting berries on a berry farm can be a fun experience for the family!

For More Information:
OSU Extension Raspberry Fact Sheet
http://ohioline.osu.edu/hyg-fact/1000/1421.html
Purdue Extension Raspberry Fact Sheet
http://www.hort.purdue.edu/ext/ho-44.pdf

Secrest Arboretum Dedication: OSUE Master Gardener Volunteers (MGVS) Turn the Table on Ken Cochran

On June 12, more than 100 OSUE MGVs and other dignitaries celebrated the MGV donation of time and volunteer work in the rejuvenation efforts at Secrest Arboretum by dedicating a garden area to the MGVs. After much discussion, it was determined that this section of the garden dedicated to the MGV efforts would be named KEN'S CLASSROOM because of his dedication and commitment to teaching and mentoring MGVs. This was a surprise to Ken as he was expecting the name to focus on the OSUE MGVs!

At the same time, Miami County MGV Dan Poast was recognized with the first-ever OSUE MGV Meritorious Service Award for going over and above the call of duty. Dan worked with Ken to organize workdays in the arboretum and recruited volunteers from around Ohio to help out. Congratulations to Dan!

OSUE MGVs donated more than $75,000.00 and over 2,000 hours of volunteer work in the garden to the Secrest rebuilding efforts. They also continue to go to the Arboretum to work in the various gardens under the leadership efforts of Miami County MGV Dan Poast. A formal plaque will be placed in the gardens recognizing both the MGVs and Ken.

Need to Batten Down the Hatches Against Bats?

March through September is the active time for bats in Ohio. Ohio's 11 species spend their summer hours like every other
species in Ohio - feeding and reproducing. There is no question Ohioans benefit from the feeding of bats - a single bat can consume over 1000 mosquito-sized insects in one night. The reproduction side of things however, can sometimes cause an issue...especially if the result is a colony of bats in the home. Two Ohio bat species will commonly share living space with humans; the little brown bat and the big brown bat. The females of both of these species form maternity colonies (these colonies range in size from 50 to more than 100 females) in which the females birth and raise their young together. In their natural habitat, these maternity colonies would be found in hollow trees or under peeling bark. But the little and big brown bats have discovered that human structures also provide good habitat.

It is possible to remove bats from a home with a bit of work and patience. The only effective way to remove a bat colony from a building is exclusion, which involves identifying where the bats are entering the building and covering those access points with one-way exclusion devices. These devices allow bats to leave the building but not reenter. Patience is required to wait for the young to be able to fly on their own. If exclusion takes place before the young can fly, the mothers will be excluded and the young left inside to die. Excluding a bat colony in Ohio should never take place between May and August. Bat exclusion professionals are available for hire, but do-it-yourself instructions can be found here: [http://batcon.org/index.php/bats-a-people/bats-in-buildings.html](http://batcon.org/index.php/bats-a-people/bats-in-buildings.html).

Maternity colonies will return to the same place year after year to reproduce. If they are excluded, they will need to find another place to roost and their ferocious appetites will go with them. Consider putting up a bat house to keep them in the area. Bat house plans and instructions on where best to place them can be found here: [http://batcon.org/index.php/get-involved/install-a-bat-house.html](http://batcon.org/index.php/get-involved/install-a-bat-house.html).

SSSSSSSSSSSnakes and More Snakes

It is not uncommon this time of year to encounter a slithery visitor in gardens, landscapes, and backyards. There are several species of snakes happy to live their lives in backyards, but the most common is likely the garter snake. Named for the 3 light stripes that run along the length of its black, brown, gray, or olive body, the garter snake is sometimes nicknamed the 'garden' snake because that is where unsuspecting gardeners often encounter them. The stripes running vertically along the length of the snake's body resemble the once stylish sock garters worn by men. While it can be startling to encounter a snake while weeding or planting, if their presence can be tolerated, garter snakes are doing the constant gardener a favor. They feed on worms, slugs, insects, and small mammals that may otherwise be feasting on garden plants and flowers.

Garter snakes are most active during the day and on sunny summer days are often found basking on rocks, sidewalks, decks, or patios. On hot days and when sleeping, they retreat to sheltered areas such as under foundations, rocks, logs, stumps, or porches. There are no repellents that effectively work to keep snakes away. The best approach is to eliminate denning and sleeping sites and shoo them away from basking areas. They are rarely aggressive and habituate to humans easily.

The common watersnake, on the other hand, is not a snake that should be picked up without the expectation of a strong bite. The coloration of this snake, which prefers streams, creeks, and other bodies of water, can sometimes cause it to be mistaken for a northern copperhead, one of Ohio's 3 venomous snakes (the other 2 are the timber rattlesnake and eastern massasauga). The northern copperhead has a distinct triangular head that the watersnake lacks, and is not common among well-settled areas. Because of the common watersnake's preference for water, it is also often mistaken for a water moccasin, a venomous snake that does NOT occur in Ohio.

While it would be rare to encounter a venomous snake while gardening, never disturb or handle a snake without first determining the species and if it is venomous. For help identifying Ohio snakes, see the Division of Wildlife Reptiles of Ohio Field Guide.

For More Information:
Ohio Division of Wildlife Reptiles of Ohio Field Guide
[http://www.dnr.state.oh.us/LinkClick.aspx](http://www.dnr.state.oh.us/LinkClick.aspx)

OSU/OARDC Researcher Recipient of Prestigious Grant
Ohio State University (OSU) entomologist Mary Gardiner has received a coveted grant from the National Science
Foundation (NSF) to implement an unprecedented study of vacant land in the city of Cleveland. The five-year project's main goal is to gather data that will inform future green space design in Cleveland and other cities engaged or interested in vacant-land management.

The nearly one million dollar grant will fund a large-scale project examining the impact of various landscape treatments on the biodiversity and ecosystem function of 64 empty lots within eight Cleveland neighborhoods. The city of Cleveland currently has 32,000 acres of vacant land and witnesses the demolition of 1,000 homes every year.

The project's idea is to determine how and to what extent diversity of plant communities influences diversity of beneficial insects, such as pollinators and predators, and the pollination and biocontrol services these insects support within the urban landscape. Gardiner said she is excited about the opportunity to create a "living laboratory" in Cleveland to measure the responses to different management strategies. Because the project is collaborative in nature, there will be field days and other venues for community members and city leaders to learn about costs and benefits and to provide input about their preferences.

Gardiner believes that with the right combination of plants and increased ecosystems services, urban vacant land can be seen as an asset for community development rather than as an eyesore.

Congratulations to Mary Gardiner!

For More Information:
OARDC Website

Bug Bytes »

Yellow Poplar Weevil - Round 2

BYGLers visiting the OSU OARDC campus in Wooster, OH, last week for the OSU Extension Ag/Natural Resources Summer Meeting observed noticeable damage to magnolias caused by newly emerged yellow poplar (= tuliptree) weevils (Odonotypus (= Prionomerus) calceatus). The small (2/16" long), oval-shaped adults are black to brownish-black and have deeply grooved wing covers (elytra). They are good flyers but often elect to fold their legs, drop to the ground, and "play dead" when disturbed; a defense strategy that is common among weevils. In the eyes of some people, yellow poplar weevils resemble ticks which may generate calls to Extension offices concerning "flying ticks" during outbreak years. Of course, ticks can't fly.

Overwintered adults lay eggs in leaf midribs. The resulting larvae feed as leaf miners either singly or in groups to produce large blotch mines. Although the larvae produce noticeable leafmines, the most serious damage is caused by the adults. Adults feed on leaves producing half-moon-shaped holes. Numerous feeding holes can cause leaves to wilt, turn brown, and die. Adult feeding damage occurs twice during the growing season. Overwintered adults feed in the spring prior to laying eggs and the current newly emerged adults feed throughout mid-summer. However, the new adults typically produce the most significant damage owing to their larger numbers. Eventually, the new adults will cease feeding, move from their host trees and seek out overwintering sites which is often in the duff beneath trees.

Yellow poplar weevils will feed and lay eggs on their namesake host as well as magnolia and sassafras. Indeed, alternate common names include "sassafras weevil" or "the magnolia leafminer." Weevil populations are cyclic with outbreak years often followed by several years with almost no weevils observed. In BYGL 2013-07 (05/16/13), we reported that populations appeared to be building in northeast Ohio with noticeable damage observed last year. This observation remains true based on the number of new adults and the amount of damage observed in Wooster last week. Conversely, while high localized populations were reported in central Ohio last season (BYGL 2012-12, 06/21/12), Dave Shetlar noted that weevil populations appear to be on the downturn with much lower numbers being observed thus far this season.

For More Information:
OSU Extension "Bug Doc" FactSheet
http://bugs.osu.edu/~bugdoc/Shetlar/factsheet/ornamental/FSyellowpopweevil.htm
Cottony Maple Scale Puffing-Up

Joe Boggs reported that cottony maple scale (*Fulvinaria innumerabilis*) females are beginning to extrude their elongated, white, cottony ovisacs in northeast Ohio. Joe noted that the oval-shaped dark brown females remain highly visible with their ovisacs just starting to peek out from beneath their bodies. The ovisacs will eventually expand to look like 1/4” diameter cotton balls on the branches of their host plants. The scale has a very wide host range which includes their namesake host as well as ash, basswood/linden, black locust, dogwood, elm, euonymus, hackberry, honey locust, oak, poplar, and sycamore. Joe found the scale on viburnum.

Populations of this "soft scale" can build rapidly with each ovisac containing over 1,500 eggs. Once the eggs hatch, the first instar nymphs (crawlers) travel to the underside of leaves. As with all soft scales, the nymphs insert their piercing-sucking mouthparts into a phloem vessel. Their primary targets are the various amino acids that are dissolved in the sap; however, they must suck-up a large volume of sap in order to extract the small quantity of amino acids contained within the sap. Once they process the sap, the excessive liquid is discharged in the form of sticky, sugary, “honeydew” that drips from their anus onto branches, leaves, understory plants, lounging gardeners, etc.

Although high populations can occasionally cause branch dieback on stressed plants, serious damage is rare. The main challenge is the copious quantity of honeydew produced by the nymphs; it is common for the sticky material to become colonized by black sooty molds to produce an unsightly mess. The nymphs mature into adults in late summer and the winged males mate with the wingless females. After mating, the females crawl back to twigs and branches where they spend the winter.

Cottony maple scale is sometimes mistaken for COTTONY MAPLE LEAF SCALE (*P. acericola*). Both scales produce white, cottony ovisacs, and both have wide host ranges; however, as its common name implies, cottony maple leaf scale produces its ovisacs on the underside of its host’s leaves. If control of either these soft scales is required, both can be managed with fall soil drench or soil injection applications using imidacloprid (e.g. Merit, Xytect, etc.), or spring soil drench or foliar applications of dinotefuran (e.g. Safari).

For More Information:

OSU Extension, "Bug Doc" FactSheet
Penn State Entomology FactSheet
http://ento.psu.edu/extension/factsheets/cottony-maple-scale

Lace Bugs Revisited

In BYGL 2013-10 (06/06/13), we reported that the handiwork of several lace bugs (Hemiptera: Tingidae) was becoming evident in Ohio including: HAWTHORN LACE BUG (*Corythucha cydoniae*); BASSWOOD LACE BUG (*Gargaphia tiliae*); and OAK LACE BUG (*C. arcuata*). In that report, we noted that hawthorn and basswood lace bugs are found on the lower leaf surface, which is true. However, we described the location for oak lace bugs as being on the upper leaf surface, which is not true! Oak lace bugs are also confined to the lower leaf surface.

This week, Erik Draper and Joe Boggs reported finding BUCKEYE LACE BUG (*C. aesculi*) producing noticeable symptoms on a red buckeye in Wooster, OH. This is another lace bug that resides on the underside of leaves. As with all lace bugs that feed on lower leaf surfaces, buckeye lace bugs produce feeding symptoms that appear on the upper leaf surface. The feeding damage appears at first as small yellow spots (= stippling) produced by the lace bugs piercing-sucking mouthparts. When lace bug populations are high, the stippling eventually coalesces to produce large, yellow-to-copper colored areas on the upper leaf surface.
Bagworm Alert

Joe Boggs reported that bagworm (*Thyridopteryx ephemeraeforina*) caterpillar damage is now becoming very evident on numerous host plants in southwest Ohio landscapes. Feeding damage is heavy enough on some plants; spruces, junipers and arborvitae in particular, to have a significant impact on the overall health of the infested plants. Portions of these plants are thinning and/or turning brown and approaching the point of not being able to recover from the damage. In some cases, the bagworms are still very small with their bags being less than 1/2” long.

Early instar bagworms can be effectively controlled using the biological insecticide *Bacillus thuringiensis* var. *kurstaki* (*Btk*) (e.g. Dipel, Thuricide, etc.). The bacterium will not kill bio-allies such as predators and parasitoids. *Btk* is a stomach poison which means it must be consumed to kill the caterpillars, and its residual activity is very short-lived. Thus, two applications may be required. The efficacy of *Btk* declines once bags reach 3/4”, so a standard insecticide will need to be used after bags exceed this length.

For More Information:

Purdue University, Department of Entomology Extension Fact Sheet

Grasshoppers Abound

Dave Shetlar and Curtis Young reported observing high localized grasshopper nymph populations in central and northwestern Ohio, respectively. The three most common grasshopper species that may be found in Ohio landscapes include the differential grasshopper (*Melanoplus differentialis*), redlegged grasshopper (*M. femurrubrum*), and the Carolina locust (*Dissosteira carolina*). All are capable of producing dramatically high populations (= outbreaks).

Adult differential grasshoppers measure around 1” in length and they have markings on their hind femurs that look like inverted chevrons. Adult redlegged grasshoppers are around 1” in length and they also have inverted chevrons on their hind femurs; however, the lower portion of their femurs and their entire tibias are bright red. The mottled coloration of the large (1 1/2-2” long) Carolina locust provides almost perfect camouflage. It may remain unnoticed until it takes flight revealing its striking hind wings that are blackish-brown and trimmed in yellow.

Populations for these and other grasshopper species can fluctuate dramatically from year-to-year with climate playing a critical role. Dry summer conditions support grasshopper egg survival which is one of the reasons grasshopper outbreaks are more common on the Great Plains compared to Ohio. Grasshoppers lay their eggs in the soil. Long periods with saturated soils can drown eggs and continually high soil moisture can support fungal infections that will kill the eggs. Conversely, low soil moisture favors egg survival. Thus, it is speculated that localized droughty conditions in recent years in some areas of Ohio may be responsible for the localized grasshopper outbreaks.

As the nymphs mature to adulthood, the potential for grasshopper damage increases. This is not only because late instar nymphs eat more compared to early instars, it’s also because adult grasshoppers are more prone to move en masse to new locations. Severe problems may arise when adjacent agricultural crops are harvested or grasslands mature causing grasshoppers to move to find new food sources. Defoliation is the primary injury to plants, but fruit and ripening kernels of grain will also serve as food. Indeed, grasshoppers will feed on just about anything as long as they do not detect a feeding deterrent. Reports from the Great Plains are common of grasshoppers eating paper, paint, window screen, window or caulking, fence posts, hoe handles, etc. during grasshopper outbreaks. Heavy infestations of grasshoppers may require chemical treatment to reduce or prevent serious damage to sensitive plants.

For More Information:

Grasshoppers Abound
Monitor for Clipped Coneflowers

Dave Shetlar reported observing SUNFLOWER HEAD-CLIPPING WEEVIL (*Haplorhynchites aeneus*) on coneflowers in central Ohio. This is a well-documented pest of cultivated and wild sunflowers (*Helianthus* spp.) in the Great Plains and the weevil is also known to infest other members of the Aster Family (*Asteraceae = Compositae*). Few reports in the literature mention coneflowers as a host. However, coneflowers appear to be a preferred host in Ohio with significant injury reported in recent years (BYGL 2010-15, 7/15/10; BYGL 2011-13, 06/30/11; BYGL 2012-11, 06/14/12).

The shiny black to brownish-black weevil is a little over 1/4" long which includes an exceptionally long, curved snout. As with all weevils, this beetle's mouthparts are located at the end of their snout. The females insert their snouts into the flower stems to chew a ring of holes around the stem about 1 - 1.5" below the flower head. The flower stem is not completely cut; the damaged stem just breaks-over causing the flower head to hang from the stem on a thin strand of tissue.

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

Disease Digest ➤

Bacterial Fireblight

This serious disease of genera in the Rosaceae, such as apple, pear and pyracantha (*Malus, Pyrus, Pyracantha*), gets a big head start in Springs which are humid and wet and when temperatures are in the 65-70 degree range during bloom. If these ideal conditions for infection (from bacteria in overwintering cankers) are met, then shoot and trunk infections follow and fireblight can be severe, resulting in serious shoot dieback and even plant death. This year, we are observing widely divergent levels of fireblight throughout Ohio, with most severe infections reported from northwest Ohio. How can this be?

This divergence is almost certainly due to specific environmental conditions during bloom in different areas of the state. Again, the key is moist, warm weather during bloom to get fireblight off to a roaring start. So, a rainstorm here vs. there, the blossoms being out in one area while past or not yet out in another area can result in big differences. Unfortunately, fireblight is difficult to control, though pruning, especially during the dormant season, limiting succulent new growth to the extent possible, and use of bacteriacides such as copper sulphate can help.
Erik Draper shared with the group that during the month of June 6.65" of rain fell in Geauga County. Although he has been scouting regularly, Erik indicated that in northeast Ohio, most of the vegetable crops currently appear to be disease-free; however, he warned everyone that he fully expects the disease time bombs to EXPLODE shortly here in the fields.

Erik, had been using the WatchDog Weather Tracking micro-station to model and predict disease infection periods for Early Blight of tomato. Infection periods are based upon ambient air temperatures and the number of hours of leaf wetness at those temperatures. Under those overcast, warm and muggy days, according to TOMCAST model, there were about 3 infection periods occurring per day. Therefore, if a tomato grower was attempting to prevent infections by the Early Blight pathogen, *Alternaria solani*, the grower should be applying a fungicide just about every 5 days!

Herein lies the difficult part of the disease cycle for many growers and others to understand and grasp; namely, even though everything looks perfectly fine today, disease symptoms on infected leaves or fruits could suddenly appear tomorrow! Remember that there is always a time delay between the time of infection and the expression or physical evidence of an infection having occurred. These "latent infections" can be as short as 7 - 10 days or as long as 21 - 28 days to incubate and infest susceptible plant tissues. This is the frustrating part of diseases for many people, especially if they have applied fungicides.

Let's use the tomato and the Early Blight pathogen for an example of this frustration. A grower is protecting the tomatoes once a week, by applying an effective fungicide, like chlorothalonil, to prevent infections by the Early Blight fungus. Pretty good plan... correct? NO! Using the predictive TOMCAST model, with humid weather and the high number of infection periods occurring each day, even applying an effective fungicide once a week is not enough! If a fungicide should have been applied every 5 days and it was applied on day 7; unfortunately, 2 whole days passed where the leaves were not protected and latent infections occurred. Then, the unsuspecting grower applies a fungicide and 3-5 days later, disease symptoms begin to appear. The grower is angry and thinks the fungicide is bad and doesn't work and was cheated out of the money it cost to purchase a worthless product!

The problem wasn't that the fungicide was ineffective, the real issue was that weather conditions, which were ideal for disease development, shortened the timing of the reapplication! It was possible, a month or 2 weeks earlier, under a different set of environmental conditions, that those once-per-week applications might have been ideal to control the fungus. Diseases and infections are either enhanced or delayed by the changing environmental conditions surrounding plants. Most fungicides are all about preventing infections from occurring, to which the degree of success is based on the timing of initial applications and the timing of subsequent reapplications!

For More Information:

APSnet Fact Sheet- Early Blight of Potato and Tomato
http://www.apsnet.org/edcenter/intropp/lessons/fungi/ascomycetes/Pages/PotatoTomato.aspx

The Name Game of True Disease Discernment

Jim Chatfield reminded all of the latent plant pathologists of the BYGL group that when using the name of a disease, it really should include the host. For example, someone says that they think that they saw "Alternaria disease" on a leaf. Unfortunately, this tells both a plant pathologist and any individual trying to learn about plant diseases exactly nothing. *Alternaria* is a genus of ascomycete fungi and many species of *Alternaria* are major plant pathogens with a worldwide distribution. Just one species, *Alternaria alternata*, has been documented causing leaf spots, fruit rots and tissue blights on over 380 host species! Even using the correct species, it is still not enough until defined by the host that it infected.

Take for instance the pathogen, *Alternaria solani*, which causes the disease commonly called Early Blight, affects both tomatoes and potatoes. Symptoms of early blight can occur on the fruit, stem and foliage of tomatoes, while early blight infections only occur on the stems, foliage and tubers of potatoes. The infections and subsequent symptoms can occur any time during the growing season, not just "early" as the moniker suggests. So to be perfectly accurate in the disease name game, one would indicate the correct disease as Early Blight of Tomato or Early Blight of Potato; thereby, the host plant, upon which the symptoms were discovered, is clearly indicated. The correct manner to indicate the pathogen causing the symptoms would be *Alternaria solani* on tomato foliage, etc. Perhaps the reasoning behind why this is important to more than just pathological snobbery is best stated by Julian Barnes- "Mystification is simple; clarity is the hardest thing of all".
The most recent article found on the website covers the identification and issues of ROUGH BLUEGRASS (*Poa trivialis*) in athletic fields in Ohio. The article also includes excellent descriptions, as well a photo of dormant rough bluegrass. Other turf-related information highlighted on the website include: turfgrass identification; slit drain systems; ascochyta leaf blight; and leaf spot/melting out.

For More Information:
Buckeye Turf
http://buckeyeturf.osu.edu

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**Industry Insight ➔**

**Black Vine Weevil Landscape Challenge**

Dave Shetlar reported finding black vine weevils (BVW) (*Otiorhynchus sulcatus*) wandering from his landscape into his home in central Ohio. Dave noted that although BVW has less of an impact on established plants in landscapes compared to plants in nurseries, the occurrence of this non-native weevil in landscapes may present several pest identification and management challenges. First, adults feed at night and hide during the day in the duff beneath infested plants. Second, although the weevil is most commonly associated with infestations on yews and rhododendrons, the adults can feed on over 100 different plant species. Landscape managers should examine multiple plant species for the characteristic leaf-notching damage caused by the adult weevils.

The adults are approximately 1/4” long. They have a narrower head and relatively short snout when compared to many other weevils. Their thorax is rounded and their abdomen is oblong-shaped. As their common name indicates, they are black; however, their color is slightly muted by pits and deep striations as well as small patches of yellow hairs on their wing covers. Their wing covers are fused which means the adults cannot fly. When disturbed, the adults feign death by remaining motionless and holding their legs against to their body.

BVW larvae also present a number of diagnostic and management challenges. First, they live in the soil. Second, they consume roots and their feeding damage mimics symptoms caused by other root problems such as moisture stress (too little, or too much water), root-rots, and vole damage. Landscape managers should excavate and examine the root systems of wilting plants for BVW larvae and/or larval feeding damage. The creamy-white larvae have brown, bulbous head capsules and they are C-shaped causing them to superficially resemble white grubs; however, BVW larvae are legless. The larvae are capable of consuming entire root systems and girdling plant stems below the soil line.

Adults cannot fly; their primary means of long-distance dispersal is by hitchhiking on infested plants. Thus, the most effective BVW management option in landscapes is to avoid the problem by inspecting plants before they are installed. Other management options include making insecticide applications earlier in the season that target adults before they lay eggs, or insecticide applications that target early instar larvae before they cause significant damage.

A mid-to-late August soil drench application of imidacloprid (e.g. Merit) targets a "bottleneck" in the life-cycle of the weevil. At this time of the year, a high percentage of the weevil population is in the first instar stage; they are much easier to kill compared to later instar larvae. Also, by eliminating early instar larvae in late summer to early fall, landscape managers may avoid the extensive root damage caused by the much larger larvae in the spring. Unfortunately, while entomopathogenic nematodes such as *Steinernema* spp. and *Heterorhabditis* spp. have been successful in controlling BVW larvae in containerized plants, results have been highly variable on landscape plants.

For More Information:
Penn State Woody Ornamental IPM Fact Sheet
http://woodypests.cas.psu.edu/factsheets/insectfactsheets/html/black_vine_weevil.html
Asian Longhorned Beetle (ALB) Update

On July 3, 2013 the Ohio Department of Agriculture (ODA), in cooperation with the United States Department of Agriculture (USDA), distributed the latest ALB media update. These updates, emailed out on a regular basis, serve as an ongoing communication tool. As of June 29, 2013, the following highlights were included:

- Since surveys began on July 1, 2011, 508,291 trees have been surveyed.
- 9,992 ALB infested trees have been confirmed.
- 9,444 ALB infested trees have been removed since removals started on November 14, 2011.
- 40 ALB high risk host trees have been removed since this type of removal started on May 1, 2013.
- 6,969 ALB high risk host trees have been treated since treatments began on June 17, 2013.

The Asian longhorned beetle (*Anoplophora glabripennis*) is an invasive insect from Asia that came to the United States concealed in solid wood packing material; pallets, crates and dunnage, used to transport goods from overseas. ALB was first detected in the United States in 1996 in Brooklyn, New York. Ohio was the fifth state to detect the destructive longhorned beetle. Eradication has been declared in Illinois, New Jersey and parts of New York. Eradication operations continue within Ohio, Massachusetts and New York.

For additional information on ALB, check out the national website at [http://www.AsianLonghornedBeetle.com](http://www.AsianLonghornedBeetle.com). We encourage everyone to be a beetle-buster and look for signs of this non-native beetle. Suspect reports can be made online on the ALB website. Additionally, if you have downloaded the Great Lakes Early Detection Network APP, suspect reports can be made through this multi-state smart phone APP. If you don't currently have this APP on your phone, check out this website for more information - [http://apps.bugwood.org/mobile/gledn.html](http://apps.bugwood.org/mobile/gledn.html).

Get Your Green Industry Fix Webinar: July 10

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

WeatherWatch »

Weather Update

The following weather information summarizes data collected at various Ohio Agricultural Research Development Center (OARDC) Weather Stations spanning the dates from January 1 - June 30, 2013, with the exception of the soil temperatures which are readings from Tuesday, July 2, 2013 at 5:00 a.m.

A common word in the BYGL reports this week was - WET. Amy Stone reported that the Toledo area was on the receiving end of eleven straight days of rain. This weather pattern has pushed the Toledo area into one of the top ten rainiest Junes on record. Pam Bennett mentioned that the area around Clark County was under a flood warning Tuesday morning as heavy rains had fallen earlier in the day. Joe Boggs reported that Hamilton County received 6.02" of rain for June, which is 1.99" above average for the month. Erik Draper reported a very similar and soggy report from Geauga County. These weather reports are very different than a year ago when conditions were very dry.

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<td>13.83</td>
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For More Information:
OARDC Weather Stations
http://www.oardc.ohio-state.edu/centernet/weather.htm

Southwest Ohio BYGLive! Diagnostic Walk-About
The July 2013 Southwest Ohio BYGLive! Diagnostic Walk-About for Green Industry professionals will be held from 12:00 - 3:00 pm. on Monday, July 8, at Glenwood Gardens, 10397Springfield Pike, Woodlawn, 45215. Participants will walk-about with Joe Boggs and Julie Crook (OSU Extension) and our host Carol Mundy (Head Naturalist at Glenwood Gardens, Hamilton County Park District) to look at plants, plant pests, diseases, and other points of considerable interest until 3:00 pm. ISA Certified Arborist Credits, ONLA OCNT Credits, and Landscape Architecture Continuing Education System (LA CES) CEU's for Landscape Architects will be available. Visit the following website for registration information as well as driving directions: http://hamilton.osu.edu/topics/horticulture/byglive-diagnostic-walk-about.

Diagnostic Walkabout for the Green Industry
Diagnostic Walkabout for the Green Industry series is once again occurring around Ohio this summer. ONLA, AGI and OSU Extension will be hosting 5 more events in 2013: July 18, Mingo Park, Delaware; August 1, Stan Hywet Hall and Gardens, Akron; August 15, Toledo Botanical Gardens; September 12, Inniswood Metro Gardens, Westerville; September 26, Sunset Memorial Park, North Olmsted. Pre-registration is required and class size is limited to 30 per class. ODA, ISA and OCNT credits available. For registration, location and pesticide credit information see: http://www.onla.org.

TCD Workshop
On Wednesday, July 31, 2013, a workshop will be held in Hamilton, Ohio to discuss THOUSAND CANKER DISEASE ON WALNUT. The program will be held at the Butler County Extension and include both an indoor and outdoor portion. Information, including a flyer about the workshop can be found on the Woodland Stewards website at http://woodlandstewards.osu.edu. The workshop runs from 9:00 a.m. - 3:45 p.m. Registration cost is $20.00 per person. Questions about the program can be directed to Kathy Smith at 614-688-3136.

Youth Scientist Adult Education Class
OSU Extension, USDA Forest Service, Ohio Woodland Stewards, and the Ohio Environmental Protection Agency-Ohio Environmental Education Fund are sponsoring an adult education class August 8-9, 2013. This class will showcase a new hands-on curriculum being developed for youth to learn about invasive species utilizing their own neighborhoods, school yards, and local parks. This curriculum fulfills newly revised State science curriculum standards. The program will be held at the OSU Mansfield campus and includes lots of hand-on activities! Information about the workshop can be found on the Woodland Stewards website at http://woodlandstewards.osu.edu. The workshop runs from 9:00 a.m. Thursday through 3:00 p.m. Friday. Registration cost is $225 with Graduate Credit or $50 without graduate credit. Deadline for registration is July 31, 2013. Questions about the program can be directed to Cindy Meyer at 513-887-3722.

Byglosophy
All pests have pests, and pathogens their own parasites; nature is most interwoven. Jonathan Swift (1667-1745) noted this important foundation of biocontrol and literary comeuppance long ago with his ditty:

"So, naturalists observe, a flea
Hath smaller fleas that on him prey;
And these have smaller still to bite 'em;
And so proceed ad infinitum
Thus every poet, in his kind
Is bit by him that comes behind."
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