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This is the 15th 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.

In This Issue:

1. PLANTS OF THE WEEK: Annual (Angelonia); Perennial (Stachys or Wood Betony); Woody (Annabelle Hydrangea); Vegetable (Bell Pepper); and Weed (Canada Thistle).
2. HORT SHORTS: Frisky Frogs and Tons of Toads! and Be on the Lookout for Barn Owls.
3. BUG BYTES: Coneflower Calamities (Sunflower Head-Clipping Weevil, Coneflower Rosette Mite, and Aster Yellows); Summer Cats on the Prowl (Walnut Caterpillars and Yellownecked Caterpillars); Biting Mites and Oak Marginal Fold Galls; Hornworms on Tomatoes; Black Widow Spiders in Ohio; Check Your Beetles (Checkered Beetle); and Windshield Wipes (Bagworms).
4. DISEASE DIGEST: Downy and Out Go the Cukes and Powdery Mildews.
5. TURF TIPS: Mushrooms in Turf.
7. WEATHERWATCH: Weather Update.
8. COMING ATTRACTIONS: Diagnostic Walkabout for the Green Industry; Thousand Canker Disease of Walnut Workshop; and Youth Scientist Adult Education Class.
9. BYGLOSOPHY.

APPENDIX - ADDITIONAL WEBSITE RESOURCES.

1. PLANTS OF THE WEEK.

*ANNUAL - ANGELONIA (Angelonia angustifolia). This plant is still relatively new to the flower bed (introduced in the mid- to late-90's) but is an excellent low-maintenance flower that withstands hot, cold, wet, dry, and just about any conditions thrown its way. Summer snapdragon is another common name that is appropriate as the flowers resemble snapdragon flowers. They bloom on stems that rise slightly above the foliage and make great cut flowers. The flowers come in the pastel range, and include pink, purple, white, lavender, and bi-colors.

The plant has a vase-shaped growth habit and can grow around 1 - 3' tall depending upon the cultivar. There are also cultivars that are shorter with more compact flower stems as well as those that are spreading. Angelonia are great for flower beds or hanging baskets and containers. Plant them in full sun for best flowering.

*PERENNIAL - STACHYS or WOOD BETONY (Stachys officinalis). This tried and true but little-used perennial is great for Ohio gardens and for attracting bees. In June, they begin to bloom by sending up flowers stems with dense purplish-pink flowers at the top of the stems. These flowers can last as long as a month and are very attractive to many species of bees.

The foliage is dark-green with a slightly scalloped edge and looks good when the plant isn't in bloom. The rounded mound gets around 2 - 2.5' tall and about as wide. As the plants grow, they develop underground stems and fill in
an area nicely, providing a great ground cover. 'Hummelo' is easy to grow, and is drought tolerant once established, but will need watered more often in the early stages of establishment. There are no major insect or pest problems.

*WOODY - 'ANNABELLE' HYDRANGEA (*Hydrangea arborescens* 'Annabelle'). A common joy this summer is the massing of Annabelle hydrangea plants with their large, sometimes foot-wide symmetrical white balls of bloom. Out of the garden these blooms are also excellent cut and dried flowers. This small shrub, about 3 - 5' high and a little wider, has few pest problems and if pruned heavily in the winter will develop vigorous new growth in spring and summer that may support the heaviness of the large blooms without staking. Sometimes staking will help if there is heavy bloom production that can result in drooping of the blossoms and stems especially with the weight of water following rains.

Plant hydrangea in partial shade or if in full sun, make sure irrigation is adequate. It is tolerant of diverse soils, but good drainage is helpful, as usual. Hydrangea does well in woodlands and gardens. The cultivar 'Annabelle' was discovered in the wild near Anna, Illinois, and was selected for its large blooms. 'Annabelle' will often flower for much of the summer.

*VEGETABLE - BELL PEPPER (*Capsicum annuum*). By now most of the early planted peppers should be fruiting in the vegetable gardens. Bell peppers are a standard in most vegetable beds. Originating in Central and South America, peppers have been developed into a generous number of varieties suited for various culinary and ornamental uses. The bell pepper, or sweet pepper, usually has the largest fruit and is the least hot of all the peppers.

Plants are normally spaced 18" apart with 2' between rows. Applying a balanced fertilizer at planting and again 4 - 6 weeks later will keep the plant vigorous throughout the season - a soil test is the best method to determine the actual fertilizer needed in the garden. Very high temperatures during the summer can cause the flowers to drop. Each pepper plant can yield around a half-dozen fruits, so plan accordingly. 'California Wonder' is a common green variety, but garden centers also carry bell peppers in a variety of colors and sizes. Peppers are also a good candidate for growing in containers. The more colorful varieties might also be used in the landscape.

*WEED - CANADA THISTLE (*Cirsium arvense*). The bane of every gardener, Canada thistle is an aggressive, difficult to control perennial that will form large colonies if left unchecked. Growing 2 - 3' tall, this thistle is noted for the spines which line the margins of the deeply lobed leaves as well its extensive network of rhizomes which make this weed very difficult to control. Rhizomes can grow over 12' per year and can be found growing more than 3' below ground. Plants arise from buds anywhere along the rhizome. New colonies get their start from wind-blown seed or can self-propagate from sections of rhizomes as small as 1" in length. Purple flowers are dioecious with male and female flowers being produced on different plants. Seedheads are covered in tufts of fuzz, which aid in dispersal of the attached seed.

Due to the extensive rhizome system, control of Canada thistle can be difficult. Continual pulling or cutting can eventually starve the rhizomes, much like repeated applications of a burn down herbicide. Broadleaf herbicides will provide some control but may need repeated applications. Products specially formulated for thistle control (such as Stinger) are also available. Hand pulling, digging and removing every inch of thistle rhizome is time consuming but effective. One can also occasionally see colonies of Canada thistle that have white leaves and stems. This is the result of an infection with a bacterial disease, *Pseudomonas syringae pv. tagetis*, which can weaken the plant but will not destroy the thistle colony.

2. HORT SHORTS.

A. FRISKY FROGS AND TONS OF TOADS! It is not at all uncommon to encounter tiny, newly metamorphosed frogs and toads hopping about yards this time of year. Marne Titchenell reported encountering SPRING PEEPERS (*Pseudacris crucifer*), GRAY TREEFROGS (*Hyla versicolor*), and AMERICAN TOADS (*Anaxyrus americanus*) in central Ohio, and Ashley Kulhanek reported toads in Medina County. It’s likely that all across Ohio, homeowners are encountering these juvenile hoppers while mowing, weeding, and tending the gardens and flowerbeds around the home.
All 3 of these Ohio amphibians require water for breeding, which begins in the spring. If the adults of these species do not already live next to a source of water, they migrate from their summer grounds to water (small pools or ponds). The chorusing of frogs and toads marks the breeding season, as males and females call to locate mates. Peepers are among the first chorusing frogs of the season, starting their characteristic "peeping" as early as February. American toads begin a bit later into March, but both toads and peepers usually fall silent by the end of May. Gray treefrogs begin calling late April in most years, and conclude their chorusing by the end of July. That means that any trilling calls heard now are likely those of treefrogs and not toads.

Taking into account the length of time for eggs to hatch (3 - 15 days depending on the temperature of the water) and tadpoles to metamorphose (6 - 10 weeks), young toads and frogs of these 3 species are typically seen in June and July. As the adults undergo migrations to breeding pools, so do juveniles from the breeding pools. These migrations are when homeowners typically notice the unusual number of small toads and frogs in their yards. Usually, with a little patience on the part of the homeowner, the frenzy of frogs and toads declines in a couple weeks’ time as the young amphibians migrate on and disperse to find their own, individual spaces.

Homeowners are often concerned about causing harm to young frogs and toads during these migrations from the breeding pools. There is both good news and bad news in response to that concern. The bad news is that it is sometimes impossibly not to cause harm, especially when there are 50 - 60 tiny toads hopping around in the grass. The good news is that the reproductive strategies of frogs and toads account for mortality. Spring peepers and gray treefrogs can lay 1,000 - 1,500 eggs in a season, and a single female toad can lay up to 20,000 eggs! Imagine if every one of those 20,000 eggs survived! By all means be careful where you step, but if an accident should occur, rest assured the populations of peepers, treefrogs, and toads will persevere.

B. BE ON THE LOOKOUT FOR BARN OWLS. The Ohio Department of Natural Resources, Division of Wildlife has requested that Ohio citizens report any sightings of BARN OWLS (Cyto alba) to 1-800-WILDLIFE or send an email to WildInfo@dnr.state.oh.us. Barn owls are listed as a threatened species in Ohio and have had a fluctuating history of abundance in the buckeye state - up until now that is. The number of barn owl nests in Ohio is up from only 19 in 1988 to more than 100 in 2012. This comeback has led Ohio wildlife biologists to request sightings of these beautiful raptors in an effort to estimate the number of barn owls in Ohio. The barn owl is easily identified by its white, heart-shaped face and large black eyes. The body is a mottled mix of dark grey to golden-brown feathers with a black-dotted buff to tan feathered chest. Barn owls prefer to forage over open areas for mice and other small rodents, and are cavity nesters. True to their name, barn owls are content to also live in human structures, such as barns.

3. BUG BYTES.

A. CONEFLOWER CALAMITIES. Participants in this week’s SW Ohio BYGLive! Diagnostic Walk-About observed several problems on purple cone flower (Echinacea purpurea) in a mass planting. These included dangling flower heads snipped from the stems by the SUNFLOWER HEAD-CLIPPING WEEVIL (Haplorhynchites aeneus); tufted flower parts that rise rosette-like from the cones and are produced by the CONEFLOWER ROSETTE MITE (no scientific name); and chlorotic, distorted, and stunted stems, leaves and flowers caused by the disease ASTER YELLOWS.

In last week's BYGL 2013-14 (07/05/13), we reported that Dave Shetlar was observing damage from the sunflower head-clipping weevil on coneflowers in central Ohio. This is a well-known pest of sunflowers (Helianthus spp.) in the Great Plains; however, coneflowers appear to be a preferred host in Ohio with significant injury first reported in the BYGL in 2010 (BYGL 2010-15 (7/15/10)). In the past, weevils were found in central and western Ohio, primarily in and around Columbus and Dayton. Joe Boggs noted this is the first time he has found the weevil in Cincinnati. Female weevils chew a ring of holes in the stem causing the flower heads to break over. They then lay eggs in the dangling flower heads. The eggs hatch and the larvae feed on the decomposing flower tissue once the heads hit the ground.
The coneflower rosette mite is an eriophyid mite (family Eriophyidae) that has yet to be taxonomically categorized, so it has no scientific name or approved common name. However, the mite is generally referred to as the coneflower rosette mite based on the damage that it causes to coneflowers. The mites live inside the developing flower buds and suck nutrients from the base of the flowers. As a result, green to reddish-green elongated rosette-like tufts of stunted and distorted flower parts will sprout from the tops or sides of the cones of coneflowers. Not only is the damage unsightly, it can also seriously reduce seed production.

Aster yellows disease is produced by a phytoplasma. These single celled organisms were once referred to as "mycoplasma-like organisms"; however, they are now classified as a group of very small, specialized bacteria. All known forms are plant pathogenic and are naturally spread from plant to plant by sucking insects, particularly leafhoppers. Symptoms of aster yellows include: chlorotic, curled foliage; stunted stems; and bizarrely distorted flower parts. Flower petals may appear as a ring of tiny greenish-yellow spoons arrayed around the base of highly deformed cones. Cones may appear as tightly clustered rosettes.

Damage by the coneflower rosette mite is sometimes mistakenly identified as symptoms of aster yellows. Indeed, images can be found on the web that clearly show mite damage but are mislabeled as symptoms of the disease. The main differences between mite and disease symptoms are the colors of the rosettes. Aster yellows produces yellowish-green rosettes while the mites produce rosettes that usually retain some of the original color of the cones. Of course, the mites do not affect the rest of the plant; their damage is confined to the flower cones. Aster yellows wreaks havoc on all parts of the plant.

Sanitation is key to managing all of these coneflower calamities. Flower heads that are dangling from stems or lying on the ground should be collected and destroyed to eliminate the next generation of weevils. Cutting and destroying flower heads deformed by mite activity will reduce mite populations. Management of aster yellows requires more extreme sanitation measures since the entire plant is affected and a potential source for new infections; diseased plants should be dug up and destroyed.

B. SUMMER CATS ON THE PROWL. A participant in this week's S.W. Ohio BYGLive! Diagnostic Walk-About wowed the group by bringing a nicely bagged colony of WALNUT CATERPILLARS (Datana integerrima). This means a sister species; YELLOWNECKED CATERPILLARS (D. ministra), is also most likely on the prowl in southwest Ohio. The caterpillars of both species are general defoliators and they feed in groups that may include 10 - 30 caterpillars. These 2 summertime caterpillars are sometimes mistaken for one another since both species occur at the same time, and they share some general traits as well as some tree hosts.

Both species of moths lay eggs on the underside of leaves. First instar caterpillars often go unnoticed since they only skeletonize the lower leaf epidermis. Damage becomes more apparent when the caterpillars reach the second instar stage and consume most of the leaf, except for the midvein. In later instar stages, whole leaves are devoured, often including the petiole. Since the caterpillars of both species are gregarious feeders, defoliation tends to occur one branch at a time, unless populations are high and multiple groups are feeding on many branches. Both species of caterpillars have the interesting habit of rearing their front and tail ends in unison to ward off offenders. Also, they both pass through several color phases, meaning that the larvae change color patterns as they mature.

The yellownecked caterpillars have black heads and a bright orange "neck," or prothorax, which gives them their common name. The caterpillars pass through three distinct color phases during their development. First instar caterpillars are copper colored with no distinct lines. The next color phase begins with second instar caterpillars; they have distinct alternating longitudinal yellow and orangish-red lines. The final color phase is observed on last instar caterpillars which have alternating longitudinal black and yellow lines. Although all instars have hairs, the hairs are most evident during the last instar stage.

Walnut caterpillars also have 3 color phases. Newly hatched caterpillars are yellow and remain this color through the second instar stage. During the third and fourth instar stages, the caterpillars are brick red with faint white stripes. In the final instar stage, the caterpillars are grayish black with long, soft white hairs. Walnut caterpillars practice an unusual molting behavior. When molting, they group together on the bark of their host tree and all molt at the same time, leaving behind a mass of hairy exoskeletons that looks like a patch of fur.
The yallownecked caterpillars feed on a wide variety of trees including: crabapples, flowering fruit trees, maples, elms, nut trees, beech, lindens, honey locusts, and boxwoods. There are normally 2, and sometimes 3 generations in Ohio. With the early spring this season, there will almost certainly be 3 generations this year. As their common name implies, walnut caterpillars favor walnut trees, but they will also feed on hickories, birches, oaks, and willows. This species usually has 2 generations per season in Ohio; however, there may be an additional generation this year.

Caterpillars of both species feed for 4 - 6 weeks until full grown (about 2” long), then they drop from the trees and pupate in underground cells. Although the damage caused by both types of caterpillars can be devastating to small trees in landscapes, these caterpillars are seldom considered a serious pest in woodlands. The caterpillars can be easily managed on small landscape trees by knocking them to the ground and performing the "caterpillar stomp dance"; so far, none have become resistant to this control method.

C. BITING MITES AND OAK MARGINAL FOLD GALLS. Joe Boggs reported that participants in the BYGLive! Walk-About observed a red oak with a large number of oak marginal fold galls. The galls are produced by a midge fly (= gall fly, family Cecidomyiidae) and the observation prompted a discussion about the link between the gall-maker and a particularly nasty non-native itch mite, *Pyemotes herfsi*. Bites from the mite produce small, circular, rosy-red, itchy skin lesions and the discomfort may last for several days.

The midge-mite connection first came to light in 2004 in Pittsburg, Kansas. Since that time, itchy mite outbreaks have been reported in Chicago as well as various locations in Missouri, Nebraska, Oklahoma, Pennsylvania, Tennessee, and Texas. In 2008, the Hamilton County (Ohio) Health Department reported an outbreak in the eastern part of the county along a bike trail just east of Cincinnati.

Although the mite is classified as an insect parasite, it behaves more like a vampire in the truest horror-picture sense of the word. The mite first immobilizes its victim by using its fag-like mouthparts (chelicerae) to inject saliva containing a paralyzing neurotoxin, and then it drains the victim's hemolymph (insect blood). The neurotoxin of this mighty-mite is powerful, allowing it to subdue an insect larva that's 166,000 times its own weight. Indeed, it is suspected that the neurotoxin plays an important role in producing skin reactions suffered by its people-victims.

The mite has been found on a wide range of insect hosts; however, outbreaks involving bites on people have been most strongly associated with large mite populations developing in association with the oak gall-making midge flies. Unfortunately, this link to oak galls has given rise to a sometimes used common name for the mite of "OAK LEAF GALL MITE" which implies the mites are the gall-makers rather than their midge fly hosts.

The mites will feed on both the larvae and pupae of the midge fly gall-maker, and each female mite is capable of producing over 300 offspring. They will continue producing more mites as long as midge-food is available. In late summer, when the midge larvae drop from the leaf-fold galls to pupate, the mites begin to drop as well and this is when they begin to come in contact with people. While all of the factors that drive biting outbreaks are unknown, it is known that outbreaks tend to be relatively short-lived, lasting only a few weeks. There are no controls for the mite, and attempting to control the gall-making host is problematic. We do not want to speculate whether or not the high population of oak marginal fold galls observed by the Walk-About participants will necessarily lead to an itch mite outbreak; the observation should simply enhance awareness of the possibility.

D. HORNWORMS ON TOMATOES. TOMATO HORNWORMS (*Manduca quinquemaculata*) and TOBACCO HORNWORMS (*M. sexta*) are showing up on tomato plants in southern Ohio. Both hornworms will feed on tomatoes as well as several other closely related plants in the Solanaceae family including eggplants, peppers, potatoes, tobacco, and certain weeds. Backyard vegetable gardeners need to be alert for the symptoms of feeding activity by these luminous green caterpillars which includes missing leaves and stems, hunks bitten out of developing fruit, and black barrel-shaped excrement droppings (frass) on leaves and the ground beneath infested plants.

Tomato and tobacco hornworm caterpillars are the larvae of hawk or sphinx moths. Indeed, tomato hornworms eventually grow up to become the 5-Spotted Hawkmoth; the "quinque" in the specific epithet refers to the five spots on the moth. The caterpillars are called "hornworms" because of the prominent horn-like projection rising from the
upper surface at the end of their abdomen. They can grow to a truly impressive size of 4" in length and 1/2 - 5/8" in
diameter. However, despite their size, these cleverly camouflaged caterpillars may go undiscovered for weeks due
to their coloration and white markings. Both hornworms have white diagonal lines along their sides. The tobacco
hornworms have a series of white diagonal lines while the lines on tomato hornworms appear as a series of white
sideway "V's".

The caterpillars can be controlled through hand-picking; however both caterpillars are also subject to the
depredations of several predators and parasitoids. Paper wasps, yellow jackets, and other wasps will grab them,
chew them up, and take the remains to their nests to feed their larvae. The tiny parasitoid wasp, Cotesia congregata
(Family Braconidae) inserts its eggs into the caterpillars and the resulting wasp larvae consume the hornworms
from the inside out. Just before the hornworms die, the fully grown wasp larvae erupt through the upper epidermis
to form oval, white, silk pupal cases. Rows of these white cocoons sprouting from tobacco and tomato hornworms
are a well-known and a welcomed sight to home gardeners. Of course, the parasitized caterpillars should be left
alone. They will do little to no feeding, and the wasp cocoons represent the potential future demise of numerous
other hornworms.

E. BLACK WIDOW SPIDERS IN OHIO. Joe Boggs reported that he received one his first offers of the season
from a helpful homeowner who was interested in sharing a "rare" black widow spider that they had captured. They
believed black widows do not occur or are rarely found in Ohio; a common misconception. In fact, both the
southern black widow (Latrodectus mactans), and the northern black widow (L. variolus) are found throughout the
state. However, they are not commonly encountered because of their secretive habits. The widow spiders are
grouped with "cobweb weavers" (family Theridiidae) and produce a small, tangled web. They are medium-sized
spiders with bulbous abdomens and a covering of short, fine surface hairs that give them a shiny or satiny sheen.
Of course, black widows are...black.

The old saying, "hour-glass red, you are dead," is based on two other misconceptions about black widows. The
dep red marking on the underside of the abdomen is not always shaped like an hour-glass, and it may be orangish-
red or yellow. The middle part of the hour-glass may be missing, or there may only be some variation of a "V"-
shaped marking. Some individuals have no markings, while others sport a red line on the top of the abdomen.
Male spiders are about half the size of female black widows and their abdomen has red spots flanked by white lines
or bars. Of course, the males are notoriously short-lived once they meet a female...the females are called "widows"
for a good reason.

While there are historical records of deaths being caused by black widow spiders, the spiders are not aggressive and
seldom venture into occupied homes or buildings. Both the northern and southern black widows prefer to live
outside in old abandoned buildings, barns, and wooden outhouses. Indeed, painful encounters declined with the
widespread adoption of indoor plumbing. The northern widow also resides under rocks or logs, and may
occasionally be found within dense shrubs. Their coloration provides perfect camouflage for remaining undetected
by allowing them to blend into shadows. If you find a black widow outdoors, simply leave it alone. The spiders do
not represent a serious threat. Indeed, they are considered beneficial since they do represent a serious threat to
insects.

F. CHECK YOUR BEETLES. Danae Wolfe reported spotting a real wonder in the woods, a CHECKERED
BEETLE (family Cleridae). These beetles have clubbed antenna and are often colorfully banded, or "checkered,"
with short hairs or pubescence on their bodies. They are commonly found in woodlots near dying trees and
therefore may give the impression that they are wood pests. This is not the case. The majority of checkered beetle
species are beneficial predators. Both the larva and adults of the checkered beetle will feed on common pests such
as bark beetles, woodborers and twig girdlers, and drugstore and cigarette beetles. Together with other predators,
checkered beetles help to keep the populations of unwanted pests in check.

Far too often, insects are thought of as "bad" pests and nuisances. However, less than 1% of insect species are
actually considered true pests that cause economic or personal harm. So before you decide on any control methods,
check your insects. Are they beneficial or a problem? Your county OSU Extension Office can help with insect
identification and advice.
G. WINDSHIELD WIPES. BYGLers also ran into a number of other insect pests this week including:

*In late June, BYGL reported on the hatch of BAGWORM (*Thyridopteryx ephemeraeformis*) in northwest Ohio, see BYGL 2013-2014 (6/27/13). Randy Zondag reported on bagworm, noting an unusually high population for northeast Ohio. They are being spotted in everything from red maple to evergreens.

It is anticipated that it will be a big year for bagworm populations compared to previous years. Nursery and home owners who would typically see minimal damage to plants at the end of the season may find themselves observing heavier infestations and more obvious damage from bagworms this year. It is thought that the weather and heavy rains may have contributed in part to the larger-than-normal populations. The rain has made it difficult for nurseries to apply pesticides on their regular schedule. For past articles on bagworms and control, see BYGL 2013-2014 (5/30/2013).

4. DISEASE DIGEST.

A. DOWNY AND OUT GO THE CUKES. Erik Draper reported DOWNY MILDEW (DM) has begun its foliar rampage against cucumbers in northeast Ohio, especially Geauga County. This fungal finding was on the heels of confirmed reports of DM in cucurbits in Wayne and Medina counties by Dr. Sally Miller, Ohio State University State Vegetable Plant Pathologist. This extremely virulent fungus (*Pseudoperonospora cubensis*) rapidly infects and kills just the leaf blades of plants in the Cucurbitaceae family. For most backyard gardeners, this disease affects mainly cucumbers, both pickling and fresh eating. Occasionally squashes and pumpkins will also be affected. Of the cucurbit crops, cucumbers and pickles are the most susceptible to the DM fungus. The next most susceptible vine crop after cucumber is cantaloupe, followed by pumpkin and other squashes. The crop least susceptible is watermelon. The rapid death of the protective foliage exposes all fruit to direct sunlight, which results in sunscald and severely reduces both quantity and quality of the fruit.

On cucumbers, downy mildew is easily identified by its unique checkerboard-like appearance of yellow and green on older leaves. The leaf infections cause a rapid chlorosis of areas seemingly restricted by small leaf veins, resulting in angular lesions that are sharply delineated. At first, just the leaf blade yellows, turns brown and then rolls upward as the leaf dries out. The leaf petiole and the vine remain untouched and green, but eventually, the entire plant collapses due to the rapid loss of the leaves. In moist, humid conditions, a fungal layer of white to purplish to almost black in color may appear on the underside of yellow leaf lesions.

This foliar disease can be managed but it requires a strict adherence to a fungicide application program. Unfortunately for homeowners, when downy mildew symptoms are easily recognized on the plants, it is usually too late to do anything about this disease. However, for commercial growers, if symptoms are detected early, using specific fungicides makes it possible to delay the plant's eventual demise enough to produce a crop. Commercial fungicide recommendations for Ohio can be found at [http://geauga.osu.edu/topics/horticulture/downy-mildew-fungicide-recommendations](http://geauga.osu.edu/topics/horticulture/downy-mildew-fungicide-recommendations)

B. POWDERY MILDEWS. One of the surprises to many of us is the host specificity of powdery mildew fungi. The powdery white growth on plant leaves stems or fruits, the "sign" of the many powdery mildew fungal pathogens, looks similar to the observer's naked eye, whether looking at powdery mildews on cucumber, zinnia, bluegrass, lilac, or planetree. However, these fungi are all different from each other - they do not cross-infect. The lilac powdery mildew fungus will not infect cucumber and the cucumber powdery mildew fungus will not infect lilac.

A second differential among some powdery mildew diseases is with "symptoms", the plant response to the infection. With magnolia and dogwood, for example, while early in disease development there is some of the tell-tale powdery fungal growth (the "sign" of the pathogen). Over time this powdery growth is difficult to see but leaves redden and desiccate and browning and scorching (dogwood) or even grayish discoloration (magnolia) is evident on leaves. This is often misdiagnosed as other problems, because this simply does not seem typical of powdery mildew. With time, expanding your diagnostic eye for these less typical manifestations of powdery mildew diseases will prove useful.
5. TURF TIPS.

A. MUSHROOMS IN TURF. There has been an explosion of mushrooms in turfgrass as a result of the wet weather that Ohio has been experiencing over the past couple of weeks. The moisture and warm to hot temperatures have favored the development of these reproductive structures of several species, notably the HAYMAKER'S MUSHROOM (\textit{Panaeolina foenisecii} or \textit{Psathyrella foenesecii}) (a.k.a. Lawn Mower's Mushroom) and the GREEN SPORED PARASOL MUSHROOM (\textit{Chlorophyllum molybdites}) (a.k.a. the green spored Lepiota).

The haymaker's mushroom is a very common, little, somewhat non-descript, brown mushroom that pops up in lawns, on golf courses, along roadsides and in meadows. It will be found scattered singularly or in small groups amongst the grasses, clovers and weeds. It is recognized by its small, hemispherical cap that is about 1" in diameter to 1 1/4" in diameter if it flattens out. The caps often change color as they age from dark-brown when they are fresh to light tan with a speckled dark brown ring as they dry. It is a gilled mushroom that produces dark brown to purple-brown spores. It is reported as poisonous because it contains very small amounts of the hallucinogenic psilocybin chemical. Those looking for an easy "high" will probably be disappointed for the amount of the hallucinogenic chemical in the mushroom is barely detectable or non-existent in some cases. However, there still may be concern for very young children, toddlers, and pets (some dogs have a taste for mushrooms and will search for them in the yard).

Compared to the haymaker's mushroom, the green spored parasol mushroom is a giant. It is not unusual for this mushroom to produce caps that measure 7 - 12" in diameter, stand 5 - 10" tall, and have a stalk that 1" in diameter. It gets its common name from the fact that it does produce green spores. If one produces a "spore print" from this mushroom, it will be an impressive olive-green color. Or it could also be from the fact that one will turn "green around the gills" after eating it. This is not one of the edible wild mushrooms. If one does eat this mushroom, they will suffer major gastro-intestinal distress, vomiting and unpredictable, explosive diarrhea. This mushroom frequently pops up in areas tree stumps had been ground out of the landscape or as a "fairy ring" in the turf.

These mushrooms (as well as many others that may be found in lawns and other places) may well be dangerous for toddlers and pets if they find and consume ones that contain toxic compound. Is there enough of a concern to "freak-out" and declare war on every mushroom that pops up in the lawn if one has a toddler or pet in the house? Not really and it is not very practical either. Remember that the mushroom that one sees above ground only represents a small fraction of the overall body of the mushroom and it may be next to impossible to destroy the entire body of the fungus just to get rid of the mushrooms in the yard. It is also not very advisable to do so, since the fungi are so very important in nutrient recycling and mycorrhizal associations with so many different plants. It would be much better and more practical to teach young children not to eat everything they see - and if they aren't learning this lesson well, not to leave them unsupervised on lawns where these and other mushroom grow. One could also spend some time to hand remove the most obvious mushrooms from the lawn before allowing children or pets to use the yard. This activity may only be practical for small yards.

6. INDUSTRY INSIGHTS.

A. EMERALD ASH BORER UPDATE. On Wednesday, July 3, 2013, the Ohio Department of Agriculture (ODA) announced that two emerald ash borer (EAB) adults were submitted to ODA for confirmation from Highland and Hocking counties. Because this was the first confirmed infestation in both of these counties - they have been added to the official infestation map.

The following Ohio counties have not had an EAB specimen submitted to ODA for confirmation: Adams; Brown; Athens; Carroll; Coshocton; Gallia; Harrison; Holmes; Jackson; Meigs; Monroe; Morgan; Noble; Preble; Ross; Tuscarawas; Vinton; and Washington. If you are aware of an infestation in one of those counties, a specimen should be submitted to ODA must accompany the Cooperative Specimens for Determination. A copy of form can be found on the ODA website at: [http://www.agri.ohio.gov/public_docs/forms/Plant/EAB/Plnt_4207-001.pdf]
B. GET YOUR GREEN INDUSTRY FIX WEBINAR: AUGUST 14. We had a great Webinar session on powdery mildew disease, Ginkgoes, the Great Lakes Early Detection Network Application for Androids and Iphones, bagworms, Japanese beetles, and mushrooms in turfgrass this past Wednesday. Next up: Wednesday, August 14, 8:00 - 8:50 a.m. Join OSU Buckeye Yard and Garden Line (BYGL) experts for this Ohio Nursery Landscape Association's Green Industry Webinar then. If you have questions about registering, contact ONLA at 614-899-1195 or 800-825-5062.

7. WEATHERWATCH.

A. WEATHER UPDATE. The following weather information summarizes data collected at various Ohio Agricultural Research Development Center (OARDC) Weather Stations spanning the dates from July 1 - 10, 2013, with the exception of the soil temperatures which are readings from Tuesday, July 10, 2013 at 5:05 p.m.

Well the wet weather continues. Weather reports were somewhat like a broken record - wet, wet, and wet. Each of the weather stations listed below are reporting actual precipitation totals exceed the normal or average precipitation. Severe weather rolled through northern Ohio on Wednesday evening bringing more rain, hail, flooding, and high winds.

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<tbody>
<tr>
<td>Ashtabula</td>
<td>NE</td>
<td>79.9</td>
<td>66.1</td>
<td>1.28&quot;</td>
<td>0.8&quot;</td>
<td>74.34/80.95</td>
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<tr>
<td>Wooster</td>
<td>NE</td>
<td>82.2</td>
<td>66.5</td>
<td>3.41&quot;</td>
<td>1.4&quot;</td>
<td>78.12/74.92</td>
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<tr>
<td>Hoytville</td>
<td>NW</td>
<td>80.6</td>
<td>66.3</td>
<td>4.53&quot;</td>
<td>1.2&quot;</td>
<td>74.20/75.18</td>
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<tr>
<td>Columbus</td>
<td>Central</td>
<td>82.2</td>
<td>68.0</td>
<td>2.64&quot;</td>
<td>1.5&quot;</td>
<td>76.69/76.06</td>
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<tr>
<td>Piketon</td>
<td>South</td>
<td>82.5</td>
<td>66.6</td>
<td>2.35&quot;</td>
<td>1.2&quot;</td>
<td>84.92/82.72</td>
</tr>
</tbody>
</table>

For a link to the OARDC Weather Stations, visit: [http://www.oardc.ohio-state.edu/centernet/weather.htm].

8. COMING ATTRACTIONS.

A. 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].

B. 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.

C. 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.

9. BYGLOSOPHY. "Always try to grow in your garden some plant or plants out of the ordinary, something your neighbors never attempted. For you can receive no greater flattery than to have a gardener of equal intelligence stand before your plant and ask, "What is that?'" - Richardson Wright

APPENDIX - ADDITIONAL WEBSITE RESOURCES:

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

Buckeye Turf
http://buckeyeturf.osu.edu

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

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

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

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

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

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

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

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

Following are the participants in the July 9th conference call: Pam Bennett (Clark); Joe Boggs (Hamilton); Jim Chatfield (Hort and Crop Science); Julie Crook (Hamilton); Erik Draper (Geauga); Denise Ellsworth (Entomology); Ashley Kulhanek (Medina); Tim Malinich (Erie); Cindy Meyer (Butler); Amy Stone (Lucas); Nancy Taylor (PPDC); Marne Titchenell (School of Environment and Natural Resources); Danae Wolfe (Summit); Curtis Young (Van Wert); and Randy Zondag (Lake).

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

BYGL is a service of OSU Extension and is aided by support from the ONLA (Ohio Nursery and Landscape Association) [ http://onla.org/ ; http://buckeyegardening.com/ ] to the OSU Extension Nursery, Landscape and Turf Team (ENLTT). Any materials in this newsletter may be reproduced for educational purposes providing the source is credited.
BYGL is available online at: [http://bygl.osu.edu](http://bygl.osu.edu), a website sponsored by the Ohio State University Department of Horticulture and Crop Sciences (HCS) as part of the "Horticulture in Virtual Perspective." The online version of BYGL has images associated with the articles and links to additional information.

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

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Keith L. Smith, Associate Vice President for Agricultural Administration; Associate Dean, College of Food, Agricultural, and Environmental Sciences; Director, Ohio State University Extension and Gist Chair in Extension Education and Leadership. TDD No. 800-589-8292 (Ohio only) or 614-292-6181.