BUCKEYE YARD AND GARDEN LINE 2014-14
07/03/14

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

This is the 14th 2014 edition of the Buckeye Yard and Garden Line (BYGL). BYGL is developed from a Tuesday morning conference call of Extension Educators, Specialists, and other contributors in Ohio.

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1. PLANTS OF THE WEEK.
ANNUAL - DICHONDRA ‘SILVER FALLS’ (Dichondra argentea ‘Silver Falls’). This low-growing (about 2” tall) vigorous spreading plant is excellent for use in hanging baskets since it has great cascading capability. It can also be used as ground cover in flower beds, but must be planted in well-drained soils. If it’s in the ground and in contact with soil, it will root at the nodes. ‘Silver Falls’ puts on significant growth in a single growing season and can fill an area approximately 3’ by 3’. Place it in full sun to part shade for best growth; it’s quite heat tolerant as well.

The foliage is gray-green and closer to silver in color and accents other plants in a hanging basket or container perfectly. It is also one of the vining, trailing plants that doesn’t require pinching in order to branch and spread. Plant it and watch it go!

Author: Pamela J. Bennett

PERENNIAL – COMMON MILKWEED (Asclepias syriaca). Many BYGL writers reported seeing common milkweed in bloom this week. Despite having "weed" in its name, milkweed is a great option for natural or native plant gardens as it offers a beautiful fragrance and provides habitat for wildlife.

Common milkweed is a native perennial that grows tall and erect. The plant can reach heights of up to 6’. Oblong leaves may be whorled or oppositely arranged and can measure 3–10" long and 2–5” wide. Flowers bloom June through August in sphere-like clusters near the top of stems. The pink to lavender flower clusters are 2–4” in diameter and attract bees, wasps, and a variety of other insects. Fruits develop as large green pods that burst open in the fall and winter to reveal fluffy seeds that are dispersed by wind. Milkweed can spread by both seed and underground rhizomes, giving it the potential to become aggressive.

Common milkweed is perhaps best known as a host plant for monarch butterflies. Because monarch caterpillars feed exclusively on milkweed plants, common milkweed is often touted as a great native plant for butterfly gardens. Milkweed should be planted in the sunniest area of your garden in well-drained soil.

It's important to note that many milkweed species (including common milkweed) are toxic to humans and other animals. Milkweed's toxicity may be a problem in agricultural fields that are used for grazing.

Author: Danae Wolfe

WOODY – ZELKOVA (Zelkova serrata). Zelkova is often touted as a replacement for the AMERICAN ELM (Ulmus americana) because it has a similar vase shape and can survive in many urban conditions. This tree is an excellent shade tree and is easy to transplant. Zelkova can reach heights of 50-80’ and does well in sun to partial shade in zones 5-8. Leaves are simple and alternate which turn yellow, brown to a reddish purple in the fall. This tree is in the Ulmaceae family but is known to be resistant to Dutch-elm disease.

Author: Cindy Meyer

VEGETABLE – Basil (Ocimum basilicum). One of the most popular and easiest culinary herbs to grow is sweet basil. A member of the mint family (Lamiaceae), it is native to India and Asia and has been cultivated there for more than 5,000 years. This tender annual is primarily grown for its fragrant leaves, used fresh or dried, to spice up numerous dishes of both Asian and Western cuisines. There are numerous varieties of basil. Some of the unusual fragrances and flavors include cinnamon, lemon and anise. Foliage colors range from pale to dark green, magenta and varying shades of purple.
Like most herbs, basil requires a sunny location that receives at least 6-8 hours of sunlight per day, and requires well drained and fertile soil. It is easy to grow from seed regardless of whether you start the seeds indoors or direct seed in the garden after the danger of frost has passed. Basil is very sensitive to frost injury. Since moisture is important to a good basil crop, adding organic mulch will help to keep the soil moist and also help to minimize weeds. To maximize production and to encourage a bushy and healthy plant it is important to prune basil regularly through the growing season. If basil is allowed to flower and form seed, it will become woody and yields will be much less.

Author: Julie Crook

*WEED – QUEEN ANNES LACE (Daucus carota). Queen Annes lace, also known as wild carrot, is often found along roadsides, in open fields, and occasionally creeping into landscapes. We may have all fallen into the trap. One plant of queen Annes lace can be beautiful as the flower is very delicate looking. But more than one can soon become an issue. Although queen Annes lace is considered a weed by most and is on numerous invasive plant lists, it can be a home for the eastern black swallowtail caterpillars and one can often find green lace wings hanging out for a meal of aphids or other soft bodied insects that happen to be feeding on queen Annes lace.

The plant was introduced from Europe and is a biennial plant, living for two years. The plant has a taproot and will often break off when mechanically trying to manage the plant. Mowing or removing the plants prior to it setting seeds will be helpful when trying to reduce future plants.

Author: Amy Stone

2. HORT SHORTS.

A. SAMPLE SELECTION CAN MAKE ALL OF THE DIFFERENCE WHEN DETERMINING WHAT IS WRONG WITH THE PLANT. Many BYGL readers are plant diagnosticians. As a gardener, we are always scouting in our own lawns, gardens and landscapes. As a green industry professional, you can be helping clients solve and provide solutions of pesky problems brought to your attention or ones that you have sought out on your own in a monitoring program in the landscape and nursery. And finally, our own co-horts in Extension providing diagnostics out in the landscape and nursery and those providing this expertise in the labs both on main campus and the lab shared with the Ohio Department of Agriculture (ODA) in Reynoldsburg.

Diagnostics can be challenging. A general rule is that a poor sample will often lead to a poor diagnosis; one that is incomplete and often requires an additional sample can cost both time and often money impacting the bottom line.

If someone is providing a sample to you to diagnosis a plant problem, begin thinking of what a great, I mean awesome, sample would look like. These are the same attributes that a sample should have if you are sending a sample to Ohio’s C. Wayne Ellett Plant and Pest Diagnostic Lab (CWEPPDL).

*Samples should be fresh, and not ones that have made the rounds in a vehicle for a few hours, days, or even weeks. You have to ask yourself, is this how the plant looked when it was part of the plant, or has the time it spent getting to the diagnosticians caused it to further decline. For example, were the leaves scorched, or was that result of the prolonged time in a vehicle. The television newscasters warn us to never leave a child or pet in car unattended during the summer. The same holds true of a plant sample.
*The size of the sample should represent what you are seeing of the overall condition of the plant in question. One brown leaf or one bare branch are not useful and can be difficult, if not impossible to determine a cause. Samples should include the range from healthy to the not so healthy, in other words from green to brown. That transition zone is key. Multiple samples are usually useful and often encouraged.

*In addition to the actual sample, information is also vital. This information can be documented in notes and should describe the who, what, when, where and why. Photographs can also be vital when telling the story of what you are seeing out in the field.

The more information – that is the more quality information – the better! We are extremely lucky to have the services of the CWEPPDL, and more importantly the folks that are working on those samples to provide information to the clients. The CWEPPDL is on the web at [http://ppdc.osu.edu](http://ppdc.osu.edu)

The website includes links to the forms that one will need to accompany that sample that will be mailed to the lab. Notice that there are multiple forms and choose the form that best describes your sample – turfgrass, general, and nematodes. You will also see the “spotlight” – information describing the smartphone app that can provide supporting document and the big picture.

So remember when submitting a sample to the lab, is the type of sample one that I would like to look at and work with. If it is not good enough for you, it is likely that it is not good enough for the clinic. We must end the submission of the dead-brown stuff. It doesn't tell us much!

*Author: Amy Stone*

3. BUGBYTES.


MALB was first recognized in Ohio in the fall of 1993 with reports of thousands of beetles congregating on homes and buildings and ultimately finding their way indoors to become a serious nuisance pest. Populations remained relatively high in Ohio throughout the 1990s and into the 2000s; however, for reasons that are not clearly understood, MALB populations began to decline in the mid-2000s with numbers receding to such an extent that MALB was seldom a problem in and around homes by 2007. Last year, MALB populations began to rebound in Ohio. There were numerous localized reports of large numbers of beetles entering homes in the fall, particularly in the southern part of the state.

*Author: Joe Boggs*

B. YELLOW POPLAR WEEVIL REDUX. We reported in BYGL 2014-11 (06/12/14) that the "summer generation" of the yellow poplar weevil (*Odontopus calceatus*) was causing noticeable feeding damage to its namesake host in Vinton County in southeastern Ohio. It appeared at the time the outbreak of this native weevil was highly localized and confined to that part of the state. However, reports came in this week of very high weevil populations in Medina County in northeast Ohio and Franklin County in
the central part of the state. Indeed, tulip trees in the State Capital landscaping in Columbus are heavily infested and Dave Shetlar (OSU Entomology) reported that star magnolias in a research plot on the OSU Waterman Farm are "getting hammered" by the weevils.

Yellow poplar weevil adults feed on leaves and the larvae feed within leaves as leafminers. Adults and larvae may be found on three hosts: yellow poplar (a.k.a. tuliptree or tulip polar); magnolia; and sassafras. Thus, alternate common names include "sassafras weevil'' or "magnolia leafminer."

The small (2/16" long), oval-shaped weevils (order Coleoptera; family Curculionidae) range in color from black to brownish-black to reddish-brown and have deeply grooved wing covers (elytra). Although they are good flyers, the weevils 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.

There is one generation per year; however, adults feed twice during the growing season; in early spring and early summer. Adult feeding damage appears as characteristic half-moon-shaped holes in the foliage. Numerous feeding holes can cause leaves to wilt, turn brown, and die. Overwintered adults feed in the spring and lay eggs in leaf midribs. The resulting larvae feed between the upper and lower leaf surfaces as leafminers either singly or in groups to produce large blotch mines. Although larval leafmines are noticeable, the most serious damage is caused by the adults. Newly emerged adults feed throughout mid-summer and typically cause 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 weevil populations are extremely cyclic with outbreak years followed by several years with almost no weevils observed. Localized populations were observed last year in central, northeast, and western Ohio (BYGL 2013-07 (05/16/13); 2013-14 (07/05/14)). It would appear the central and northeast parts of the state are seeing a repeat performance with much higher populations which may mean numbers will be lower next season.

Author: Joe Boggs

C. SUNFLOWER HEAD-CLIPPING WEEVILS. Damage caused by the native sunflower head-clipping weevil (Haplorrhynchites aeneus) is now appearing on coneflowers in southwest 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 with the measurement including 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 1/2" below the flower head. The flower stem is not completely cut; the damaged stem just breaks-over causing the flower head to hang from 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 late-June to early July. There is one generation per year.

The best method for controlling this weevil is to remove and destroy the dangling flower heads as well as heads that have dropped to the ground. 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. This will reduce the weevil population and thus reduce damage to flower heads. 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."

Author: Joe Boggs

D. ROBBERS ARE ON THE WING. There are over a thousand species of ROBBER FLIES (family Asilidae) in North America representing a wide range of forms and sizes. The largest sized species found in Ohio is the scary-looking (and named!) RED-FOOTED CANNIBALFLY (Promachus rufipes) which can measure over 1 1/4" long. The cannibalfly makes a loud buzzing sound as it flies and alert observers may hear the buzz periodically punctuated by a very loud "snap" which means the fly has committed an insecticidal act!

Cannibalflies have narrow bodies and long, dangling legs. Their stout thorax appears slightly humped when viewed in profile. Each leg is tipped with two formidable tarsal claws that function like grappling hooks. In a smashing display of aerial acrobatics, the fly slams into its airborne quarry which stuns the hapless insect victim. The high-speed collision produces a snapping sound that may be heard several feet away. The fly then grasps its dazed prey with its claws, and uses its piercing-sucking mouthparts to inject saliva containing neurotoxic and proteolytic enzymes. The enzymes paralyze the victim and digest the internal tissues. The fly then lands, and sips the life out of its victim.

Adults of all species of robber flies are predators and they will attack a variety of insects including bees, wasps, grasshoppers, dragonflies, damselflies, and sometimes each other. They often seize prey that are much larger than their own body size. Their larvae are also predaceous and live in the soil, or in decaying wood and other organic matter, where they feed on insect larvae. Thus, both the adults and larvae rob insects of their lives.

Author: Joe Boggs

E. MILKWEED MENAGERIE. A number of plants in the milkweed family (Asclepiadaceae), including COMMON MILKWEED (Asclepias syriaca), have transcended "weed status" in recent years to join the ranks of plant-respectability. They are used in butterfly gardens, landscapes and naturalized areas. Their beautiful forms and flowers are enhanced by their special relationship with the MONARCH BUTTERFLY (Danaus plexippus). However, the monarch caterpillars may be joined by other insect herbivores that also enjoy a "special relationship" with their milky hosts.

Danae Wolfe wowed BYGLers with beautiful images of brightly colored RED MILKWEED BEETLES (Tetraopes tetrophthalmus) that are currently easy to find feasting on milkweed in Ohio. These tubular-shaped 3/8 - 1/2" long beetles are orangish-red with black dots and streaks on their upper thorax and wing covers. A close examination of the milkweed beetles will reveal that their prominent black antennae bisect their compound eyes creating two sets of eyes with one set located above the
antennae and one set below. The genus and specific epithet of the beetle describes this unusual feature; both are derived from the Latin for “four eyes.” The adults feed on milkweed leaves and the larvae bore into the roots and stems.

Like the monarch, red milkweed beetles seek protection from predators by accumulating in their flesh the alkaloid toxins, called cardiac glycosides (cardenolides), which are concentrated in the milkweed’s sap. The same is true for MILKWEED TUSSOCK MOTH (*Euchaetes egle*) caterpillars; LARGE MILKWEED BUGS (*Oncopeltus fasciatus*); and SMALL EASTERN MILKWEED BUGS (*Lygaeus kalmii*). Indeed, over 50 different taxonomic groups of milkweed-herbivorous insects accumulate milkweed toxins. All of these members of the milkweed menagerie advertise their toxic character through splashy coloration, usually involving an orange on black motif; an interesting twist to the old axiom that “you are what you eat.”

*Author: Joe Boggs*

4. DISEASE DIGEST.

A. OAK WILT CONFIRMED IN CWEPPDC. A red oak sample from Lucas County tested positive for oak wilt last week. The suspect trees were flagging with withered leaves. Upon close inspection of leaves that had fallen, the tips had turned brown and it appeared it was working its way towards the petiole end. There were already dead trees in the immediate area of this woods. It was assumed that those trees were killed last season. The trees infected with oak wilt tend to decline very rapidly and can die in the matter of weeks.

This fungus can be spread both above ground/overhead or underground. The overhead spread is by a Nitidulid beetle. This type of spread can be hindered or reduced by not pruning oak trees from spring until fall. The window is a more stringent approach than the April – June dates, but its purpose is the same – to avoid injury which is attractive to beetles in the area. If pruning is absolutely necessary during the growing season, it is imperative to dress the wounds. Although this practice will slow wound healing, it will deter beetles from landing on the wounds and possibly introducing the fungus into the tree.

Management issues are addressed in OSU FactSheet HYG-3306-09, Oak Wilt, and can be found online at [http://ohioline.osu.edu/hyg-fact/3000/pdf/HYG_3306_09.pdf](http://ohioline.osu.edu/hyg-fact/3000/pdf/HYG_3306_09.pdf)

If you suspect oak wilt, it is important to quickly send samples to the clinic for confirmation. Samples should be taken from an area where leaves are changing from green to brown. Sending already dead and bare branches is not recommended.

*Author: Amy Stone*

5. TURF TIPS.

A. FUNGUS THREADING THROUGH TURF. Joe Rimelspach, Turfgrass Pathology Ohio State University Extension Specialist, mentioned to the assembled group of BYGLers that RED THREAD, pathogen *Laetisaria fuciformis*, has not slackened its assault on lawns. Joe held forth on his favorite soapbox of turf diseaseology to try and help the assembled masses understand why this fungal disease continues to hang on! He explained that the red thread fungus thrives when the turf or environmental conditions have exhausted the nitrogen in the soil. With all of the precipitation that has fallen and
everyone is just trying to mow between the downpours, this disease loves those nutrient stressed, lean to non-existent, nitrogen deficient turfgrasses!

Red thread is most commonly found on Kentucky bluegrass, perennial ryegrass, and tall fescue. Outbreaks ordinarily occur in low maintenance stands of turfgrass, like residential lawns. Red thread development is most common where overall turfgrass and soil nutrition is poor and other environmental factors exist to slow turf growth.

The best way to manage red thread is to first do a soil test to confirm or correct any soil factors, like pH, and adjust any nutrient deficiencies other than nitrogen. Once those factors have been amended, the best way to manage the red thread fungus is to apply about 0.25-0.5 pounds of nitrogen to the turf to help it "outgrow" the infected tissue. It is always recommended that when applying nitrogen fertilizers to turfgrass, ensure that at least one-third of the amount of nitrogen is in a slow release form, often termed "water insoluble nitrogen". This will allow the nitrogen to be released over a longer period of time, rather than all at once, which should help the turf combat that aspect of poor nutrition!

Author: Erik Draper

6. SLIP SLIMING AWAY. Small, round, colored pustules are popping up in turf and we call these prolific, protruding pustules SLIME MOLDS. Slime molds become much more visible during periods of warm, wet weather, because the slime molds migrate onto the surfaces of turfgrass leaves. With the warm, wet temperatures these slime molds most often appear as tiny, grey, white, blue or blue-black colored, ball-shaped masses of spores, coating the surfaces of turfgrass leaf blades. Although more abundant in shaded or moist areas, slime molds often appear on slow growing turfgrass with dense thatch. These primitive fungi feed on microorganisms and decaying or dying organic material, but depend upon turfgrass and other weedy grasses for structural support. As the spore masses dry and release the spores, the blades are covered with a dusting of purplish, gray, or white spores causing the blades to look soot-covered. If the infection continues, the turf will become chlorotic and also wilts, mainly due to reduced levels of photosynthesis. Although slime molds are not really a serious threat to turfgrass, infestations can be reduced by improving air circulation and drainage, and consistent, weekly mowings of the turfgrass, will cause the spores to remain contentedly buried down in the thatch.

Author: Erik Draper

6. INDUSTRY INSIGHTS.

A. THOUSAND CANKERS WORKSHOP SUMMARY. Joe Boggs provided a summary of the Thousand Cankers Disease (TCD) Hands-On Workshop he attended last week in Knoxville, TN. The Workshop was planned and offered by an incredible team of University of Tennessee, Department of Entomology and Plant Pathology faculty and staff along with partners from the Tennessee Department of Agriculture (TDA) and the Tennessee Department of Forestry (TDF). There were 25 invited participants from 9 states who attended the Workshop. The training included presentations providing research updates as well as substantive hands-on training with a lab component and field trips to TCD sites.

TCD is a potentially devastating disease of black walnut (Juglans nigra); it was confirmed last year in Butler County, OH. The fungus responsible for the disease (Geosmithia morbida) is carried from tree to tree by the phloem-feeding bark beetle, Plyphthorus juglandis, with the common name WALNUT TWIG BEETLE. The beetle has no specialized structures to carry the fungus; sticky spores simply adhere to the beetle.
The disease is so-named because of the collective impact of thousands of relatively small (approx. 1" long) elongate, dark colored cankers that develop in the phloem tissue: "death by a thousand cuts" becomes death by a thousand cankers. Both the beetle and the fungus naturally exist in the western U.S. and Mexico where both are found on walnuts native to western regions. These include northern California walnut (J. hindsii), southern California walnut (J. californica), and Arizona walnut (J. major). However, the beetle / fungus have limited impacts on these co-evolutionary hosts. A potential for destruction was first reported when non-native black walnuts planted in northern New Mexico began dying in 2001 and the disease was fully described and named later in that decade when large numbers of black walnuts began dying in Colorado.

TCD was first identified in the Knoxville area in 2010. It was the first time the disease had been found east of the Mississippi and the first time the disease had been found within the native range of black walnut. The UT TCD team was created and rapidly responded to the situation in Knoxville and is now leading the way in furthering our understanding of TCD including research on both the pathological as well as entomological aspects of TCD.

Here are a few highlights from the Workshop:

* TCD was discovered in Tennessee after a number of years of record-setting or near record-setting droughts. As with Colorado, it was first thought that dying walnuts were being killed by drought. Based on the heavy loss of black walnuts in Colorado and elsewhere in the west, it was predicted that TCD would spell the demise of black walnut in Tennessee. Indeed, many trees succumbed. However, last season and thus far this season, walnuts that are known to be infested / infected are showing a marked decline in overall symptoms (e.g. foliar wilt, branch dieback, etc.) with trees appearing healthy. Also, the number of beetles caught in traps located near these trees has declined from hundreds per trap per week to as little as 10 - 12. The mechanism(s) responsible for this reprieve are not yet known, but it is speculated that drought played a significant role in the original impact of TCD on the native black walnuts. The turn-around in Tennessee compared to Colorado where there has been no such halt in tree mortality may be connected to black walnuts growing in their native habitat; they may have a greater potential to overcome the death-dealing impact. However, without a clear cause-and-effect, there can be no recommendations providing research-based management of TCD.

* Significant progress has been made in understanding the fungus including the development of better methods to isolate and identify Geosmithia morbida. This is an important step in confirming the existence of the fungus and thus the occurrence of TCD. Originally, isolation efforts focused on traditional "direct plating" meaning bits of cankers were placed on potato dextrose agar (PDA = fungal food) in petri dishes to support fungal growth and identification. Geosmithia produces characteristic "lobed" colonies. Unfortunately, the plates often become overrun by more aggressive fungi including Fusarium spp. and Aspergillus spp. Recent research has shown that the "moist chamber" method is more effective. This involves simply placing canker bits on moist paper in a petri dish. Evaluations have shown a 45% success rate in isolating and identifying the fungus using the moist chamber method compared a success rate of just a 5% using direct plating.

* Research being conducted by Denita Hadziabdic may offer an even more effective method for quickly identifying the fungus. Her intriguing work has focused on evaluating the genetic composition of Geosmithia morbida populations. Her published findings have shown that the Knoxville infections are
distinct from the nearby North Carolina (Smokies) infection indicating the two locations with TCD had
different origins. A side benefit of her fungal genetic work has been the discovery of a molecular
indicator that is so distinct; it may be used to identify the presence of *Geosmithia morbida* in direct
plated colonies totally overrun by other fungi. This could revolutionize the ability to rapidly provide a
positive identification of TCD.

*Author: Joe Boggs*

B. DON'T OVERLOOK SOIL TESTING AS A VALUABLE DIAGNOSTIC TOOL. Recent heavy rains
and current diagnostic issues prompted a BYGL discussion concerning soil testing as a diagnostic tool.
Although "Don't Guess - Soil Test" was discussed in the April 24 issue of BYGL, recent changes in your
landscape or concern over the failing health or vigor of a tree, lawn or group of plants may signal a
need for evaluating your soil NOW. Soil testing results may help you save a tree that is suffering from
nutrient deficiencies or at least rule this out as a possible cause.

There are 5 reasons for soil testing according to Michigan State University's Smart Gardening Fact
Sheet - Don't Guess - Soil Test!

*Know your soil.* Soil testing is an important diagnostic tool to evaluate nutrient imbalances
and understand plant growth.
*Understand.* The most important reason to soil test is to have a basis for intelligent application
of fertilizer and lime.
*pH.* Testing allows homeowners to adjust soil pH to the optimum range (6.0-7.0), which makes
nutrients more available for plant growth.
*Protection of our environment.* Avoid contaminants that can enter our surface and ground
waters by over-application of phosphorous or nitrogen fertilizers.
*Cost savings.* Why apply what you don't need? Soil test results provide information about the
soil's ability to supply nutrients to plants for adequate growth and are the basis of deciding how much
lime and fertilizer are needed.

Soil test results are only as good as the sample. Take time to provide a soil sample representative of
the entire area you are testing by taking 10 to 15 cores or slices randomly distributed throughout the
area. Each sample should be taken at the same depth. Dry the samples and mix in a plastic container.
A portion of this dried mixture should be sent to the lab.

The depth of your soil sample will vary by the area you are testing. Soil testing samples for a lawn
should be 3-4" deep; while samples for gardens, trees, and shrubs should be 6-8" deep.

Test results should be carefully reviewed. Enlist the help of the testing laboratory, your local Extension
office and other professionals to use this information to make cost effective and environmentally
responsible fertilization and diagnostic decisions. An online resource such as www.msusoiltest.com
allows you to enter soil test information from any lab and to choose the crop type you want and they
provide a custom fertilizer recommendation.

Soil testing is one tool in your diagnostic toolkit that should not be overlooked or underestimated to help
manage plant health.

*Author: Denise M. Johnson*
7. WEATHERWATCH.

A. WEATHER UPDATE. The following weather information summarizes data collected at various Ohio Agricultural Research Development Center (OARDC) Weather Stations spanning the dates from June 1-30, 2014, with the exception of the soil temperatures which are readings from Wednesday, July 2, 2014 at 5:30 p.m.

Precipitation amounts for the month, in four of the five stations, were above normal for the month of June. Pam Bennett reported that Springfield received 5” of rain for the month of June, about a 1/2” of above normal for the month. Last week during the BYGL conference call (June 24, 2014), Jim Chatfield had reported that the Chatscape had already received 10” of rain since the beginning on June. While not as wet as many other locations across the buckeye state, the Toledo area has finally begun receiving rain in recent days according to Amy Stone, just a little different than most other locations.

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<td>NE</td>
<td>80.7</td>
<td>59.0</td>
<td>5.71</td>
<td>3.9</td>
<td>76.47/75.69</td>
</tr>
<tr>
<td>Hoytville</td>
<td>NW</td>
<td>82.6</td>
<td>61.4</td>
<td>4.16</td>
<td>3.6</td>
<td>76.56/72.76</td>
</tr>
<tr>
<td>Columbus</td>
<td>Central</td>
<td>82.7</td>
<td>62.7</td>
<td>6.87</td>
<td>4.5</td>
<td>76.54/76.54</td>
</tr>
<tr>
<td>Piketon</td>
<td>South</td>
<td>83.0</td>
<td>60.6</td>
<td>3.97</td>
<td>3.9</td>
<td>78.65/77.25</td>
</tr>
</tbody>
</table>

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

Author: Amy Stone

8. COMING ATTRACTIONS.

A. NW OHIO GREEN INDUSTRY SUMMER SESSION. Don't miss this year’s NW Ohio Green Industry Summer Session. The program will be held on Wednesday, August 6, 2014 at Owens Community College. The program will include a keynote address by Matt Ross. Matt previously worked for The Toledo Botanical Garden and Owens Community College, and is currently working at Longwood Garden in Pennsylvania. It will be great to have Matt back in NW Ohio for this program. Additionally, there will be 12 concurrent sessions that participants can choose from throughout the afternoon from the plant track, best practices track/diagnostic track, and pest track, and will include credits from both ODA and ISA. Registration will go live next week.

B. PESTICIDE SAFETY TRAINING - New Commercial Applicators and Training Servicepersons, August 27, 2014. Core and Trained Serviceperson trainings are held in the morning, and Categories 8, 5, 2c, and 6c in the afternoon. The session will be held at the ODA in Reynoldsburg, Ohio. For more information about the event, check out the PestED website at [http://pested.osu.edu].

C. PESTICIDE SAFETY TRAINING - New Commercial Applicators and Training Servicepersons, September 24, 2014. Core and Trained Serviceperson trainings are held in the morning, and Categories 8, 5, 2c, and 6c in the afternoon. The session will be held at the ODA in Reynoldsburg, Ohio. For more information about the event, check out the PestED website at [http://pusted.osu.edu].
D. WOOD-DESTROYING INSECT INSPECTION TRAINING, October 8, 2014. Mandatory training is required for applicators becoming licensed in commercial Category 12. Recertification credit is available. The session will be held at the ODA in Reynoldsburg, Ohio. For more information about this event, check out the PestED website at [http://peed.osu.edu].

9. BYGLOSOPHY - Freedom has its life in the hearts, the actions, the spirit of men and so it must be daily earned and refreshed - else like a flower cut from its life-giving roots, it will wither and die. ~Dwight D. Eisenhower

APPENDIX
ADDITIONAL WEBSITE RESOURCES:

Ask a Master Gardener Volunteer
http://mastergardener.osu.edu/ask

Buckeye Turf
http://buckeyeturf.osu.edu

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

National Plant Diagnostic Network and First Detector Program
https://www.npdn.org/first_detector

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

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

Ohio Pesticide Safety Education Program
http://peed.osu.edu/

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

Ohio State University Extension Bee Lab
http://u.osu.edu/eeelab/

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

Ohio Woodland Stewards Program
http://woodlandstewards.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 1st conference call: Pam Bennett (Clark); Joe Boggs (Hamilton); Julie Crook (Hamilton); Erik Draper (Geauga); Denise Johnson (Master Gardener Volunteer Program); Cindy Meyer (Butler); Joe Rimelspach (Department of Plant Pathology); Amy Stone (Lucas); Nancy Taylor (C. Wayne Ellett Plant and Pest Diagnostic Clinic (CWEPPDC)); Marne Titchenell (SENR); Danae Wolfe (Summit); and Randy Zondag (Lake).

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

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

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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.