BYGL Newsletter

May 9, 2013
This is the 6th 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.

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Plants of The Week

*Annual - Stocks (Matthiola incana)

This is considered an "old-fashioned" spring garden plant that has been around for many years and doesn't enjoy the popularity that pansies garner. However, Pam Bennett encourages gardeners to use these plants in the early spring like you would a pansy or snapdragon as they thrive in cooler temperatures. The blooms are long-lasting and make a great cut flower and with a wonderful fragrance. Pam planted stocks in containers near the front door and enjoys the spicy, sweet clove scent every evening when the door is opened and the wind gently wafts the fragrance through the house. Their fragrance makes them a very unusual member of the mustard family as most plants in this family don't have a great smell.

There are newer cultivars on the market that have bigger flowers than that older ones. Dwarf cultivars grow around 1’ tall and taller varieties can get around 2’ tall. Flowers appear on the top of the stem and last until temperatures warm up in the summer. Colors include white, purple, lavender, maroon, pink, crimson, and creamy yellow. Plant this annual in full sun in flower beds and containers. Stocks tolerate a light frost but must be protected from a freeze. Another great feature is that deer rarely graze on them! Give them a try for something different in the early spring.

For More Information:
Missouri Botanical Garden information on M. incana
University of Vermont information on M. incana
http://pss.uvm.edu/pss123/fcmatt.html

*Perennial - Creeping Phlox (Phlox subulata)

When this plant is in bloom in landscapes and gardens, it sells like hotcakes! Garden centers quickly run out of stock in the spring when it's blooming but after that, well, it's not the easiest plant to sell. People can't help but notice this in gardens and landscapes when masses of colorful blooms cover the ground. Blooming right now in central Ohio, this plant's lovely purple, white, pink or maroon flowers provide an outstanding traffic-stopping carpet of color. Be sure to get a close-up view of the flower as well because depending upon the cultivar, there are various little nuances that make them even more stunning. The individual flower petals are distinctly notched and sometimes have a dot or different color at the base.

Creeping phlox grows to around 4 - 6" tall and about 2' wide. It makes an excellent ground cover, border, rock garden or accent plant. Plant creeping phlox in full sun or partial shade and in well-drained soil as it does not like wet soil. Creeping phlox tolerates hot dry summers, and it also tolerates deer feeding. It will spread and last a long time in your garden. After it finishes blooming, shear the dead flowers and a little of the foliage to encourage branching and new, denser growth. This tends to rejuvenate the foliage and the plant will look pretty decent as a ground cover during the summer months. It also
has a tendency to be semi-evergreen in the winter months.

For More Information:
Ohio State University information on P. subulata
http://hvp.osu.edu/pocketgardener/source/description/ph_ulata.html
Missouri Botanical Garden information on P. subulata

*Woody - Crabapple (Malus taxa)

Yes, we know that crabapples were featured only last week with a report of bloom timing in Crablandia. But more is in order in this most wondrous year of the ornamental *Malus*. The Crablandia research plots at the Secrest Arboretum of OSU's Ohio Agricultural Research and Development Center in Wooster were in full glory this past weekend, with all but the latest-blooming six crabapples in various stages of bloom. Crabapples are versatile with variation in form (weepers, spreading weepers, upright, spreading-upright), bud and flower color combinations from deep coral pink and soft purples to snow white, and later in the season fruit colors from lemon-yellow to deep-purple. Plant in full sun, at least moderately good drainage, and choose cultivars with good apple scab resistance, from the upright white-flowering 'Adirondack' to the pink weeper 'Louisa', from dwarf and semi-dwarf crabapples in the Round Table Series to the dwarf-dwarf Sargent 'Tina'. Come to Secrest for the International Ornamental Crabapple Society Crablandia plot and the older crabapples along the arboretum road, including 'Rousseau' a massive specimen planted in 1951.

*Vegetable - Spinach (Spinacia oleracea)

Spinach is an easy-to-grow and nutritious crop that can be among the first greens to be harvested in the growing season. Spinach is frost tolerant and grows best in the cool weather of the early spring and in the fall. Directly sow seeds as soon as you can work the soil in the spring. Sow the seeds 0.5" deep, 1" apart in rows 12 - 18" apart. Rather than make one large planting, it is best to make succession plantings every week or two until the average last frost date. You can sow seed again in mid- to late summer for a fall harvest.

Spinach grows best in well-drained, fertile soil high in organic matter and requires consistent moisture. If it becomes too dry it will go to seed (bolt). Heat and lengthening days also encourage bolting. To maintain moisture and to help suppress weeds, mulch after plants are well established. The plants may be harvested whenever the leaves are large enough to use (a rosette of at least 5 - 6 leaves). Cut the plant at or just below the soil surface. Spinach is of best quality if cut while young.

For More Information:
Cornell University Vegetable Growing Guide
http://www.gardening.cornell.edu/homegardening/scene4c19.html
University of Illinois Extension Watch Your Garden Grow
http://urbanext.illinois.edu/veggies/spinach.cfm

*Weed - Ground Ivy (Glechoma hederacea)

Ground ivy is a perennial plant that is found commonly in lawns, as well as woodlands and grasslands. This plant is commonly referred to as CREEPING CHARLIE and is often confused with common mallow.

Ground ivy has opposite and roundish leaves with rounded edges. The plants are square stemmed and creeping at the base. Flowers of this plant can be blue to violet in color and grow in clusters.
The flowers are funnel-shaped and are located at the leaf axis or near the tip of the stem. Ground ivy spreads by stolons and by seed. It is found in much of the United States.

The control of ground ivy in lawns can be difficult. In lighter infested areas the use of a proper broadleaf herbicide could be used to control patches of ground ivy. When using any herbicide read and follow label instructions carefully.

Ground ivy infested areas that contain very little grass should be cleared with a non-selective herbicide (e.g. glyphosate) and the turfgrass re-established. Once the ground ivy has been effectively controlled and a healthy lawn re-established, the home gardener needs to use good mowing, fertilization, and watering practices to maintain a dense, healthy, stand of turfgrass. Improving the health of your lawn will help discourage future invasions of this aggressive weed.

For More Information:
OARDC Weed Guide
http://www.oardc.ohio-state.edu/weedguide/singlerecord.asp

Hort Shorts

Growing Strawberries in the Home Garden

Gary Gao reported that strawberry plants were in full bloom during the second week of May in Central Ohio. Strawberries, like many berries, are very high in antioxidants and vitamins. Strawberry growing in the home gardens can be a very rewarding experience.

There are three main types of strawberries, June-bearing, ever-bearing, and day-neutral, respectively. June-bearing strawberries are the predominant type in Ohio. Their berries mature mostly in June, hence the name, June-bearing. Ever-bearing strawberries produce 2 - 3 crops a year while day-neutral may flower and fruit throughout the season. Most nurseries lump ever-bearing and day neutral types together. June-bearing types are most productive in Ohio while other two types are much less productive.

Typically, two dozen plants are a good start for a family of 3 - 4 people. Most of the plants should be of June-bearing type, with some ever-bearing and some day-neutral. Common June-bearing cultivars are 'Earliglow,' 'Annapolis,' 'Honeoye,' 'Allstar,' 'Lateglow,' and 'Ovation.' Common cultivars of day neutral types are 'Albion,' 'Tristar,' and 'Tribute' while 'Ozark Beauty' and 'Quinault' are two common cultivars of ever-bearing type.

May is the best time to plant strawberries. Strawberry plants should be planted in raised beds. When planting strawberries, only bury half of the crown, which is the short stem between roots and leaf stems. Please refer to OSU Extension strawberry fact sheet at http://ohioline.osu.edu/hyg-fact/1000/1424.html and OSU Extension Bulletin 949, "Midwest Home Fruit Production Guide," for more information.

For More Information:
OSU Extension Strawberry Fact Sheet
http://ohioline.osu.edu/hyg-fact/1000/1424.html
Purdue Extension Fact Sheet

Rarely Seen by the Uninitiated

Spring sensations continue with plant features you will surely miss if you turn your head away from what is unfolding. Enjoy the pillared cones of male sweetgum (Liquidambar styraciflua) flowers with the dangling female flowers and then fruits below, complete with newly emerging star-shaped leaves. Note the miniature tulip-shaped flowers of tuliptree (a.k.a. tulip-poplar, yellow-poplar) (Liriodendron tulipifera) just as they come out of the buds, the tiny bass viol raintree leaves of yellow and brown, and look upward at the other angels of the Aesculus genus, as horsechestnut leaves stand out against the blueing sky.
April through May is the time of year when female COYOTES reluctantly enter underground dens to birth their pups. With their incredibly heightened senses of hearing and smell, confinement in a small underground den limits these senses making coyotes even more nervous than normal. However, the female recognizes underground dens are a safe and protective place for her pups; therefore, she reluctantly makes the necessary descent underground. Coyote dens are often in concealed areas such as the woods or excavated into a hill slope with overhanging vegetation.

A coyote pack is very dedicated to the survival of the current year’s pups and will defend the area around the den against threats. What kind of threats? To a coyote defending pups, a threat may be a curious dog out for a stroll in the park or perhaps a hiker spending a warm spring day in the woods. It's no coincidence that this is also the time of year when the highest amount of conflict between coyotes and medium to large sized dogs occurs. During times of the year other than the pup birthing season, medium to large sized dogs are usually emit enough of a presence to deter a coyote. However, coyotes are much more defensive this time of year in order to protect their pups from harm. A dog or human that accidentally wanders too close to a coyote den may encounter a parent coyote that is much less likely to be scared off and will often hold their ground. If such a coyote is encountered, back away slowly and try to avoid the area for the next few months. By July and August, the pups should be out and about and able to move on their own, and the parents a little less defensive.

While medium to large sized dogs can typically hold their own when it comes to coyotes, the same isn’t true of cats and small dogs. Cat owners should think twice about letting cats roam outside, especially at night, if coyotes are known to be in the area. Small dog owners should always keep an eye on their pets when walking them at any time of day. At night, small dogs should be kept on a short leash when walking. If a coyote is encountered, pick up the small dog and harass the coyote until it moves away. Harassing is yelling at the coyote, waving your arm (the one NOT holding the dog), or throwing something in the general direction of the coyote (not directly AT the coyote). The coyote should respond to this harassment by running away. If it does not, or proceeds to follow you, return home or to the nearest building and try to note any distinguishing characteristics of the coyote. Aggressive or fearless coyotes should be reported to a nuisance wildlife control operator or company for removal. Several OSU Extension FactSheets on coyote conflict and damage management can be found at http://woodlandstewards.osu.edu for more information.

For More Information:
Urban Coyote Ecology and Management Website
http://www.urbancoyoteresearch.com/index.htm

Yellow-Bellied Sapsucker Damage

Marne Titchenell has received several reports of yellow-bellied sapsucker damage to landscape trees. For those of you unfamiliar with sapsucker damage, it typically appears as a neat horizontal row of tiny holes along the trunk of a tree. This is the result of the sapsucker pecking into the bark (it is a woodpecker) to reach the tree sap, which it laps up. While a sapsucker, true to its name, does drink sap; however, it does not, untrue to its name, suck it up. A sapsucker’s tongue is tipped in tiny bristles, much like a paint brush - all the better to soak up the sap. Perhaps it should be called the 'sapsoaker' instead!

Unfortunately, it can sometimes be a challenge to deter sapsucker feeding and the subsequent damage they can cause to trees. Some homeowners can successfully deter sapsuckers by hanging shiny reflective material, such as mylar tape or old CDs around the tree. This isn't guaranteed to work and may cause the woodpeckers to turn to the next available tree. Other management options include wrapping the area of the tree where damage has occurred with hardware cloth or burlap to prevent the woodpeckers from reaching the bark. Tactile repellents can be smeared on the bark to deter feeding. Perhaps the best news is that most of the time trees are able to withstand the occasional sapsucker feeding. However, sometimes sapsuckers will feed repeatedly on the same tree year after year, creating larger holes to get at the sap, which can lead to long term damage.
The yellow-bellied sapsucker is only seen in Ohio during migration season, which is good news for those suffering from tons-of-holes-in-your-trees syndrome. By this time last year, the majority of yellow-bellied sapsuckers had progressed north and out of Ohio. Given the slow start to spring this year (or at least the normal start compared to last spring), sapsuckers may be around a little while longer. Currently, they are still being seen around the state, but as May continues on, expect sapsuckers and their feeding damage to decline.

**Bug Bytes »**

Joe Boggs reported that the unusual leaf damage caused by the **SPINY WITCHHazel Gall APHID** (*Hamamelis spinosus*) is now appearing on river birch in southwest Ohio. The aphid produces raised ribs or "corrugations" on the upper leaf surface that match deep furrows between the veins on the lower leaf surface where the aphids live. The aphid has a complex life cycle that involves two hosts: witchhazel (*Hamamelis* spp.) and birch (*Betula* spp.). Winter is spent either as eggs on witchhazel bark or as immature female aphids under birch bark.

The aphid is sometimes called the "river birch aphid" owing to its affinity for *E. nigra*. On birch, the females move to newly expanding leaves in the spring where they feed, mature, and give birth to a new crop of aphids. Aphid numbers expand quickly with each succeeding generation contributing to an ever-expanding aphid population. The feeding damage on birch causes the expanding leaves to pucker and bulge length-wise producing the characteristic leaf corrugations. The aphids cover themselves in a waxy, white, flocculent material and live on the underside of the leaves within the corrugations. The affected leaves will usually turn yellow and may prematurely fall off the tree.

Eventually, the aphids on birch produce winged females that fly to witchhazel. They lay eggs on the bark that will hatch into "stem mothers" the following spring. The stem mothers feed on newly expanding buds and inject chemicals that cause the buds to form a hollow, spiny, globular gall around their progeny. The winged aphids arising from the witchhazel galls fly back to birch.

Damage to both plant hosts is usually not severe enough to warrant treatment, particularly on witchhazel where the galls have little impact on plant health. Frequently, numerous predators will destroy aphid populations on the birch leaves. However, if heavy infestations on birch occur on highly visible plants, aphid populations can be reduced with a fall soil drench application of imidacloprid, or a spring topical application of acephate or insecticidal soap.

For More Information:

Clemson University Fact Sheet

[http://www.clemson.edu/cafls/departments/esps/factsheets/turforn/river_birch_aphid_to17.html](http://www.clemson.edu/cafls/departments/esps/factsheets/turforn/river_birch_aphid_to17.html)

**Roselugged Leaves**

Joe also reported that the distinctive "windowpane effect" caused by the feeding activity of various members of the "roseshag sawfly complex" is just becoming evident on rose leaves in southwest Ohio. The possible culprits include the **BRISTLY ROSESLAG SAWFLY** (*Cladius difformis*), the **ROSESLAG SAWFLY** (*Endelomyia aethiops*), and the **CURLED ROSE SAWFLY** (*Allantus cinctus*).

Early instar larvae of these sawflies feed as leaf skeletonizers on the lower or upper leaf surfaces, depending upon the species. The corresponding epidermis on the opposite side of leaf remains intact and eventually turns white producing the "windowpane" symptom. Later instars feed between the main veins producing "see-through" leaves. The bristly roseslug is a "season-long" pest with as many as six generations occurring in Ohio. The curled rose sawfly has two generations per season, and the roseslug only one generation.

Control and prevention of damage depends on a proper identification of which roseslag culprit is responsible for causing the damage. Only the bristly roseslug continues to produce damage throughout the season. As their common name implies, the semi-transparent pale-green larvae are covered with short bristles; however, the bristles are difficult to detect without

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For More Information:

Clemson University Fact Sheet

[http://www.clemson.edu/cafls/departments/esps/factsheets/turforn/river_birch_aphid_to17.html](http://www.clemson.edu/cafls/departments/esps/factsheets/turforn/river_birch_aphid_to17.html)
magnification. Damage by this sawfly can be prevented by making a soil drench application of imidacloprid (e.g. Merit) or dinotefuran (e.g. Safari) at the time leaf buds start to break. However, it is not too late to reduce the season-long impact of this multiple generation pest. An application made now will help stem the tide of damage caused by successive generations of this rose pest.

For More Information:
University of Illinois, Home Yard and Garden Pest Fact Sheet
http://hyg.ipm.illinois.edu/article.php

Fourlined Plant Bugs

Early damage on annuals and herbaceous perennials caused fourlined plant bug (Poecilocapsus lineatus) nymphs is just starting to appear in southwest Ohio. This sucking insect feeds on over 250 herbaceous plant species including some woody ornamentals. The quick-moving nymphs are reddish-orange with black wing-pads. The appropriately named adults vary from yellow to green in color and have four black stripes down the wings.

Like many plant-feeding Hemipterans, the fourlined plant bug injects enzymes into the plant causing cells to collapse. The bugs then feed on the resulting "slurry." The damage appears as small, round, black sunken spots which may coalesce into extensive blackened areas on infested leaves. The symptoms are commonly mistaken for a plant leaf disease.

The plant bug has only one generation per year. However, both the adults and nymphs are heavy feeders and high populations can produce significant plant injury. Targeting the early instar nymphs for control reduces the overall damage caused by this insect, thus control measures need to be applied now to prevent much of the damage that will occur for the season.

For More Information:
University of Minnesota Entomology Yard and Garden Brief
http://www.extension.umn.edu/yardandgarden/ygbriefs/e121plantbugs-fourlined.html

Factsheet Revised

OSU Entomologists Susan Jones, Barbara Bloetscher, and Devon Rogers have recently revised OSU FactSheet, HYG-2121-12, "Submitting Insect Specimens for Identification." The FactSheet can be found online at http://ohioline.osu.edu/hyg-fact/2000/pdf/2121.pdf . This is a great resource to review before submitting samples to the C. Wayne Ellett Plant and Pest Diagnostic Clinic (CWEPPDC).

For More Information:
OSU Extension FactSheet

Windshield Wipes

BYGLers also ran into a number of other insect pests this week including:

Pam Bennett reported that EASTERN TENT CATERPILLAR (Malacosoma americanum) nests are rapidly expanding in southwest Ohio. Many of the nests are about soft-ball sized. Caterpillars begin to construct their characteristic silk nests in the forks of branches. The caterpillars hide in the nests during the day and leave the nests to feed on leaves at night. The caterpillars prefer to feed on trees in the family Rosaceae, particularly those in the genus Prunus, such as cherries. They also occasionally feed on ash, birch, maple, and oaks. Caterpillars can be managed using a number of insecticides labeled for use on the host tree, or by physically removing the nests and doing the "caterpillar stomp dance." Thus far, no eastern tent caterpillars have become resistant to the second management method.

In a late-breaking report, Joe Boggs noted that first generation PINE NEEDLE SCALE (Chionaspis pinifoliae) crawlers are now appearing on conifer hosts in southern Ohio. The tiny, mobile, rusty-red crawlers can be detected with a hand lens. Crawler populations can be reduced using a contact insecticide including soaps, oils, or standard insecticides labeled for use on the infested conifer species. Infested trees should be closely
Yield 2,4-D Selective Weed Killer) or 2,4-D as part of a mixture of active ingredients. Examples of herbicide mixtures One can purchase products that only contain 2,4-D as a single active ingredient (e.g. Amine 400 2,4-D Weed Killer and Hi-Corporation. Scotts Company, Lesco, Hi-Yield (Voluntary Purchasing Groups, Inc.), and Chemsico, Division of United Industries companies (this is not a complete listing) providing products containing 2,4-D include PBI/Gordon Corporation, Bayer, The weeds. The products come in both granular and liquid, concentrate or ready-to-use (RTU), formulations. A few of the Digging Deeper - Where Can I Get 2,4-D to Treat my Dandelions? will eventually disappear on their own allowing Ohio lawns to return to an aesthetically appealing uniformly green carpet. Frequent mowing will not prevent seedhead development; however, infrequent mowing will allow seedheads to fully develop with the seedheads rising to their full glory to tower above the turf plants. Thankfully, the unsightly seedheads and stalks will eventually disappear on their own allowing Ohio lawns to return to an aesthetically appealing uniformly green carpet.

EUONYMUS SCALE (Unaspis euonymi) egg-hatch occurs at a GDD accumulation of 406, so landscapers and nursery growers in southern Ohio should be on the lookout for first generation EUONYMUS SCALE (Unaspis euonymi) nymphs (crawlers) appearing on their namesake host. The crawlers of this armored scale appear as tiny tanish-yellow flecks on upper and lower leaf surfaces and can be easily seen with a 10X hand lens. This is the developmental stage that is most susceptible to topical, contact insecticides. This scale can also be suppressed using dinotefuran (e.g. Safari) which is a systemic insecticide. Systemic insecticides have a lower impact on beneficial insects such as the very tiny lady beetles in the genus Sethorus that are commonly observed lurking among the scale, like wolves among sheep.

Curtis Young also reported that overwintered basswood leafminers (Edessa rubescens) are actively feeding on newly expanding foliage of AMERICAN BASSWOOD or LINDENS (Tilia americana). The feeding is not much more than a few holes in the leaves at this point, but it is an indicator that the leaf-mining phase of the life cycle of this insect is soon to start. Neither the early-season adult feeding nor the leaf-mining activity of the larval stages is all that significant. However, the new adults that will emerge later this season will cause extreme defoliation causing lindens to turn prematurely brown and in a number of cases, to prematurely drop their leaves. The cycle has begun.

Curtis Young also reported that EUROPEAN ELM FLEA WEEVIL (Orchestes alni) is attacking numerous elm species and hybrids in northwest Ohio. Some trees are already showing heavy damage from the overwintered adults and additional damage from the adult females laying eggs into mid-rib veins and major lateral veins of the leaves. The leaves are becoming distorted in their growth patterns as a result of the egg-laying activity. Since the leaves are in the process of expanding, the wounds produced by the females laying their eggs into the veins are interrupting growth at those points. As a result, leaves are being stunted in their growth, curling downwards and sections of the leaves are no longer expanding. Curtis examined multiple leaves from several different hosts and saw similar injury on all of them. Many leaves had 3 - 5 eggs laid in the mid-rib vein and 1 - 2 eggs in several lateral veins. A few of the eggs have already hatched and young larvae are tunneling through the leaf tissue toward the margins of the leaves. It would appear that elms, especially Siberian elms (Ulmus pumila) are going to look terrible in northwest Ohio due to the activity of the elm flea weevil.

Joe Boggs reported that seedheads are rising above TURF-TYPE TALL FESCUE (Festuca arundinacea) lawns in southern Ohio. This is a natural event at this time of the year and it can also occur with other turfgrasses used in home lawns including KENTUCKY BLUEGRASS (Poa pratensis). Unfortunately, an abundance of seedheads can make a lawn look very unattractive and the physiological effects on turf plants may temporarily reduce overall turf quality. Seedhead production saps energy from the plant and may cause turf blades to become sparse and off-colored. The seed stalks have fewer leaf blades and their woody structure resists mowing which adds to the eyesore. Seedhead production is seldom consistent throughout a home lawn and it sometimes occurs in patches. Thus, the problem is often made more obvious by patches of seedheads occurring in an otherwise smooth, dark-green lawn.

Turfgrass seedheads usually begin to form below the recommended mowing height of 2.5 - 3" for home lawns, thus the seedheads will still develop despite frequent mowing. However, turf managers should not lower the mowing height in an attempt to remove all of the seedheads. Seedheads are a short-lived aesthetic problem; thus, they do not cause long-term damage to turf plants. However, the stress produced by mowing turfgrass too short can cause long-term injury to turf plants.

Frequent mowing will not prevent seedhead development; however, infrequent mowing will allow seedheads to fully develop with the seedheads rising to their full glory to tower above the turf plants. Thankfully, the unsightly seedheads and stalks will eventually disappear on their own allowing Ohio lawns to return to an aesthetically appealing uniformly green carpet.

Digging Deeper - Where Can I Get 2,4-D to Treat my Dandelions? 2,4-D is found in a number of products for treating lawns to manage dandelions and numerous other emerged broadleaf weeds. The products come in both granular and liquid, concentrate or ready-to-use (RTU), formulations. A few of the companies (this is not a complete listing) providing products containing 2,4-D include PBI/Gordon Corporation, Bayer, The Scotts Company, Lesco, Hi-Yield (Voluntary Purchasing Groups, Inc.), and Chemsico, Division of United Industries Corporation.

One can purchase products that only contain 2,4-D as a single active ingredient (e.g. Amine 400 2,4-D Weed Killer and Hi-Yield 2,4-D Selective Weed Killer) or 2,4-D as part of a mixture of active ingredients. Examples of herbicide mixtures
including 2,4-D are Trimec (MCPP-p, 2,4-D, Dicamba) and Trimec-like products (e.g. Trimec Lawn Weed Killer, Trimec Ready Spray Lawn Weed Killer, Spectracide Weed Stop for Lawns Concentrate Ready-to-Spray, and Ortho Weed-B-Gon MAX Weed Killer for Lawns) and products targeting broadleaf weeds in combination with crabgrass (Quinclorac, 2,4-D, Dicamba) (e.g. Bayer Advanced All-In-One Lawn Weed & Crabgrass Killer and Ortho Weed-B-Gon MAX plus Crabgrass Killer for Lawns). Weed and feed dry granular products may also have 2,4-D as one of their active ingredients (e.g. Scotts Turf Builder Fertilizer with Plus 2 Weed Control).

2,4-D comes in two major forms, amine salts and esters. A major difference between these two forms of 2,4-D is their potential to "volatilize" or vaporize and move off target. Esters vaporize more easily than the amine salts. Volatilization of 2,4-D increases as heat and dryness increases and with the typical wide swings in environmental conditions during the spring, temperatures can change rapidly from the time a product is applied to when temperatures peak on any given day.

Wind speeds can also change very rapidly during the spring. Sudden gusts and increases in wind speeds may lead to drift of products onto sensitive plants. Precautions should be taken to avoid movement of herbicides onto non-target plants.

Choose the safest formulation for the job at hand. Liquid sprays have a greater potential to be blown off target than granular formulations. Understand the potential causes of drift including wind speed, droplet size, nozzle types, pressure of the application system and height of boom from surface of vegetation. Homeowner sprayers may not have the ability to be adjusted easily, if adjustments can be made at all, for spray tip and/or boom height, droplet size and/or pressure in the sprayer.

Check your sprayer system for potential drift problems. Fill the system with plain water and run the equipment to observe the spray as it leaves the nozzles. Does the sprayer produce extremely fine droplets that float in the air? If it does, there is a great potential for drift. Does the sprayer produce an even distribution across all of the nozzles? If not, the nozzles may need cleaned or replaced.

Watch your weather forecasts before choosing your 2,4-D formulation. Monitor wind speed while applying. Adjust applicator or sprayer as much as possible to decrease the chance of a misapplication. If no adjustments can be made, choose a granular formulation instead of a liquid.

For More Information:
Purdue University FactSheet on 2,4-D Amine vs Ester

Industry Insight

Invasive Pest Found in Summit County

Last week, two volunteers (one of who is an OSU Extension Master Gardener Volunteer and both of who are currently in the OSU Ohio Certified Volunteer Naturalist program) discovered HEMLOCK WOOLLY ADELGID (HWA) on a landscape tree in a Metropark, serving Summit County. The two volunteers were mulching around the tree when the pest was discovered. Photos were taken and emailed to Summit County Extension Educator, Danae Wolfe, who collected and mailed a sample of the infested tree to the Ohio Department of Agriculture (ODA). ODA confirmed this week that the pest is indeed HWA.

Danae is communicating management options to the staff of the Metropark. It is not yet clear how the infestation will be treated but it will likely involve cutting and burning the tree or chemical control. Fortunately, of the handful of hemlock trees in the area, only one seemed to be affected.

HWA affects its host by using its piercing-sucking mouthparts to remove sap from twigs, which can eventually lead to tree fatality, especially in cases where the infested tree is already stressed. It is easiest to identify HWA in spring and summer by its egg sacs, which resemble small tufts of cotton at the base of hemlock needles. Tree hosts include the Eastern Hemlock (Tsuga canadensis) and Carolina Hemlock (T. caroliniana).

For More Information:
Hemlock Woolly Adelgid
Asian Longhorned Beetle (ALB) Update

The United States Department of Agriculture's Animal and Plant Health Inspection Service (USDA/APHIS) has recently made available to the public a finding of no significant impact (FONSI), together with the underlying final environmental assessment (EA) for the Asian Longhorned Beetle (ALB) Cooperative Eradication Program Revised Environmental Assessment in Clermont County, Ohio. The documents are available online at http://www.aphis.usda.gov/plant_health/ea/alb.shtml or by contacting Dr. Robyn Rose: 4700 River Road, Unit 137, Riverdale, MD 20737.

As of May 4, 2013, 9,287 ALB infested trees have been removed in Ohio as part of the eradication efforts in the Buckeye state. Surveys have examined 398,000 trees with 9,638 of those confirmed as infested since July 1, 2011.

Additional information about the ALB can be found at the USDA's website at www.AsianLonghornedBeetle.com.

For More Information:
USDA APHIS ALB Website
http://www.AsianLonghornedBeetle.com
Don't Move Firewood Website
http://dontmovefirewood.org

Get Your Green Industry Fix I

To get the training material updates from this ongoing webinar series, from business issues such as the Imprelis damage compensation class actions being wrapped up by June 28 by DuPont to the importance of P (phosphorus) for plant growth and development, keep tuned to the monthly webinars and the weekly BYGL. Register for the webinars by calling 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 May 1 - 8, 2013, with the exception of the soil temperatures which are readings from Wednesday, May 8, 2013 at 5:10 p.m.

Weather stations below I-70 have each recorded precipitation amounts, while those to the north have not for the month of May to date. With that said, all stations are below the normal precipitation levels.

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</thead>
<tbody>
<tr>
<td>Ashtabula</td>
<td>NE</td>
<td>73.2</td>
<td>50.6</td>
<td>0.00</td>
<td>0.07</td>
<td>71.64/71.41</td>
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<tr>
<td>Wooster</td>
<td>NE</td>
<td>74.5</td>
<td>51.6</td>
<td>0.00</td>
<td>0.80</td>
<td>64.83/62.60</td>
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<tr>
<td>Hoytville</td>
<td>N</td>
<td>75.8</td>
<td>52.4</td>
<td>0.00</td>
<td>0.70</td>
<td>65.28/64.51</td>
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<tr>
<td>Columbus</td>
<td>Central</td>
<td>73.9</td>
<td>56.4</td>
<td>0.07</td>
<td>1.00</td>
<td>61.18/60.29</td>
</tr>
<tr>
<td>Piketon</td>
<td>South</td>
<td>71.6</td>
<td>51.8</td>
<td>0.72</td>
<td>1.30</td>
<td>68.76/66.36</td>
</tr>
</tbody>
</table>
GDD is a measure of the daily maximum and minimum temperature and directly relates to growth and development of plants and insects. The GDD of any zip code location in Ohio is estimated using the GDD of ten OARDC weather stations and available on the web at: [http://www.oardc.ohio-state.edu/gdd/](http://www.oardc.ohio-state.edu/gdd/).

The range of GDD accumulations in Ohio from north to south is 259 to 390. Following is a report of GDD for several locations around Ohio as of May 8, 2013: Painesville, 259; Cleveland, 267; Toledo, 260; Canfield, 275; Findlay, 267; Van Wert, 271; Wooster, 286; Coshocton, 340; Columbus, 368; Springfield, 338; Dayton, 343; Cincinnati, 377; Ironton, 390; Portsmouth, 390; and Piketon, 390.

To put these GDD accumulations into perspective, the following is an abbreviated listing of plant and insect species with their respective phenological event and average GDD accumulations at which these events occur. Due to variations in weather, temperature, humidity, etc., these events may occur a few days earlier or later than predicted by the average GDD. By looking at a city, town, or village nearby on the above list, or visiting the above website, one can see what is taking place in the landscape.

- Common horsechestnut, first bloom, 251; **hawthorn lace bug, adult emergence, 253; hawthorn leafminer, adult emergence, 260; flowering dogwood, first bloom, 263; red buckeye, first bloom, 265; blackhaw viburnum, first bloom, 269; imported willow leaf beetle, adult emergence, 274; Sargent crabapple, full bloom, 298; red horsechestnut, first bloom, 304; pine needle scale, egg hatch - 1st generation, 305; cooley spruce gall adelgid, egg hatch, 308; eastern spruce gall adelgid, egg hatch, 308; Vanhoutte spirea, first bloom, 309; common lilac, full bloom, 315; 'Pink Princess' weigela, first bloom, 316; blackhaw viburnum, full bloom, 322; redosier dogwood, first bloom, 323; dwarf fothergilla, full bloom, 325; 'Winter King' hawthorn, first bloom, 328; lilac borer, adult emergence, 330; slender deutzia, first bloom, 338; Japanese kerria, full bloom, 342; common horsechestnut, full bloom, 344; red chokeberry, full bloom, 351; doublefile viburnum, first bloom, 353; Pagoda dogwood, first bloom, 363; red Java weigela, first bloom, 365; black cherry, first bloom, 368; common sweetsrub, first bloom, 371; lesser peach tree borer, adult emergence, 372; Ohio buckeye, full bloom, 374; holly leafminer, adult emergence, 375; Vanhoutte spirea, full bloom, 406; euonymus scale (first generation), egg hatch, 406.

For More Information:
- Growing Degree Days and Phenology for Ohio [http://www.oardc.ohio-state.edu/gdd/](http://www.oardc.ohio-state.edu/gdd/)
- Understanding and Using Degree-Days [http://ohioline.osu.edu/sc165/sc165_14.html](http://ohioline.osu.edu/sc165/sc165_14.html)

### Coming Attractions »

#### Plant Discovery Day

A great day of plant sales, plant auctions, art sales, auctioning of horticultural expertise of Ken Cochran, Joe Cochran and others as well as a look at the newest version of Secrest Arboretum and the newly certified OSU Wooster Tree Campus USA community forest arrives this Saturday, May 11, 2013 at Secrest Arboretum. This is the 20th anniversary of Plant Discovery Day at Secrest Arboretum. Check out more at [http://secrest.osu.edu](http://secrest.osu.edu).

#### Ohio's Non-Native Invasives

The Ohio Woodland Stewards Program is offering an all day workshop on Ohio's Non-Native Invasives at the Ohio State University, Mansfield Campus, 229 Riedl Hall, 1760 University Drive, Mansfield, Ohio, May 17, 2013, 8:15 a.m. - 4:00 p.m.
Tree School
The Ohio Woodland Stewards Program is offering an all-day Tree School at the Ohio State University, Mansfield Campus, 229 Riedl Hall, 1760 University Drive, Mansfield, Ohio, May 18, 2013. Information can be found on the website at http://woodlandstewards.osu.edu. Registration deadline is May 10, 2013.

Southwest Ohio BYGLive!
The second 2013 Southwest Ohio BYGLive! Diagnostic Walk-About will be held Monday, May 20, at the Cincinnati Zoo and Botanical Garden from 12:00 - 3:00 p.m. This monthly hands-on training series for Green Industry professionals focuses on diagnosing plant pest, disease, and physiological problems. ISA Certified Arborist CEU's 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. You can also e-mail Joe Boggs boggs.47@osu.edu to learn more about this diagnostic training series.

Buckeye Lady Beetle Blitz (BLBB)
BLBB training includes a full day workshop for volunteers to learn more about lady beetles and participate in research efforts. This year BLBB training will be offered in Columbus, Wooster, and online. Sign up for one of our 2013 training sessions using the registration links below. Registration is $20. Space is limited please register soon!

- May 20, 2013, 9 a.m. - 3:30 p.m., 4H Center, Columbus, to register visit the following web site: http://www.regonline.com/Register/Checkin.aspx?EventID=1220148.
- Online Training: Interested in attending an online version of our workshop? Contact Mary Griffith Griffith.483@osu.edu to register before May 15, 2013.

For More Information:
Buckeye Lady Beetle Blitz
http://ladybeetles.osu.edu/

Ohio's Invasive Species Series, June 2013, OSU Mansfield Campus
Invasive species come in all shapes and sizes. Whether a plant, insect, fungus or vertebrate, each invasive species impacts their segment of the ecosystem in different ways. This seminar series focuses on some of the key issues associated with non-native, as well as how to identify them and deal with them in your own backyard.

- June 4 - This evening's topic will cover two non-native invasive insects impacting Ohio's trees. Learn how to identify emerald ash borer (EAB) and Asian longhorned beetle (ALB) and understand their impact on your trees.
- June 11 - While EAB and ALB have gotten a lot of attention lately, there are still other non-native pests that you should be aware of. This seminar will cover gypsy moth, thousand canker disease on black walnut, viburnum leaf beetle and hemlock wooly adelgid.
- June 18 - Non-native invasives don't impact just our trees. This evening seminar will focus on the impacts non-native invasives have on wildlife and the wood products our woodland produce.
- June 25 - The last seminar session will focus on specific non-native invasive plants. Characteristics for identification will be covered along with control options.

Registration for each seminar is $15 OR register for all 4 seminars for $45. Information can be found on the website at http://woodlandstewards.osu.edu.
"The world's favorite season is the spring. All things seem possible in May."

- Edwin Way Teale

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