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This is the 2nd 2015 edition of the Buckeye Yard and Garden Line (BYGL). BYGL is developed from a Tuesday morning conference call of Extension Educators, Specialists, and other contributors in Ohio.

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

Plants of The Week »

Perennial - Lenten Rose, Christmas Rose, Hellebore (helleborus spp.)
A welcome sign in later winter and early spring, the blooms of hellebores are a delightful discovery when you walk around inspecting the garden, looking for anything that might be blooming or emerging from winter dormancy. These early bloomers sometimes last from February through May since the weather is cooler during this time period. There are around 15 species of hellebores with the most common the Lenten rose (H. orientalis) and the Christmas rose (H. niger).

Hellebores grow best in part shade and prefer moist but well-drained soil. The foliage is evergreen, sometimes lasting throughout the winter in the garden. The plants grow around 12” in height and are in clumps that spread slowly, growing to about 2’ in width. The new foliage and blooms appear sometime in early February (depending on species) and provide color throughout the season. The flowers are purple, pink, white and newer cultivars include combinations of these colors. There are also double-flowering cultivars as well. The only downside to their flowers is that they seem to be hanging their heads in shame, facing the ground. As one hellebore breeder noted, you need to walk around the garden with a cane that has a mirror on the end of it so that you can truly appreciate the flowers. Breeders are also working on cultivars that have blooms that are a little more upright. Don't miss out on these spectacular flowers - get on your hands and knees and really take a close look at the beauty of the blooms.

And finally, there are very few pest problems with hellebores. This is also another plant on the list of perennials that deer won't bother.

For More Information:
University of Vermont information on Hellebore: The Lenten Rose
http://pss.uvm.edu/ppp/articles/hellebore.html
Missouri Botanical Garden Plant Finder search list for Helleborus
http://www.google.com/cse

Woody - Sassafras (Sassafras albidum)
For most of Ohio sassafras is not yet in bloom, but with our warming weather and accumulating degree days it is just around the corner for these wonderful chartreuse-yellow blooms often overlooked by many. Sassafras flowers and fruits join foliage as ornamental features of this native tree. It is typically a medium-sized tree up to 30 - 50' but the national champion exceeds 100' in height. Tiny five-petaled sunny yellow flowers are attractive and in northern Ohio were emerging this past week. Leaves are variable, some entire, some mitten-liked and two-lobed, some three-lobed. Fall color can range from attractive yellows to yellow-orange, especially effective with a grove of sassafras trees. Bright scarlet fruit cups which remain after blue-black fruits are shed are attractive, especially if sun-reflected later in the season. Sassafras tolerates wetness, but prefers moist, well-drained, organic soils. Sassafras was once used for root beer commercially, and teas are still sold, but should be used only if liver-damaging and mildly carcinogenic safrole is removed in processing. Young sassafras leaves are dried to make file powder, which is a spice providing an earthy flavor and a thickening agent used in some types of Creole gumbo, replacing okra when it is not in season.

**Vegetable - Asparagus (Asparagus officinalis)**

The edible spears of this early season perennial vegetable are starting to be visible in Ohio as ground temperatures climb over 50F. Now is the time to closely watch your asparagus bed and harvest the spears when they are between 8 - 10” tall. One asparagus crown can produce 0.5 lb. of spears annually and can continue to produce for 15 years or more. To ensure a quality crop year after year, it is imperative to allow the asparagus fern to grow uncut in order to provide energy to the crown and roots. After the first frost when the foliage is yellow, prune to a 2” stub. Asparagus, which is in the Lily (Liliaceae) family and native to the Mediterranean, prefers full sun and well-drained soils with a pH of 6.5 - 7.5. It will not thrive in soils with a pH less than 6.0; therefore, soil testing is recommended before planting to determine what amendments may be needed. Early spring is also the time to plant new asparagus beds. Plant one-year-old healthy asparagus crowns in trenches that are 6 - 10” deep depending on the type of soil. Each crown should be covered with 2 - 3” of soil every two weeks until the trench is filled. Although asparagus is a drought-tolerant plant, new plants should be well watered if rainfall is scarce. Do not harvest any spears the first year; harvest for only 3 - 4 weeks the second year and the third year plants can be harvested for 6 - 8 weeks.

For a crop that can last 15 years or longer, care should be taken to select varieties that are all-male and disease resistant. All-male varieties produce more spears than varieties with male and female plants such as 'Mary Washington'. Female plants expend energy to produce seeds and this decreases production. Rutgers, the leader in asparagus breeding, recently released new all-male hybrids including NJ953 and NJ1025. These are said to be superior in yield and disease resistance to their earlier all-male hybrids 'Jersey Knight' and 'Jersey Giant'. Asparagus can be green, purple, or white. White asparagus is not a variety but rather a spear grown without sunlight so that chlorophyll has not been produced. Asparagus pests include cutworms and the asparagus beetles and diseases include rust and Fusarium root rot.

For More Information:
- Virginia Cooperative Extension Publication 426-401, Asparagus
- Michigan State University Extension, Growing Asparagus at Home
  http://msue.anr.msu.edu/resources/growing_asparagus_at_home
- Rutgers, School of Environmental and Biological Sciences, Dr. Chee-kok Chin
  http://plantbiopath.rutgers.edu/faculty/chin/chin.html
- Cornell University Vegetable Growing Guide
  http://www.gardening.cornell.edu/homegardening/scenee3ed.html

**Weed - Poison Hemlock (Conium maculatum)**

This non-native invasive weed is among the most deadly plants in North America. The plant contains highly toxic piperidine alkaloid...
compounds, including conine and gamma-coniceine, which cause respiratory failure and death when ingested by mammals. The roots are more toxic than the leaves and stems; however, all parts of the plant including the seeds should be considered dangerous. Unfortunately, this dangerously toxic plant is becoming more common throughout Ohio including growth in landscape plantings where close proximity to people increases poisoning risks.

Poison hemlock is a biennial weed. It spends the first year as a basal rosette and the second year as an erect, towering flowering plant that can measure 6 - 10’ tall. Despite its common name, poison hemlock is not a tree; it is a member of the carrot family, Apiaceae (formerly Umbelliferae). Thus, it shares many characteristics with other members of the carrot family found growing in Ohio including native plants such as QUEEN ANNE’S LACE (*Daucus carota*) and other notorious non-natives such as WILD PARSNIP (*Pastinaca sativa*). All stages of the poison hemlock plant have bluish-green leaves that are 3 - 4 times pinnately compound, and the deeply cut parsley-like leaflets have sharp points. Flowering plants have hairless, light-green to bluish-green stems that are covered with obvious purplish blotches. Clusters of tiny white flowers are borne on structures called umbels that look like upside-down umbrellas.

While poison hemlock can be partially managed by mowing and tilling, the most effective control approach involves properly timed applications of selective or non-selective post-emergent herbicides including glyphosate (e.g. Roundup). It is a prolific seed producer, so applications of herbicides made now will control both the first season rosette stage and the second season flowering stage, before seeds are produced.

For More Information:
- Virginia Tech Online Weed Identification Guide
- USDA Natural Resources Conservation Service Plant Profile
  [http://plants.usda.gov/java/profile](http://plants.usda.gov/java/profile)

**Hort Shorts »**

**Dig Into Spring With A Soil Test**

A soil test is a useful planning tool, providing information on nutrient levels and pH that can guide plant selection and fertility management. Early spring is a good time to test so that you have the results in hand to guide fertilizer application, avoiding nutrient deficiency, imbalance, and excess.

Nutrient levels and soil pH fluctuate from year to year, so it is a good idea to get your soil tested routinely every 2 - 3 years. Contact the lab before collecting your sample to make sure you have all the necessary forms and guidelines.

Obtaining meaningful test results depends on collecting and submitting a soil sample that is representative of your sampling area. To capture a representative sample of your soil, take the following steps:

- Remove organic debris, including turf thatch or sod, from the surface of the area you are sampling;
- Using a soil probe, pull cores 6 - 8” deep. If you do not have a probe, you can also use an auger, spade, trowel, or knife;
- Pull 10 - 15 cores in a random, zigzag pattern throughout the sampling area, placing each core into a bucket;
- Mix the cores together in the bucket, breaking up lumps;
- Allow soil to air dry at room temperature (do not heat);

Take about one pint of the sample from the bucket and submit according to guidelines outlined by the lab.

Test results may indicate whether you have an excess, deficiency, or appropriate level of each nutrient being tested, and will typically include liming and fertilizer recommendations based on your results and crop type. These nutrient recommendations are often expressed in lbs./1000 sq. ft., requiring you to do some math to determine the appropriate amount of fertilizer to apply to your soil.

Online tools are available to aid in these calculations (see [www.msusoiltest.com](http://www.msusoiltest.com) and [www.turf.wisc.edu/tools](http://www.turf.wisc.edu/tools)), allowing you to input soil test results and information about your garden including area and crop type. You can also refer back to the lab, or to your county Extension office, for help interpreting test results.
Overwintered European pine sawfly (EPS) (Neodiprion sertifer) eggs have hatched in southwest Ohio. The tiny 1st instar larvae measure a little over 1/16” long. They are grayish-green with bulbous shiny black head capsules; their color and small size make them difficult to see as they feed on the needles. However, rows of yellowish-brown egg scars created last season when the female sawflies used their saw-like ovipositors to insert eggs into the needles remain very evident and should signal a closer inspection for sawfly larvae.

All larval stages feed in colonies and practice the same feeding behavior. They start by aligning themselves with their head at the tip of a needle and feed downward to the needle fascicle. Groups of 3 - 5 first instar larvae may be found feeding on a single needle; however, they are too small to devour the entire needle. The tiny larvae only consume the outer needle tissue leaving behind the central vascular bundle which dries out and turns light brown. Clusters of curled, wiry, straw-colored "needles" are a telltale indicator that first instar EPS larvae are afoot. Later instars become large enough to consume entire needles. Although they also become big enough to be easily seen, they may remain camouflaged by their grayish-green color coupled with faint grayish-white longitudinal stripes.

Preferred hosts include Scotch, mugo, red, jack, Table mountain, and Swiss mountain pines. White and Austrian pines are occasional hosts. EPS larvae only feed on last year's needles; they complete their development at about the time new candle growth begins to emerge and elongate. There is only one generation per season. Their consumption of last season's needles means EPS has a limited impact on the overall health of infested trees. However, the loss of last season's needles affects aesthetics with this season's needles eventually appearing puff-like on the ends of denuded branches; the so-called "poodle effect." While most insecticides labeled for use on the conifer host will control the larvae, it's easy to dispatch the early instars by simply smashing the little buggers; gloves are optional. Colonies of later instars can be knocked to the ground and stomped; shoes are optional.

For More Information:
- Penn State University Entomology Fact Sheet
  http://ento.psu.edu/extension/factsheets/european-pine-saw-fly-
- University of Minnesota Sawflies of Trees and Shrubs
  http://www.extension.umn.edu/garden/insects/find/sawflies/

Green Tigers on the Prowl

Over the years, SIX-SPOTTED TIGER BEETLES (Cicindela sexguttata) have become a seasonal favorite with BYGLers partially because these native beetles have a curious affinity for darting about on woodland trails; they can certainly liven up a walk in the woods. The shiny beetles are also more emerald green in color than EMERALD ASH BORERS (Agrilus planipennis) causing them to sometimes be mistaken for the non-native borer. Indeed, these tiger beetles have excellent eyesight, quick speed, and they are agile flyers; traits that make it difficult for people to get a close look for accurate identification.

The beetles have elongated bodies with the thorax about half the width of the front wings and abdomen. They have long legs and their bulging black eyes make them look like they're wearing dark goggles. As the common name implies, six-
spotted green tiger beetles have white spots that are arranged along the trailing edge of the wing covers, three spots per side. The spots are small and sometimes obscured by light bouncing off their highly reflective shiny green bodies.

As with all tiger beetles (family Cicindelidae), this is a ferocious predator and it sports powerful sickle-shaped mandibles that are used to grab and dispatch hapless arthropod prey. A word of caution: these carnivores can also use their impressive mandibles to deliver a painful bite to the hand of the overly curious. So, keep your eyes peeled for and hands away from these tigers prowling woodland trails...and don't kill them since they are good guys!

For More Information:
University of Kentucky Department of Entomology, Kentucky Critter Files - Kentucky Insects
http://www.uky.edu/Ag/CritterFiles/casefile/insects/beetles/tiger/tiger.htm

It's Never Too Early for Ticks

Spring has sprung, but some ticks have been active all winter long! So do not assume it is too early to take preventative measures against ticks and to perform tick checks after your first walk through the park with Fido. Ticks feed on blood at every development stage from larva, nymph, to adult. The larvae and nymphs prefer smaller hosts like rodents, and adults prefer larger hosts, but that does not preclude any form from feeding on humans. Ticks wait on the tips of grass blades and weeds for a preferred host to brush by. This includes deer, dogs, other small mammals, or humans. The tick attaches to fur or clothing and then climbs up (they do not fly nor jump down from tree branches) until it finds an exposed area to attach and feed with its piercing-sucking mouthpart. On a well-covered person, this can be as high up as the neck or scalp. Female tick can remain attached and feed for 7 to 11 days before dropping off and laying up to 6,000 eggs or more depending on species.

Three ticks are of medical importance to humans in Ohio. Unfortunately all three, the AMERICAN DOG TICK (Dermacentor variabilis), the BLACKLEGGED TICK, also known as the DEER TICK (Iodes scapularis), and the LONE STAR TICK (Amblyomma americanus) are commonly encountered and populations are on the rise. They are vectors of several diseases, most well-known of which is Lyme disease, vectored only by the deer tick. Ticks may also be infected with multiple diseases at a time, which could potentially be transmitted to their host.

The American dog tick prefers grassy areas along paths and roads, often along edges of forests and shrubby areas. While active spring through summer, they are most prolific mid-April through mid-July. The deer tick or blacklegged tick has become an increasing problem in Ohio. It prefers forested, wooded habitat. The deer tick can have one or more life stages active all year long, including in the grips of winter! Lone star ticks are a larger problem in southern Ohio, though they can be found across the state. They prefer shaded grassy and shrubby areas along roadsides or meadows. Avoiding these areas or employing preventive measures when planning on entering these areas can help to prevent tick attachment.

To avoid ticks, keep lawns mowed as ticks are often found on knee-high grasses and shrubby vegetation. In nature areas, stay on walking paths and tuck pants into socks, and shirts tucked into pants to prevent ticks from climbing up and under apparel. Several repellents containing DEET are available and can be applied to skin and pant legs before venturing out (20 - 30% strength is recommended on the Ohio Department of Health's website). Products specifically for clothing are also available containing permethrin. Follow ALL INSTRUCTIONS on LABELS of any and all products. The label is the law. Pre-treated clothing may be purchased from several companies dealing in outdoor gear. Clothing can also be sent away to vendors that specialize in pre-treating clothing. Treatments may last several washes if done professionally. People should check themselves after returning from tick habitats by using mirrors to self-inspect. Adults should inspect children as well. Pay attention to areas where clothing is close to the skin, like elastic. Remember, tick larvae and nymphs can be as small as poppy seeds, some near translucent, be thorough in your check. Clothing can be dried first before washing on high heat to kill ticks or nymphs to prevent them reattaching later or to others.

Tick removal should be done with care as squishing the arthropod can force more bacteria-laden fluids into the wound. Additionally, allowing parts of the head to remain embedded can lead to infection. Ticks can be removed using pointy forceps or tweezers to grasp the tick as close to the skin as possible. Gently and slowly pull the tick out so that the mouthparts are removed, instead of breaking the body off from the head. Do NOT employ folk methods. Matches, Vaseline, or alcohol are not considered effective. The goal is to remove the entire tick as quickly as possible to prevent disease transmission. Wash the area after removal with soap and water. Contact your medical provider about monitoring for disease transmission, especially if a rash develops or a fever, even weeks later.
BYGLers also ran into a number of other insect pests this week including:

- Last week (BYGL 2015-01, 04/09/05), we predicted that overwintered EASTERN TENT CATERPILLAR (ETC) (Malacosoma americanum) were about to hatch in southwest Ohio based on accumulated Growing Degree Days (GDD). Cincinnati had reached 84 GDD by 04/07; egg hatch is predicted at 92 GDD. This week, Joe Boggs reported observing small silk nests, most measuring only 1 - 2" long, characteristically located in the forks of twigs and branches. The caterpillars hide in the nests during the day and leave the nests to feed on leaves at night. ETC prefers 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.

- Joe Boggs also reported that overwintered EUROPEAN ELM FLEA WEEVILS (Orchestes alni) are poised to attack emerging elm leaves in southwest Ohio. A close examination revealed weevils positioning themselves near leaf buds in anticipation. Adults produce small feeding holes in newly emerging leaves and females produce additional damage by laying eggs into mid-rib veins and major lateral veins of the leaves. As leaves expand, the feeding holes become larger and more apparent producing the characteristic "shothole" leaf damage associated with this weevil. Damage caused by oviposition also becomes more noticeable with leaves failing to fully expand beyond the vein wounding and the affected area turning yellow and curling downwards. Once the eggs hatch, larvae begin feeding as leafminers tunneling through the leaf tissue toward the margins of the leaves. This non-native pest attacks all species of elms including American elm (Ulmus americana); however, Siberian elms (Ulmus pumila) are particularly susceptible.

- EARLY POLLINATORS TAKE FLIGHT. While it may be a cool spring so far, it hasn't stopped some of our early-emerging pollinators! BYGL writers have reported LEAF-CUTTER BEES (Megachile spp.), BUMBLEBEES (Bombus spp.), and CARPENTER BEES (Xylocopa spp.) out in the landscape along with pollinating HOVER FLIES (Syrphid spp.), which are bee mimics and are often confused for bees. While our non-native European honeybees need it to be a little warmer than 50°F to be out visiting our early flowers, Bumblebees and other native bees are capable of flight in cooler, wetter weather. It is estimated that there are about 500 native bee species in Ohio including social bees like bumblebees, and solitary bees such as ground nesting bees and cavity nesting bees. This is one great example for why it is beneficial to have flowers that span the growing season. Early bloomers like crocus, daffodil, and even flowering trees provide much needed food sources for these early risers!

Because these early pollinators are out and about, homeowners should be cautious when using insecticides in the landscape this early in the season. Be cognizant of flowering plants in the landscape where pollinators are visiting. Make sure to always follow the label on pesticides to ensure proper and timely application of chemicals if they are to be used. Many chemicals now have bee-restrictions to prevent impacting pollinators. The label is the law. Gardeners can also help these early pollinators by improving pollinator habitat for bees, flies, moths, butterflies, and beetles.

For More Information:
Ohio Factsheet: Attracting Pollinators to the Garden
Understanding the host ranges of pests and pathogens that cause infectious plant diseases and pest infestations is important in plant health management, in evaluating the potential risks of a particular pest or pathogen, and in communicating with our clientele and customers. After all, the host is one of the three sides of the Disease and Pest Triangles (along with the pest or pathogen and the environment conducive to disease or infestation). Here are a few key considerations about host ranges.

**Host Ranges Are Often Narrow.** Most plant pathogens have narrow host ranges. The downy mildew of impatiens water mold pathogen (*Plasmopara obducens*) occurs on *Impatiens walleriana*, the common bedding plant impatiens and some wild impatiens species, but not on other plant genera, and not on New Guinea impatiens (*Impatiens hawkeri*). The rose black spot fungus (*Diplocarpon rosae*) occurs only on certain roses in the genus *Rosa*. The plum black knot fungus (*Dibotryon morbosum*) infects only plants in the genus *Prunus*, such as cherry, almond, peach, and, of course…plum. Bacterial fireblight occurs only on genera in the rose family (Rosaceae), such as apple/crabapple (*Malus*), pear (*Pyrus*), and *Sorbus* (mountainash).

Likewise many insect pests have highly limited host ranges. The devastating emerald ash borer (*Agrilus planipennis*) infestation in North America at least occurs only on ashes (*Fraxinus*), and now on another member of the olive family (Oleaceae), white fringetree (*Chionanthus virginicus*). The bronze birch borer insect (*Agrilus anxius*) occurs only on *Betula*. Hemlock woolly adelgids occur only on hemlocks (*Tsuga*), viburnum leaf beetles damage only *Viburnum*, and European pine sawflies occur thrive on *Pinus*. On the other hand…

**Host Ranges May Be Wide.** In sharp contrast to the fraxinophilic emerald ash borer that we have gotten to know all too well, another borer in the news - the Asian longhorned beetle (*Anoplophora glabripennis*) has a wide host range, from maples, horseechsteunts, elms and willows as some of their very good hosts to many additional hosts such as birch, planetrees, poplars, goldenrain trees, and many others, a fact that makes it even scarier to contemplate if we do not eradicate those infestations we know about. Another example, Japanese beetles (*Popillia japonica*) feed on many hosts, from turfgrass (as larval grubworms) to the wider training table for adults that includes everything from roses to lindens, dawned woods to primroses.

Similarly, there are pathogens with wide host ranges. The *Verticillium* fungus infects many plants, both woody and herbaceous, from *Acer* (maple) to *Viburnum*, from *Impatiens walleriana* to fruits and vegetables such as brambles and tomatoes. *Botrytis cinerea* and its cousins infect almost everything from redwoods in propagation to roses and petunias in the landscape. The bacterial crown gall pathogen, *Agrobacterium tumefaciens*, has a host range of at least 600 plant species in 142 genera and over 90 families, including notably susceptible evergreen euonymus and roses.

How does all this play into plant health management strategies? Well, if a key desire for a customer is a formal rose garden, then planting evergreen euonymus around the house is taking quite a risk. The debilitating effects of crown galls on the vascular health of roses is usually what makes rose gardens fade over time, and it is not easy to do anything about it other than put up with lesser roses or start over; bactericides for crown gall are not effective.

**Botryosphaeria Canker on Redbud**

BYGLers discussed the appearance of symptoms of Botryosphaeria canker caused by the fungus, *Botryosphaeria dothidea*, on rebuds. The fungus is considered both "cosmopolitan" meaning that it can infect woody plants in over 100 genera, and "opportunistic" meaning that it readily infects trees and shrubs that are suffering from environmental stress, particularly drought stress. Common landscape hosts include ash, birch, cotoneaster, crabapple, dogwood, elm, magnolia, and of course, rebuds. Cankers may become abundant on older, stressed rebuds.

The fungus kills bark and phloem tissue and infections may occur randomly throughout the tree. The cankers appear as sunken areas of bark that may be surrounded by swollen edges (callus tissue) and covered with roughened bark that occasionally splits to expose the xylem. The cankers range in size from small, almost unnoticeable elliptical lesions, to large areas of blighted tissue. Leaves on lightly cankered branches may fail to fully expand. However, branches with multiple...
cankers may be girdled and killed causing leaves on the affected branch to turn reddish-brown and die; a symptom known as "flagging." Entire trees may be killed if the cankers move from branches into the main stem.

Maintaining healthy trees is the best defense against Botryosphaeria canker since vigorous trees can resist infection. Proper site selection, planting, and aftercare are all essential to avoid loss of branches or entire trees to this fungus. It is particularly important to provide water throughout periods of extended drought. Should trees become infected, it is essential to remove cankered branches promptly upon detection to reduce spread of the disease within the tree or to nearby trees. Pruning should be done during dry weather and cuts made at least 6 - 8" below infected tissue. Pruning tools should be sterilized between cuts using denatured alcohol to prevent the tools from becoming vectors of the disease. Fungicidal applications have not proven to be effective in controlling this canker disease.

Turf Tips

A Turf of a Different Color

The onset of turfgrass green-up in the spring may bring complaints of patches of grass in home lawns that appear very different from the surrounding turfgrass. If lawns were spot-seeded last fall, patches of light-green, thin-bladed grass may simply be juvenile plants; it takes a full season for turfgrass to mature. Patches of grass that don’t match the color, texture, or growth rate of the surrounding turfgrass may also be another turfgrass, or a grassy weed. Turf-type tall fescue (Festuca arundinacea) and Kentucky bluegrass (Poa pratensis) are two of our preferred lawn grasses in Ohio; however, the two species do not always play well together. They have very different colors, textures, growth characteristics, and spring growth rates. At this time of the year, the more upright, lighter-colored, coarser textured tall-fescue plants may look like bomb-blasts erupting in a sea of blue-green, finer textured Kentucky bluegrass.

Joe Boggs reported that patches of light-colored rapidly growing grass in lawns in southwest Ohio are often ROUGHSTALK BLUEGRASS (Poa trivialis). This perennial grass species is also called "rough bluegrass," or simply "Poa triv." It does best in moderately shaded moist soils and was once sold for spot-seeding in Kentucky bluegrass lawns to grow grass where the Kentucky bluegrass failed to thrive. Unfortunately, roughstalk bluegrass is now considered a difficult-to-control, invasive grassy weed in home lawns. Seed may be spread by birds, shoes, or other carriers causing it to show-up in lawns where it was never seeded. Mature plants spread by producing above-ground stems (stolons) with blades rising from a thick mat of fibrous roots interwoven with stolons; it is a notorious thatch-producer. Roughstalk bluegrass is highly competitive with turf-type tall fescue and Kentucky bluegrass. Small round to irregularly-shaped spots gradually expand and are most evident at this time of the year with light-green, rapidly growing blades rising upright above the surrounding preferred turfgrass.

Control of perennial grasses in turfgrass is problematic because desired grasses are also perennial. Physically removing the offending non-preferred grass using a shovel or sod-cutter, then reseeding or sodding is a non-chemical control option; however, all parts of the grassy weed must be removed to avoid re-infestation. Tall fescue can be controlled in a Kentucky bluegrass lawn using the selective herbicide chlorsulfuron (e.g. Corsair); however, this herbicide works very slowly and may require applications to be made over multiple years. Also, chlorsulfuron will kill perennial ryegrass (Lolium perenne) and may cause moderate yellowing to Kentucky bluegrass. The non-selective, glyphosate (e.g. Roundup), followed by re-seeding or sodding is also effective. However, multiple applications may be required to kill well-established plants, particularly grassy weeds with stolons or rhizomes (underground stems).

For More Information:
Michigan State University, The Lawn Problem Solver
http://ksuturf.org/Lawn_Problem_Solver_Site/solver/weeds/wd-roughstalk_bluegrass.shtml

Mud Chimneys are Rising

Mud "chimneys," the nuisance handiwork of TERRESTRIAL or BURROWING CRAYFISH, are rising above turfgrass in southwest Ohio. There are several species of burrowing crayfish, but most belong to two genera: Cambarus and Fallicambarus. Like their aquatic cousins, these crayfish use gills to extract oxygen from water. However, unlike their water-soaked cousins, burrowing crayfish spend most of their lives on land. They must
dig their burrows down to ground water so they have a ready source of oxygen. This connection to a high water table explains why most burrowing activity occurs in poorly drained soils near streams or around shallow ditches.

The crayfish throw soft mud up around their exit holes as they excavate the soil. These chimney-like structures may tower 3 - 8” above the soil surface and can present a real hazard to mowing. Indeed, hitting a sun dried brick-hard crayfish chimney with a mower dulls mower blades and sends up a huge cloud of dust...often accompanied by a stream of expletives. Unfortunately, there is little that can be done to directly control these terrestrial “mud bugs.” Pouring materials down the holes to kill the crayfish is strongly discouraged since the burrows extend down to ground water which could become contaminated.

Management generally focuses on physically reducing the high profile of the chimneys, patience, and habitat modification. The chimneys can be stomped or raked smooth prior to mowing. Patience focuses on recognizing that most of the crayfish's excavation activity occurs early in the season, and will subside as the season progresses. Habitat modification focuses on improving water drainage to lower the water table. This may involve lowering nearby drainage ditches.

A more direct approach to managing these annoying crustaceans is to apply a little stealth to hunt them down and kill them. The omnivorous crayfish may range several feet from their burrows at night in search of plant and animal food, living or dead. They are not fast as they crawl across the ground and are highly susceptible to a well-aimed foot.

For More Information:
N.C. State Ornamental and Turfgrass Fact Sheet
http://go.osu.edu/lawn2015

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**Industry Insight »**

**Tis the Season for Gypsy Moth Hatch**

Egg hatch coincides with the bloom of eastern redbud (Cercis canadensis) and begins at approximately 192 Growing Degree Days (GDD). Ideal timing of treatments either by homeowners, arborists, nurseries, or the Ohio Department of Agriculture (ODA) is when all caterpillars have hatched, are in early instars, and actively feeding on plant foliage. The timing coincides with the first bloom of black cherry and is approximately 370 GDD.

The ODA will soon begin aerial treatments designed to manage the gypsy moth population in Ohio. Treatments will begin as larva and leaf development reaches the optimal threshold for treatment. Treatments are administered using a low-flying aircraft that flies just above tree tops. High humidity, low temperature and minimal wind are crucial for a successful application. Treatment will most likely take place during early morning hours.

The ODA uses three programs to manage the gypsy moth population in Ohio. The suppression program is used in counties where the pest is already established, but landowners voluntarily request treatment to help suppress populations. The second program, slow-the-spread, occurs in counties in front of the larger, advancing gypsy moth population. The third program is the eradication program, used in counties where isolated populations develop ahead of advancing moth populations due to human movement of the moth. Officials work to detect and control isolated populations to slow the overall advancement of the gypsy moth infestation. For more information about the gypsy moth quarantine or for specific treatment locations, visit www.agri.ohio.gov.

Ohioans can view maps of treatment blocks at www.agri.ohio.gov. Daily updates on treatment progress across the state are available by calling 614-387-0907 or 1-800-282-1955, ext. 37, any time after 5 p.m.
Walnut Twig Beetle Confirmed in Indiana

The Indiana Department of Natural Resources (IDNR) announced last Thursday (4/9) that walnut twig beetle (*Pityophthorus juglandis*) had been confirmed from a sawmill located in southeast Franklin County Indiana. The county borders Butler and Hamilton Counties in Ohio. The beetle is the proven carrier of the fungus, *Geosmithia morbida*, which produces Thousand Cankers Disease (TCD) on eastern black walnut (*Juglans nigra*).

The beetles were first collected in a trap placed in the sawmill last season as part of a statewide beetle detection survey and more beetles were collected from logs and lumber during a subsequent investigation; however, the beetle's true identity was only recently confirmed by TCD experts. Ongoing tests of both the beetles and wood from the sawmill have yet to reveal a presence of the disease causing fungus. Likewise, no beetle infested or fungal infected standing black walnut trees have been found around the sawmill, but further surveys are planned for this season. This was the only detection of the beetle in Indiana from last season's 100+ survey traps deployed throughout the state. Since the beetles appear to be confined to the sawmill, only the sawmill property has been placed under quarantine by IDNR.

For More Information:
IDNR News Release
http://www.in.gov/activecalendar_dnr/EventList.aspx

WeatherWatch »

Weather Update
The following weather information summarizes data collected at various Ohio Agricultural Research Development Center (OARDC) Weather Stations spanning the dates from April 1 - 14, 2015, with the exception of the soil temperatures which are readings from Wednesday, April 14, 2015 at 11:10 p.m.

It is beginning to feel a little bit more like spring in Ohio. Spring rains have all but one weather station recording above average precipitation amounts for the first fourteen days of April. Hopefully these April showers will bring abundant May flowers.

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<td>54.11/54.08</td>
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<td>4.08</td>
<td>1.5</td>
<td>55.23/56.16</td>
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For More Information:
OARDC Weather Stations
http://www.oardc.ohio-state.edu/centernet/weather.htm

Growing Degree Days (GDD)
GDD is a measure of the daily maximum and minimum temperature and directly...
relates to growth and development of plants and insects. The GDD of any zip code location in Ohio is estimated using the GDD of ten OARDC weather stations and available on the web at: http://www.oardc.ohio-state.edu/gdd/.

The range of GDD accumulations in Ohio from north to south is 68 to 179. Following is a report of GDD for several locations around Ohio as of end of the day of April 15, 2015: Painesville, 68; Cleveland, 75; Toledo, 75; Canfield, 80; Findlay, 75; Van Wert, 80; Wooster, 91; Coshocton, 121; Columbus, 139; Springfield, 130; Dayton, 135; Cincinnati, 166; Ironton, 178; Portsmouth, 179; and Piketon, 179.

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 web site, one can see what is approximately taking place in the landscape.

Silver maple, first bloom, 34; Corneliancherry dogwood, first bloom, 40; silver maple, full bloom, 42; red maple, first bloom, 44; speckled alder, first bloom, 52; northern lights forsythia, first bloom, 58; Japanese pieris, first bloom, 60; red maple, full bloom, 75; star magnolia, first bloom, 83; border forsythia, first bloom, 86; eastern tent caterpillar, **egg hatch**, 92; Manchurian cherry, first bloom, 93; northern lights forsythia, full bloom, 94; Norway maple, first bloom, 116; border forsythia, full bloom, 116; chantagee callery pear, first bloom, 123; sargent cherry, first bloom, 127; larch casebearer, **egg hatch**, 128; Japanese pieris, full bloom, 129; saucer magnolia, first bloom, 133; common flowering quince, first bloom, 137; Bradford callery pear, first bloom, 142; European pine sawfly, **egg hatch**, 144; weeping Higan cherry, first bloom, 145; P.J.M. rhododendron, first bloom, 147; chantagee callery pear, full bloom, 149; Norway maple, full bloom, 149; **inkberry leafminer, adult emergence**, 150; sargent cherry, full bloom, 151; star magnolia, full bloom, 151; Allegheny serviceberry, first bloom, 153; Manchurian cherry, full bloom, 155; spring snow crabapple, first bloom, 155; apple serviceberry, first bloom, 159; **spruce spider mite, egg hatch**, 162; Bradford callery pear, full bloom, 164; Allegheny serviceberry, full bloom, 169; saucer magnolia, full bloom, 174; P.J.M. rhododendron, full bloom, 178; boxwood psyllid, **egg hatch**, 179; weeping Higan cherry, full bloom, 179; Korean spice viburnum, first bloom, 185; regent serviceberry, first bloom, 186; Japanese flowering crabapple, first bloom, 189; eastern redbud, first bloom, 191; and **gypsy moth, egg hatch**, 192.

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

**Coming Attractions »**

**Southwest Ohio BYGLIVE! Diagnostic Walk-Abouts**

This is the 19th year for the Diagnostic Walk-About series in Southwest Ohio. The first 2015 BYGLive! Diagnostic Walk-About will be held Monday, April 20, 2015 at Spring Grove Cemetery and Arboretum 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 CEUs and Landscape Architecture Continuing Education System (LA CES) CEUs for Landscape Architects will be available.

For more information and to register, visit http://go.osu.edu/zs7. You can also e-mail Joe Boggs boggs.47@osu.edu to learn more about this diagnostic training series.

**Pond School**

Pond School is a 3-hour workshop on pond care and management. There will be 8 different presentations to choose from taking place across 3 concurrent tracks of 1-hour sessions. There will be lectures, hands-on, and outdoor sessions on a variety of aquatic topics including algae control, aggressive vegetation, managing wildlife around the pond, fish
management, aerating, water testing and more. Pre-registration is required and space is limited. May 27, 2015 at Wolf Creek Environmental Center, 6100 Ridge Rd., Sharon Center, OH in Medina County. Program starts at 5:30 p.m. and goes to 8:30 p.m. Registration Deadline is May 11, 2015. For more information visit: [http://go.osu.edu/pond](http://go.osu.edu/pond)

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**Buckeye Lady Beetle Blitz & Good Garden Bugs Workshop**

The Ag-Urban Landscape Ecology Lab is hosting three sessions of a workshop this year in May to kick off The Buckeye Lady Beetle Blitz 2015! This workshop will focus on training for our Buckeye Lady Beetle Blitz citizen science project. We will provide a review of lady beetle identification and sampling procedures, and distribute the 2015 toolkits. Dr. Mary Gardiner will also cover information from her new book, "Good Garden Bugs", due out this May. Participants will learn about the diversity of beneficial arthropods that inhabit their garden. A flyer is attached with additional information, and even more can be found on our website: [http://www.ladybeetles.osu.edu](http://www.ladybeetles.osu.edu). Please direct any questions towards Chelsea Smith (smith.7231@osu.edu) or call 330-202-3555 x2583).

We have three locations for this workshop:

- **WOOSTER**: May 14, 2015 at OARDC's Fisher Auditorium, 1680 Madison Ave, Wooster, OH;
- **CLEVELAND**: May 21, 2015 at the OSU Cuyahoga County Extension Office, 5320 Stanard Ave., Cleveland, OH;
- **DAYTON**: May 27, 2015 at the Montgomery County Fairgrounds, 1001 South Main Street, Dayton, OH.

Registration: **PRE-REGISTRATION IS REQUIRED.** The cost for the workshop is $20.00. Checks should be written out to "Ohio State University". Lunch will NOT be provided. Participants can bring a brown bag lunch or visit a local restaurant (a list of local options will be provided). The registration fee includes workshop attendance, beverages, and BLBB sampling kits. Follow this link for a registration form: [http://ale.cfaes.ohio-state.edu/sites/gardinerlab/files/imce/Events/2015%20registration%20form_workshop_ALL-fillable_0.pdf](http://ale.cfaes.ohio-state.edu/sites/gardinerlab/files/imce/Events/2015%20registration%20form_workshop_ALL-fillable_0.pdf) and send it by email* to Chelsea Smith smith.7231@osu.edu or US mail to:

Chelsea Smith  
1680 Madison Ave  
Thorne Hall  
Wooster, OH 44691

Please send your registration form in at least 3 days before the workshop you are attending. For more information please contact: Chelsea Smith ( smith.7231@osu.edu) or call 330-202-3555 x2583). Learn more by visiting [http://www.ladybeetles.osu.edu](http://www.ladybeetles.osu.edu).

* If you are emailing the form in please follow these steps: 1) Fill out the PDF 2) Save the PDF as a file on your computer 3) Open the file to confirm that your entries were saved 4) Attach the saved completed PDF file to an email and send it to smith.7231@osu.edu.

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**The OSU GreenIndustry Short Course, The Ohio Turfgrass Foundation Conference and Trade Show, and Trees on Tap Programs**

Mark your calendars now, for these shows will come sooner than you think, to the Columbus Convention Center on December 8 - 10, 2015 with the addition of a special tree program on Monday, December 7, 2015. Details on over 100 educational programs and a wide array of certification credits will be coming all year on BYGL. We are happy to acknowledge the robust support of the Ohio Turfgrass Foundation for their financial and other support of the educational efforts of the OSU Extension Nursery Landscape and Turf Team, a group that brings you a range of programs, field diagnostic walkabouts (such as BYGLive! in southwest Ohio), problem troubleshooting, numerous publications, and of course, the BYGL.

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**Byglosophy »**

"It is only the farmer who faithfully plants seeds in the Spring, who reaps a harvest in the Autumn." - *B. C. Forbes*

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