UNIVERSITY OF MARYLAND EXTENSION

TPM/IPM Weekly Report

for Arborists, Landscape Managers & Nursery Managers

Commercial Horticulture — October 2, 2020

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IPMnet Integrated Pest Management for Commercial Horticulture

extension.umd.edu/ipm

If you work for a commercial horticultural business in the area, you can report insect, disease, weed or cultural plant problems **(include location and insect stage)** found in the landscape or nursery to sgill@umd.edu

Coordinator Weekly IPM Report:
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Regular Contributors:
Pest and Beneficial Insect Information: Stanton Gill and Paula Shrewsbury (Extension Specialists) and Nancy Harding, Faculty Research Assistant
Disease Information: Karen Rane (Plant Pathologist) and David Clement (Extension Specialist)
Weed of the Week: Chuck Schuster (Retired Extension Educator)
Cultural Information: Ginny Rosenkranz (Extension Educator, Wicomico/Worcester/Somerset Counties)
Fertility Management: Andrew Ristvey (Extension Specialist, Wye Research & Education Center)
Design, Layout and Editing: Suzanne Klick (Technician, CMREC)

Tough Digging Time in the Nursery

By: Stanton Gill

October is here and demand for fall dug trees is strong. The trouble is that the ground is bone dry, making digging very difficult. Many nursery managers are having to really soak the ground before digging at least until the soil moisture levels return to a more normal state. We had some rain this week, but not enough to really reinvigorate the soil for good digging.

For landscapers it is essential that the newly transplanted trees and shrubs have regular watering when transplanting. October and November are usually good months for transplant establishment but the water needs are critical.

If you sowed forage radish, the rains Tuesday night will help it germinate and get going for growth in October. I seeded my operation 2 weeks ago but the seed was just sitting there waiting for moisture to germinate. Fortunately, forage radish germinates quickly when it has a little rain.

ASH TREES With EAB NEEDED for RESEARCH

The Shrewsbury and Gruner labs (Dept. of Entomology, UMD) are looking for:

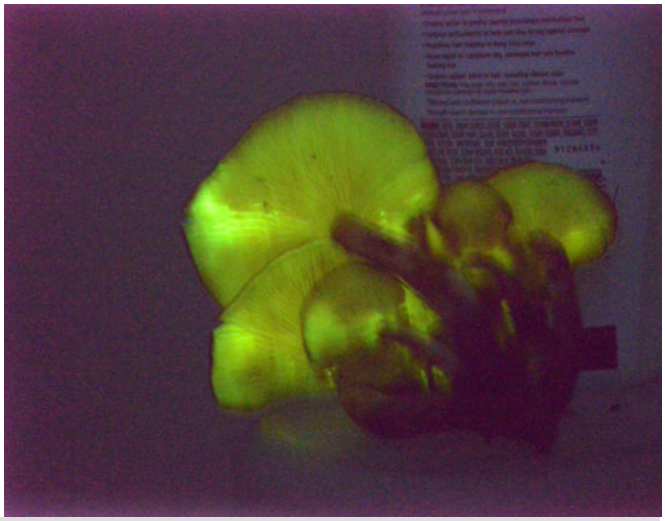
Ash trees that are infested with emerald ash borer (EAB) but not dead yet. If you have ash trees that you will be removing, we would like to coordinate with you to gather the wood from those trees. The wood will be used to monitor for natural enemies and rear adult EAB for research towards improving EAB management.

If you think you might have ash trees that fit the descriptions above please **contact Stokes Aker** at: **saker@umd.edu**

Jack O' Lantern Mushroom

David L. Clement

Just in time for Halloween, I found an interesting orange mushroom this week called the Jack O' Lantern mushroom, *Omphalotus illudens*, also listed in some references as (*O. olearius*). It can be a pathogenic wood decay mushroom on deciduous trees. I have seen it at the base of living oak trees, but it also occurs on old stumps, fallen trees and also in areas where old trees were removed. It is poisonous and typically grows in clusters from July through November. What makes it unique from a biological point of view is that the gills are bioluminescent at night which is sometimes called foxfire. This is due to an enzyme called luciferase, acting upon a compound called luciferin, leading to the emission of light much as fireflies do when glowing. The trait is also shared with several other wood decay mushrooms including *Armillaria* species. Since I was curious, and was determined to see for myself, I sat in a darkened room for a while, and indeed after about 15 minutes, I could make out the faint greenish glow of the gills. Getting the picture is another story, so enjoy this spooky picture of glowing mushrooms during your seasonal celebrations.



In darkened a room, the luminescence of these Jack O' Lantern mushrooms became visible
Photos: David Clement

Citrus Mite

By: Stanton Gill

Citrus plants for growing as patio plants and in containers was a hot item in garden centers in 2020. Many customers purchased Meyer lemon trees, oranges of various cultivars, and kumquat trees. Now the weather is turning cooler, and your customers will be need to move these citrus plants indoors. I have been growing citrus in large 40-gallon pots for years and have seen certain pests build up on citrus including brown soft scale, mealybug, and citrus mite.

I will discuss citrus mite, as a group, in this article. Citrus mites are found across the USA and on just about all citrus plants. Their feeding habits cause defoliation and diminished health and production. There are several species of the pest. Among them are citrus red mites, Texas citrus mites, and rust mites, which are some of the most prevalent. I mainly see the citrus red mite active on most plants here in Maryland.

Damage from mites shows up as leaf stippling and mutilated fruit. Citrus red mites primarily cause fruit damage, while the rust mites are responsible for leaf injury that appears as yellow, necrotic patches or loss of glossy epidermal layers. Citrus mites are small, usually a fraction of a millimeter long. They are found in a range of colors from brown, yellow, rust, and red.

Monitor citrus plants for the citrus red mite
Photo: Lance Osborne, UF/IFAS

One of the things I do every year in early October is to mix up a 1% horticultural oil and use a mist blower to apply the oil to the foliage and stems. You need thorough coverage to make this treatment work. It does an excellent job of reducing the mite population. In years when I have not treated by mid-December, I see many of the leaves on the citrus stippled with heavy leaf drop in January and February.

European Hornets - Very Active This Week

By: Stanton Gill

We have had reports from two wholesale nurseries of the European hornet, *Vespa crabo*, stripping bark off river birch in the nursery rows. Marie Rojas, IPM Scout, called Tuesday to let me know she is also seeing activity in a third nursery this week. Lilac is one of the other plants on which we commonly see this very large wasp stripping bark. The wasp carries the bark back to build their fall nest.

This invasive wasp species was brought into New York back in the 1840s and has managed to spread across the United States. It is one large wasp and is sometimes mistaken for the "Japanese" hornets which is a different species more commonly called the "Asian giant hornet" (*Vespa mandarinia* Smith).

Be very careful around European hornets since they can be very aggressive and give a powerful sting.

European hornets strip bark off of trees such as this Heritage birch late in the season
Photo: Marie Rojas, IPM Scout

Root Girdling on Trees

Todd Armstrong, The Davey Tree Expert Company, sent photos of a Japanese maple with girdling roots in Lutherville. Todd noted that "it seems like this is one of the most common problems of trees in the landscape that are under 20 years old. This tree is in a state of decline."

Girdling roots cause trees to decline over multiple years
Photos: Todd Armstrong, The Davey Tree Expert Company

Boxelder Bugs Moving Inside in October

By: Stanton Gill

With the cool nights showing up in October, boxelder bugs are starting to migrate into houses, barns, sheds, and any other buildings that provide shelter. They are very distinct looking true bugs (Order - Hemipteran). On sunny days, they will migrate back outdoors. Boxelder bugs are black with reddish or orange markings on their back. If you are not certain what a boxelder bug looks like, it has a body shape that is a somewhat-flattened and elongated oval and is about half an inch long.

There is not much your customers can do but use a portable battery operated vac and vacuum them up and flush them down the toilet.

Boxelder bugs move into buildings in the fall and can be a nuisance

Puffball Fungus

Todd Armstrong, The Davey Tree Expert Company, found a large puffball fungus in a lawn in Towson on October 1. Todd noted that "it's almost the size of a basketball". Spores of puffball fungi are produced internally.

This large puffball fungus popped up in a lawn in Towson
Photo: Todd Armstrong, The Davey Tree Expert Company

Praying Mantids

Jim McWilliams, Maxalea, Inc. saw this praying mantid fly and land on a fence gate in Baltimore County. At this time of year, look for female praying mantids laying eggs.

Praying mantids are finishing up their activity for the season
Photo: Jim McWilliams, Maxalea, Inc.

Predators Activity is Evident This Fall

By: Stanton Gill

Steve Clancy, Town Creek Landscape Company, sent in great pictures of boxwoods in early morning. The lower nighttime temperatures resulted in moisture accumulating in the webbing of funnel spiders. The spiders have been active all summer and into this early part of the fall but the early moping dew is highlighting their handiwork. The funnel spider webbing is capturing large quantities of insects and really benefiting the landscape, all for free. Your customers may not fully appreciate this webbing on their boxwoods, but it is a good sign of a healthy landscape. It is also a great early decoration for Halloween.

Morning dew highlights the webs on boxwoods from funnel spiders
Photo: Steve Clancy, Town Creek Landscape Company

For more information, see Paula Shrewsbury's Beneficial of the Week article in the September 25, 2015 IPM Report.

Beneficial of the Week

By: Paula Shrewsbury

Ground beetles provide insect and weed biological control

It is the time of year when I start to see great numbers of ground beetles (family Carabidae) running around landscapes and walkways. In particular I have seen *Scarites subterraneus* (big-headed ground beetle), a mainly carnivorous ground beetle, is active and being found not only in outdoor environments, but also making their way into homes about this time. They are shiny black, about ¾" long, and have large mandibles that look a little intimidating. I have picked up many to bring them back outside and have yet to be pinched. In nature, *S. subterraneus* feed on ground dwelling caterpillars (ex. cutworms, armyworms), wireworms, fly larvae, ants, aphids, snails and slugs.

Big-headed ground beetle (*Scarites subterraneus*) adults feed on a diversity of other insects, snails, and slugs, and some plant material providing biological control services.
Photo: Frank Roylance

Ground beetles are common and abundant in our landscapes and nurseries in addition to many other managed and natural environments. Ground beetles get their name because most species forage and live at the ground level (click here to see video). Although there are a few species, such as the fiery hunter (*Calosoma* sp.), that climb trees and attack caterpillars (click here to see video). They are diverse in their appearance and in the food items on which they feed. There are over 40,000 known species world wide of ground beetles. Some species of ground beetles can be quite small as adults at less than 1/8" in size, and others large at over 1" in size. Most are shiny black or metallic in color and have noticeable ridges or lines on their hard, leathery front wings. Their

feeding habits are diverse. Some species of ground beetles are carnivorous feeding mainly on prey (other insects and mites), and of these many are generalists feeding on a diverse range of prey items. Other species of ground beetles are omnivores, which will feed on both prey and plant material (ex. weed seeds). Some species even partake in pollinivory – feeding on pollen – for nutritional resources. Many omnivorous ground beetles are opportunistic and feed on whatever food item is most abundant, but if there is a choice, they often have a preference. Carnivorous and omnivorous species of ground beetles are predators of caterpillars, grubs, other species of beetles, fly maggots and pupae, aphids, weevils, earthworms, slugs, snails and other soft-bodied creatures hanging around the soil. Many species of ground beetles are granivores, which mainly feed on seeds (often weed seeds) but may also eat insects. *Harpalus pensylvanicus* and *Anisodactylus sanctaecrucis* are two common granivorous ground beetles that occur throughout much of North America. *Anisodactylus* is abundant in the spring and summer; *Harpalus* is active later in the summer and fall. Research has shown that they can be good biological control agents of weeds (ex. lambsquarter, pigweed, foxtail, crabgrass, velvetleaf, and more) (J. Lundgren, 2005. Amer. Entomol).

Harpalus pensylvanicus adults are active in August/September, consume seeds from weed plants, and provide weed biological control. Photo: M. El Damir, BugWood.org

Because ground beetles are good biological control agents of potential pest insects and weeds, and they have diverse diet preferences, a number of studies have examined methods to enhance ground beetle populations by modifying managed environments to be more favorable for ground beetles – an approach referred to as conservation biological control. Studies have shown that installing "beetle banks" (rows of bunch type grasses between crop rows) in agricultural fields enhances populations of ground beetle by providing refuge and overwintering habitat. Production nurseries often install grass allies between plant rows, which should favor ground beetles. We currently have a study examining weed suppression by ground beetles underway in a nursery in Adamstown, MD. Container plant producers can put hard wood mulch over weed cloth beds. Our research has shown that this will increase prey item abundance (ex. collembola breaking down the mulch), provide habitat (nooks and crannies from the mulch) and increase ground beetle activity. It would be hard to go wrong trying to encourage a diverse and abundant population of ground beetles with their potential for providing pest insect and weed suppression. These practices will also increase the abundance and diversity of numerous natural enemies, especially those that are generalist feeders.

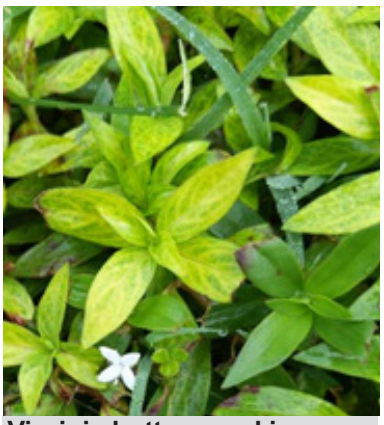
Weed of the Week

By: Chuck Schuster

Over the last several weeks, the soil temperature has continued to bounce around. Current temperatures away from the microclimates of the city are dropping to the low 60 °F range most every day which will promote the germination of many fall germinating weed seeds. Be mindful of timing of pre-emergent applications, as these must be applied and be activated by moisture prior to the actual germination of the seed.

For the last several weeks, I have received several emails on Virginia buttonweed. Virginia buttonweed, *Diodia virginiana,* is a member of the *Rubiaceae* family, and is a difficult to control weed found in turfgrass. It is found typically in the southeast, from New Jersey, west to about the Mississippi River and south Gulf of Mexico. It is a broadleaf plant that is a deep rooted perennial with a spreading growth habit. This plant has leaves that are opposite and without petioles. The leaves are slightly thickened. The margin is slightly roughened. The upper side of the leaf is dark green, and the underside is a lighter green. It often can present with a yellow mosaic

appearance, being caused by a virus that infects the foliage. Stems are branched and will often have hairs. This plant spreads through root, stem, or leaf fragments, and by way of seeds. The flower of this plant is white in color, star-shaped, and often will have a pink streak through it. It prefers moist soils, which in some areas of the region did occur.



Virginia buttonweed is a difficult to control weed found in turf
Photo Courtesy Bob Boyer

Cultural control always starts with a dense turf. Appropriate nutrient use helps to build this turf density. If left unmanaged, this weed can grow dense mats that can smother desired species of turfgrass. Do not mow lawns too low as this will increase fragmentation of the leaves and spreading. Clipping collection is useful to prevent returning leaf fragments to the site. It will not be controlled culturally though. Moisture stress does help but can damage other desired species of turfgrasses. Virginia buttonweed will require herbicide application to manage it. While pre-emergent products may list Virginia buttonweed, the rate of control is ranked as poor. Post-emergent products that include fluroxypyr with 2, 4-D and dicamba (Escalade) will provide good control. Use of Prizefighter can be successful with several applications. Glyphosate can be used on areas where turf is already thin, and then reseed or sod after an appropriate wait period. Be aware that 2, 4-D and dicamba have drift and volatilization related issues. Be mindful of spray pressure and particle size when using these products, as well as current and predicted ambient temperatures. Higher temperatures tend to increase risk.

Plant of the Week

By: Ginny Rosenkranz

Lycoris radiata, also known as the red spider lily, magic lily, rain lily, surprise lily, hurricane lily, resurrection flowers, and naked ladies, is a bulb in the Amaryllidaceae family and is native to Japan. They can grow in full sun or partial shade, but unlike most trees and shrubs, the red spider lily flowers best in patial shade.

***Lycoris radiata* blooms late in the season**
Photos: Ginny Rosenkranz

Cold hardy from USDA zones 6-10, the bulbs should be planted in the fall at least 9 inches apart in clumps of 3-5 and with ¼ inch of the top exposed. If the bulbs are planted too deep, they will not flower. In the late fall, narrow dark green strap-like leaves emerge and stay all winter, slowly fading in the springtime. The plants remain dormant all spring and early summer, but in late summer or early fall, usually after a good rain, the thin green stalks emerge, growing 1-2 feet tall, with an umbel on the top. The umbel has 4-6 bright coral red flowers and each flower has elegantly curled 2-inch long petals and very long stamens which look a bit like spider legs. Shortly after the blooms are finished, the thin green leaves emerge again. All of the common names have something in common with the plants, Red spider lily for the extremly long stamens, magic lily, surprise lily, resurrection flowers for the flowers that bloom long after the leaves emerged and faded away, naked ladies for the lack of leaves when the flowers bloom, and hurricane lily for the time of year when hurricanes are still common when the flowers bloom. The plants will spread slowly creating larger clumps of foliage followed by flowers each year. The bulbs thrive in the ground in the warmer climates in USDA zones above 6 and should be planted in large containers and kept indoors over the winter months. Both late butterfiles and hummingbirds are attracted to the colorful and graceful flowers, but deer ususally leave them alone. No serious pests were listed.

Degree Days (as of September 30)

Aberdeen (KAPG)	3320
Annapolis Naval Academy (KNAK)	3742
Baltimore, MD (KBWI)	3846
Bowie, MD	3922
College Park (KCGS)	3561
Dulles Airport (KIAD)	3658
Frederick (KFDK)	3586
Ft. Belvoir, VA (KDA)	3777
Gaithersburg (KGAI)	3474
Greater Cumberland Reg (KCBE)	3111
Martinsburg, WV (KMRB)	3314
Natl Arboretum/Reagan Natl (KDCA)	4157
Salisbury/Ocean City (KSBY)	3854
St. Mary's City (Patuxent NRB KNHK)	4042
Westminster (KDMW)	3828

Important Note: We are using the Online Phenology and Degree-Day Models site. Use the following information to calculate GDD for your site: Select your location from the map Model Category: All models Select Degree-day calculatorThresholds in: Fahrenheit °F Lower: 50 Upper: 95 Calculation type: simple average/growing dds Start: Jan 1

Late 2020 and 2021 Conferences

There will be a mix of in-person and virtual pesticide recertifications conferences over the winter. We will include information in future reports or send out as a separate email.

Natural Area Management Services Webinar Series

Learn About Expanding Green Industry Services to your Clientele

Are you a Green Industry professional interested in expanding the suite of services to include creating and enhancing natural areas? Perhaps you manage land for an organization, work with volunteers, or are just an interested landowner**?** If so, then this four-part webinar series is for you!

Small-scale natural area management services include: wildlife habitat enhancement, forestry practices, invasive plant control, tree planting, trail development, chosen tree mgt., and more.

A resource manual & specialized checklist tool have been developed to complement the training and help Green Industry professionals determine which enhancement practices are suitable for a given property/site. Join us for this webinar series to increase your knowledge and skills useful for providing additional services to clientele.

When:

- **Webinar 1 - Expanding Your Business: Land Care Practices on Small-Acreage Properties -** Thursday, October 22, 2020
- **Webinar 2 - Land Care Practices for Woodland Health-**Thursday, October 29, 2020
- **Webinar 3 - Land Care Practices for Woodland Health Continued-Thursday-** November 5, 2020
- **Webinar 4 - Introduction to Woodland Health Assessment & Incorporating Woodland Health Practices -**Thursday, November 12, 2020

Time: Thursday evenings from 7:00 – 8:30 p.m.

Registration Information: https://go.umd.edu/NaturalAreasServices

Registration Materials & Cost: $35.00. Includes Woodland Health Practices Handbook, Woodland Health Assessment Checklist and Management Actions, and two Woody Plant Identification Guides (Common Native Trees of Virginia Identification Guide and Common Native Shrubs and Woody Vines of Virginia Identification Guide)
Note: For an additional $20 ($55.00 total) participants can also receive a copy of the original Woods in Your Backyard book (regular cost $29 + shipping).

The Woods in Your Backyard Partnership: includes the University of Maryland Extension, Penn State Extension, Virginia Cooperative Extension, Alliance for the Chesapeake Bay, and Virginia Dept. of Forestry

IPMnet
Integrated Pest Management for Commercial Horticulture

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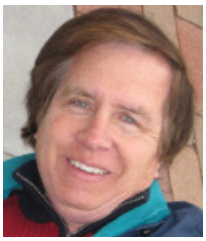

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Photos are by Suzanne Klick or Stanton Gill unless stated otherwise.

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