UNIVERSITY OF MARYLAND EXTENSION

TPM/IPM Weekly Report

for Arborists, Landscape Managers & Nursery Managers

Commercial Horticulture — March 29, 2019

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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 sklick@umd.edu

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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), David Clement (Extension Specialist), and Joe Roberts (Plant Pathologist for Turf)
Weed of the Week: Chuck Schuster (Extension Educator, Montgomery County)
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)

2019 – Let's Go

By: Stanton Gill

It seemed like winter just was not ending. The rains continued and we are up by over 10" in 2019, so far. When the rains finally subsided, we had reports from nursery owners of traffic jams at their operations as landscapers, eager to get their plants, showed up in swarms. The demand for landscape plant material appears to be very strong in 2019. I am seeing strong optimism in greenhouse businesses in Maryland. Everyone is planning on strong spring sales. Now, if the rain will just hold off for the weekends for plant sales in April and early May. We can always hope for the best.

Forsythias are now bloomimg
Photo: Heather Zindash

Meanwhile – Let's get going!
We are setting up a new western Maryland Pesticide Re-certification session in Cumberland on April 18th. We are trying to reach the growing industry in the western part of Maryland.

There are two other programs coming in 2019.

The Pest Diagnostic Clinic for Arborists will be in the evening of May 22 at the Woodmont Country Club in Rockville. When availabe, the schedule and registration information will be posted on the Maryland Arborist Association (MAA) website.

There will be an all day session on herbaceous perennials on July 25, 2019 at The Perennial Farm in Glen Arm, MD. We will cover diseases, insects, mites, and nutrient monitoring with hands-on sessions. We will also have VA Tech do a section on Plant Growth Regulator use on herbaceous perennials. A session on using drones in herbaceous perennial monitoring will be covered. MNLGA will publish the schedule and registration information later in the spring.

Boxwood Blight Stays on the Radar

By: Karen Rane

Fungicides can protect healthy boxwoods from infection, but fungicides alone won't cure plants with the disease. Photo: Mark Schlossberg, ProLawn Plus. Inc.

Last year's rainy, mild weather encouraged outbreaks of boxwood blight throughout the Mid-Atlantic region. The fallen, infected leaves and stem cankers generated last year means that there is a large amount of inoculum ready to cause infection this year. And don't be fooled into thinking our winter weather kills this fungus – the microsclerotia formed in infected leaves allow the pathogen to survive adverse environmental conditions from year to year. I've already received 10 positive boxwood blight samples in the UMD Plant Diagnostic Lab since December 1, and all of them showed active spore production within a few days of moist incubation. Sanitation is critical for managing this disease. As landscapers, it's important to know which of your clients' properties contain boxwoods, and which of those are confirmed with the disease – this will aid in helping devise schedules to visit infected properties after healthy properties and minimize spreading the disease. Remember, fungicides can protect healthy boxwoods from infection, but fungicides alone won't cure plants with the disease. For more best management practices check out the Virginia Boxwood Blight Task Force website (https://ext.vt.edu/agriculture/commercial-horticulture/boxwood-blight.html)

Sapsucker Damage

By: Stanton Gill

Dan Turner, Patuxent Valley Nursery, reported he found a solution to sapsucker damage on woody plants. Dan read an article published by Jim Resch in which Resch mentions that sapsuckers do not bother holly trees with snakes present. Birds do not like snake very much. Using this knowledge, Dan has stapled rubber snakes to valuable trees in his nursery. He found a source on the web selling rubbers snakes 12 for $15. He says it appears to be working in keeping sapsuckers from damaging his trees which were heavily damage in previous seasons. Let me know if you try this method out and whether you are getting similar results as Dan Turner.

How Did This Winter Stack up?

By: Stanton Gill

On January 30th of 2019, a Polar Express of cold hit the Midwest with temperatures dropping to -17 °F and wind chill at -60 °F. Here in Maryland, temperatures plunged rapidly to the teens on January 30. Winds of 50 miles per hour moved in with more cooling weather. On January 31, we woke up to temperatures of – 3 °F which was followed by a warm-up on the weekend of temperatures up to 48 °F . This weather has to affect trees. The sudden drop and sudden swing back up damages plant tissue.

The impact of this winter has shown up on evergreen magnolias and on some broadleaf evergreens so far. Much of the winter damage does not show up until later in the spring. If you see any injury you suspect is caused by winter injury, send along some pictures to Sgill@umd.edu.

Salt damage will show up on plants as we move through spring
Photo: Mark Schlossberg, ProLawn Plus, Inc

Frost Cracks on Trees

A nursery sent in these pictures of trunk frost cracking on two species of crabapples. Cracking was on the south sides of the trees.

Spotted Lanternfly

By: Stanton Gill

If you do business in any of the quarantined counties of Pennsylvania, you need to take the online Penn State Extension permit exam. The PA Depart of Agriculture will issue you vehicle permits.

Info about the permit:
https://www.agriculture.pa.gov/Plants_Land_Water/PlantIndustry/Entomology/spotted_lanternfly/quarantine/Pages/default.aspx

Testing for the permit:
https://extension.psu.edu/spotted-lanternfly-permit-training

Don't worry, you are not alone in taking the exam. Since Brian Kunkel, University of Delaware and I will be conducting spotted lanternfly trial's in a nursery in PA, I took the exam on March 20, 2019 and obtained my permits.

NOTE: New Jersey and Delaware have also issued SLF quarantines and require permits.

Box Tree/Boxwood Moth

Last summer, we reported that on August 28th a box tree moth was found outside of Ontario, Canada. Since then, the Agriculture Ministry in Ontario has reported several findings of the larva and moth in various parts of Ontario.

If you receive plant material from Canada, be sure to inspect it closely for the presence of the larvae. If you see suspicious caterpillar activity on boxwood, contact us at CMREC or MDA.

Beneficial of the Week

By: Paula Shrewsbury

Are birds major predators of insects?

We are early in the season and insects are starting to become more active. Although I have seen a few arthropod predators this season (ex. tiger beetles, spiders) I would like to start the season by discussing a non-invertebrate group of insect predators – BIRDS.

Bluebird with a caterpillar in its beak.
Photo: Mike Onyon, Science News

Birds eat between 400 – 500 million tons of insects a year! In general, birds are voracious predators of many insects, spiders, and other arthropods. From a pest management perspective this means that birds provide biological control of insects. Birds are usually classified as insectivorous (insect eaters), frugivorous (fruit eaters), granivorous (nut / seed eaters), and/or nectarivorous (nectar feeders). However, bird diets can be more diverse where some birds eat other birds, eggs, small mammals, fish, aquatic invertebrates or vegetation, dead animals, garbage and more.

The type of insects a bird feeds on depends on the nutritional attributes of the insect prey (ex. moisture content, carotenoid levels), the habitat type it lives in, the time of year, and the needs of the bird. For example, birds that do not migrate will eat fruits and seeds in the cold months when insects are sparse. Breeding birds, even those that are usually non-insectivorous, actively hunt insects to feed their young which need this protein rich prey. A recent robust study (Nyffeler et al. 2018) of different biomes (ecological zones) around the world found that forest dwelling birds consume about 75% (300 million tons) of insects annually, whereas birds in other biomes (savannas, grasslands, agriculture, deserts, etc.) collectively consume the other 25% (100 million tons). Some birds mainly forage on the ground or in leaf litter and feed on earthworms, spiders, and insects, others catch flying insects, while others forage on the foliage or bark of plants for insect food. Some birds, more generalists, will forage in all these habitats. For example, robins forage on earthworms and ground insects. Caterpillars on the foliage of vegetation are a favorite food of many birds such as tanagers, grosbeaks, and warblers. Swallows, swifts, flycatchers, some warblers and waxwings will pick off insects flying in the air. Humming birds, chickadees, and finches forage on aphids or other tiny crawling insects on foliage or flowers. Woodpeckers are dominant predators of wood boring insects (ex. emerald ash borer).

Chickadee eating a caterpillar
Photo: D. Tallamy, UDel

With all that is known about bird diets there are still many unanswered questions. Ongoing research by Ashley Kennedy and Doug Tallamy (University of Delaware) are conducting experiments and surveys to better identify diets of specific bird species in North America. For example, some of their findings on bluebirds is quite interesting (https://youtu.be/shVA_OHOsbg). Bluebirds forage on insects from vegetation and the ground. Their diet consists of 42% caterpillars, with a preference for smooth green caterpillars, 22% orthopterens (grasshoppers, field crickets, katydids), and 14% spiders (wolf, orb weavers, crab and jumping spiders). Likely explanations for this choice in diet are to meet their nutritional needs. Caterpillars have high fat and low chitin content which make them easier to consume.

Caterpillars and orthopterans have high carotenoid levels which boost immune system and vision, and give brighter plumage for mate attraction. Caterpillars and spiders have high moisture content and lots of crude protein. Kennedy and Tallamy infer that understanding the diet of a particular bird species will help in conservation efforts for birds. Since many insects are host specialists to some level (ex. orange striped oakworm feeds on oaks) by knowing what insects a bird species feeds on, recommendations can be made as to what plant species to include in your landscape to provide food towards the conservation of birds.

Birds are significant predators of beetles, caterpillars, flies, ants, aphids, grasshoppers, crickets and other arthropods. They play an important economic and ecological role in pest management. Birds are excellent biological control agents.

References:

What do bluebirds eat? A. Kennedy and D. Tallamy, University of Deleware. https://youtu.be/shVA_OHOsbg
What do birds eat? Help us find out! A. Kennedy, University of Delaware, http://rockies.audubon.org/get-involved/what-do-birds-eat-help-us-find-out
Nyffeler, Sekercioglu and Whelan. The Science of Nature, 2018; 105 (7-8) DOI: 10.1007/s00114-018-1571-z

Weed of the Week

By: Chuck Schuster, UME

Spring is upon us in some areas. Trees and shrubs are starting to pop with early buds and in some areas blooms are visible. As we move a few miles from the more developed areas, plants are not as far along though. Soil temperatures vary greatly, much dependent on the location. Even day to day temperatures at 2 inches of depth can vary dependent on the amount of sun shining, or if it has been windy or raining. A great deal of interest is always shared this time of year as to when the need to place certain pre-emergent products down to make sure the weeds do not get started. For crabgrass, we are not close to those mid 50 °F temperatures yet. Other less than desired plant material though is being noticed now.

Many weeds are already showing up in lawns, landscapes, and along southern exposed road areas. Three that I have noticed lately are purple deadnettle, common chickweed, and henbit. I have seen purple deadnettle, *Lamium purpureum*, in recent weeks in landscapes and mixed in areas of turf that are not often managed. It is similar to henbit and proper IPM calls for good identification. I have also been asked to help identify this plant by several individuals that thought it was henbit. The name deadnettle comes from the fact that it will not sting you as opposed to stinging nettle, *Urtica*, which will. The two plants are not closely related, but they do look similar. *Urtica* is that formic-acid wielding that zaps you with little stingers. Purple deadnettle can be eaten.

Purple deadnettle is in bloom currently (Photo D) in many landscapes and lawns. In many areas, cool season turf has yet to really show any signs of growing, thus allowing this weed to be noticed. Using the photos below, Photos B, C, and D, are examples of purple deadnettle. It is a commonly fall germinating, winter annual in the mint family. Henbit shown in photo A, is also a fall germinating weed that can be found in turfgrass and landscape settings throughout the United States. Purple deadnettle has square hollow stems (photos E and F), no basal leaves, and the leaves are on a short petiole (photo C), which distinguishes it from henbit, whose upper leaves are sessile or attached to the stem itself. Petiole length of the lower leaves will be longer than that of the upper leaves. The leaves of purple deadnettle are opposite, slightly pubescent (occurring with hairs), triangular to round in shape with a toothed margin, but are less deeply lobed than henbit. Uppermost leaves can be triangular in shape. Leaf color will be dark green, with the upper leaves becoming purple or red. The stems are square in shape and can grow up to sixteen inches in height branching from the base of the plant.

Purple flowers occur in whirls of three to six in the upper leaves. The root system is fine and fibrous. The plant produces a small berry about two mm in diameter. Purple deadnettle spreads by seed. It is an early spring pollen source for pollinators.

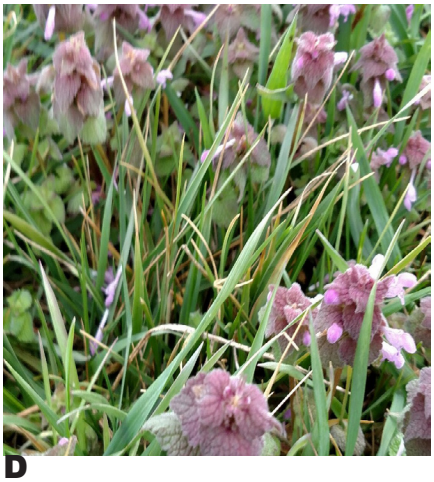
Cultural control of purple deadnettle includes proper use of fertilizers to build a strong turf, aeration of the soil to prevent compaction, and in most cases use of mulch to act as a weed barrier to prevent light from reaching the soil for germination. Fertilization in turf is always governed by the current regulations, soil tests, and the UME recommendations coming from many years of research. It is an easy weed to pull and is not a difficult weed to control in most settings. Soil disturbance in the fall will help this weed germinate, and monitoring at this time can help with removal.

Control of purple deadnettle can be started in the fall. Remember that a proper soil fertility program builds a strong and dense turf. Attempting to decrease soil disturbance can be difficult when core aeration is considered. Preventing it from being noticed in the spring starts with potential use of pre-emergent products. IF the opportunity is missed, or in the case of our fall of 2018 being so wet, the plant may be noticed in the early spring, but can be controlled utilizing post emergent products that will include using organic products pelargonic acid (Scythe), and synthetic products including Imazaquin (Image) and Metribuzin (Sencor) turf only, and 2,4 D + MCPP.

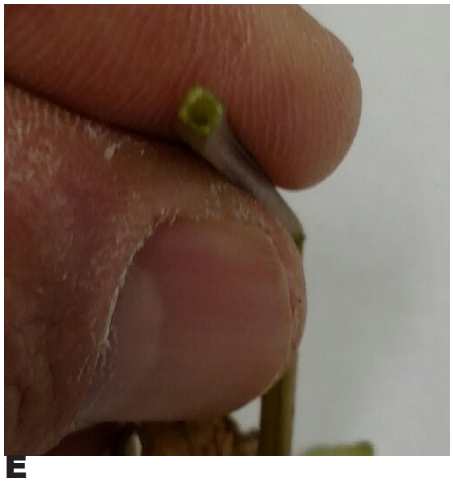
A

B

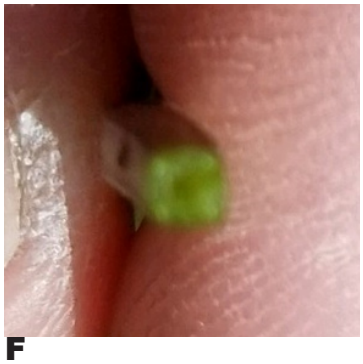
C



D



E



F

Photos: Chuck Schuster, UME

Plant of the Week

By: Ginny Rosenkranz, UME

Acer rubrum, American swamp maple or American red maple, is a native tree of eastern and central North America. It is one of the first trees to flower in the spring, with male flowers producing long stamens that extend beyond the petals and are covered with bright yellow pollen, and female flowers with a stigma that extends beyond the petals to catch the pollen. Red maple flowers have short petals while silver maple, *Acer saccharinum*, has only, bracts. The red flowers develop into red double samaras or winged seeds that spin in circles when they drop off the trees in late spring before the leaves fully develop. The leaves are toothed and palmately lobed which means they are shaped like a hand with the 5 lobes extending like fingers from our palm. In the spring, the leaves are tinged with red which quickly develops into a dark green above and light green or gray green on the underside of the leaf. The fall color of the species *Acer rubrum* varies from plant to plant, presenting many shades of red and orange red from soft to brilliant. The true bright red to orange red color is available in many of the

***Acer rubrum* is a very early flowering tree**
Photo: Ginny Rosenkranz, UME

cultivars including ‘Autumn Blaze’, ‘Autumn Flame’, ‘Brandywine’ (good resistance to potato leafhopper), ‘October Glory’ and ‘Red Sunset’. The bark is a smooth light gray on young trees, and darker gray, rough and ridged when older. Red maples prefer full sun to part shade and average to wet, well drained, slightly acidic soils. Trees grow 40-60 feet tall and wide and are hardy to USDA zone 3b. The crown of the tree is round to oval when mature and pyramidal when young. *Acer rubrum* is one of the fastest growing maples with strong wood structure and is tolerant of urban pollution making it a good choice for shade, street, or even rain garden trees. Potato leafhoppers can cause serious damage. Other pests can include borers, scale, verticillium wilt, canker, and fungal leaf spots.

Degree Days (as of March 27)

Aberdeen, MD (KAPG)	21
Annapolis Naval Academy (KNAK)	50
Baltimore, MD (KBWI)	33
College Park (KCGS)	35
Dulles Airport (KIAD)	33
Frederick (KFDK)	25
Ft. Belvoir, VA (KDA)	45
Gaithersburg (KGAI)	32
Greater Cumberland Reg (KCBE)	15
Martinsburg, WV (KMRB)	23
Natl Arboretum.Reagan Natl (KDCA)	57
Salisbury/Ocean City (KSBY)	44
St. Mary’s City (Patuxent NRB KNHK)	70
Westminster (KDMW)	28

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 mapModel Category: All models Select Degree-day calculatorThresholds in: Fahrenheit °F Lower: 50 Upper: 95Calculation type: simple average/growing dds Start: Jan 1

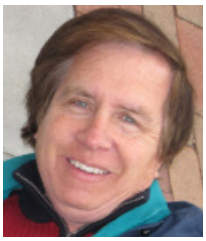
CONFERENCES

Maryland Pesticide Re-certification Session
April 18, 2019
Location: Cumberland, MD

Pest Diagnostic Clinic for Arborists
May 22, 2019
Location: Woodmont Country Club in Rockville
When availabe, the schedule and registration information will be posted on the Maryland Arborist Association (MAA) website.

All Day Session on Herbaceous Perennials
July 25, 2019
Location: The Perennial Farm in Glen Arm, MD.

CONTRIBUTORS:



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Endnotes

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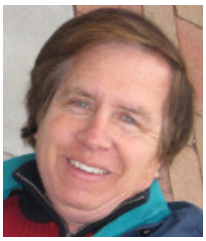

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