UNIVERSITY OF MARYLAND EXTENSION

TPM/IPM Weekly Report

for Arborists, Landscape Managers & Nursery Managers

Commercial Horticulture — July 19, 2019

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Pest Predictive Calendar

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) and David Clement (Extension Specialist)
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)

River Birch Dropping Foliage

By: Stanton Gill

Birch trees are showing stress during these periods of high temperatures

We have received emails from landscape managers and nursery managers inquiring about why river birches are having yellow foliage and dropping leaves in July. The spring was wet and cool and ideal for flushing out a lot of growth on birch trees. When the temperatures started soaring higher, the birches responded by dropping a lot of leaves. In nurseries, if you let a ball and burlapped or container plant dry out for just a day or so, the leaf drop is very heavy. The trees will survive - just keep them watered if in dry growing areas.

HIgh Tempertures This Week

By: Stanton Gill

The high 90 °F temperatures this weeks are stressing the heck out of plants. Expect to see plants with root or trunk injury to show dieback and leaf scorhing over the next 2 weeks. This is the time of the year when we see rapid failure of trees that have been on the edge for the last couple of months. It will look like a sudden dieback, but it just the high temps kicking it over the edge.

Caterpillar Reports

Reports of caterpillar activity continues this week:

Yellownecked Caterpillars:
Marie Rojas, IPM Scout, is finding yellownecked caterpillars in Frederick County. Marie noted that early instars were feeding heavily on *Quercus macrocarpa*, and late instars were on *Prunus subhirtella* 'Pendula', *Fagus grandiflora*, and *Tilia americana*.

Yellownecked caterpillars are devouring this oak leaf
Photo: Marie Rojas, IPM Scout

Catalpa Sphinx Moth Caterpillars:
Marie is also finding catalpa sphinx moth caterpillars with high parasitism on catalpa trees.

Check catalpa sphinx moth caterpillars for parasitism by braconid wasps
Photo: Marie Rojas, IPM Scout

Orange-tipped Oakworm Moth:
Last week, we reported that orangestriped oakworms were being reported in the area. Jay Nixon, American Pest, sent in a photo of the adult which is called the orange-tipped oakworm moth. He found it in Fulton on July 6. The caterpillars will continue to be active throughout the summer.

Caterpillar Control: It is best to treat when caterpillars are in the early instar stages. Bt, Spinosad, Acelepryn, or Mainspring can be used for control.

Orange-tipped oakworm moths are flying now
Photo: Jay Nixon, American Pest

Fall Webworms:
The second generation of fall webworms is now active. Marie found early instar caterpillars on *Tilia americana*. Fall webworms feed on a wide range of woody plants. They feed within the webbing.
Control: If possible, prune out webbed terminals. Bt, horticultural oil, or insecticidal soap can be used for early instars. Other control options include spinosad (Conserve), Acelepryn, and Mainspring (from Syngenta Company). There are many predators and parasites that help keep this native pest below damaging levels.

As the second generation of fall webworms gets started, old webbing from the first generation may still be present on plants. Jacob Winn, Bartlett Tree Experts, found this old webbing on a cherry laurel in Herndon VA. He noted that he simply prunes the webbing out.
Photo: Jacob Winn, Bartlett Tree Experts

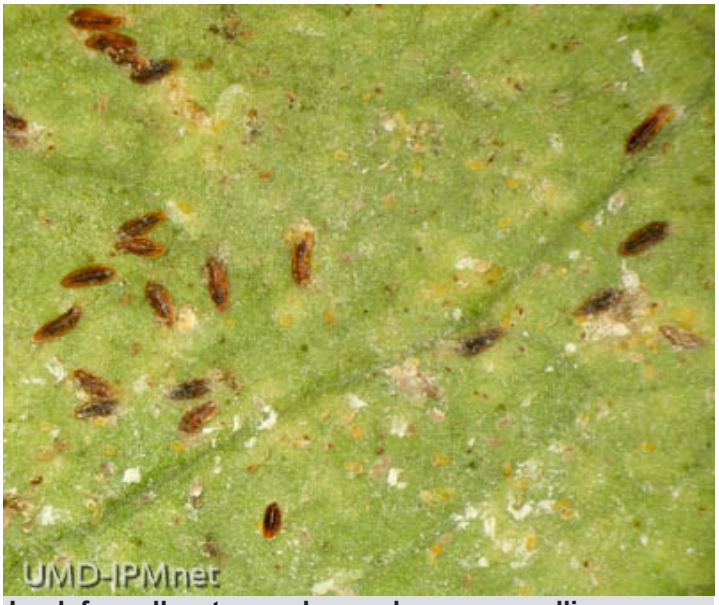
Tea Scale on Camellia

By: Stanton Gill

With the increased planting of camellias in nurseries and in the landscape, I am seeing an up-tick in tea scale populations. This armored scale is mainly a problem in the south on holly and camellia. With all of the north bound shipping, this scale is becoming established on plants in Maryland. The scale is on the undersides of foliage making detection of the scale cover difficult.

When they feed on camellia foliage, a yellow stippling spot is seen on the upper leaf surface. You generally have to flip the foliage over and look with a hand magnifier to see the scale covers. We obtained some infested plants that were shipped to Maryland in May and are checking for crawler periods at CMREC. When I left for Ohio on Sunday, July 14, it was mainly 3rd instar females present. The high temperatures moved them along in development pretty quickly. By July 18, we had crawlers and settled 1st instars on the plants. If crawlers are present, now would be a good time to apply either Distance or Talus insect growth regulators to control this scale.

If you see stippling on the top side of camellia foliage, check the undersides of the leaves for tea scale



Look for yellow tea scale crawlers on camellias

Main Peachtree Borer

By: Stanton Gill

The counts are still up this week for the main peachtree borer male flight activity. In the last IPM alert, I mentioned using Bifenthrin (Onyx). While I was speaking at the Culitvate 19 conference in Ohio, an FMC sales rep reminded me the name is now Onyx Pro.

Japanese Maple Scale – 2nd Generation

By: Stanton Gill

With the heat this week, several areas have reached at least 2000 to a little over 2400 degree days. The 2nd generation of Japanese maple scale should be coming on at around 2500 degree days - continue monitoring over the next week or two. Japanese maple scale is one of the worst scale insects that nursery managers and landscape managers need to manage. It has a very elongated crawler period time that can go 7 – 8 weeks for the second generation. We will talk more about control options in upcoming IPM Alerts when the crawlers start to emerge.

Ambrosia Beetle Activity

By: Stanton Gill

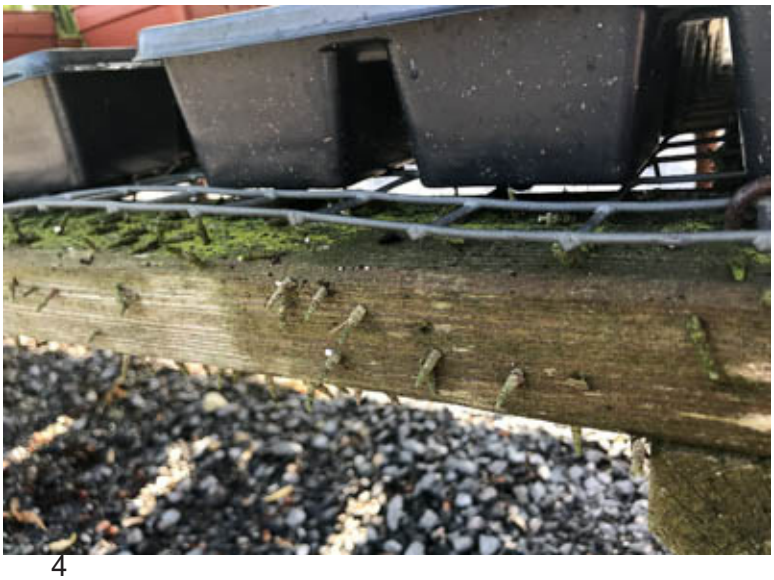
Andrew Ristvey sent in this photo from a tree planted in the Wye area of Maryland. It had active ambrosia beetle activity with fresh frass being pushed out this week. This activitiy is the 2nd generation of *Xylosandrus* activity showing up on the Eastern Shore.

The second generation of ambrosia beetles is active on this silk tree
Photo: Andrew Ristvey

Unusual Caterpillars in Greenhouse Operation

By: Stanton Gill

Joanne Lutz, Griffen Greenhouse Supplies, sent in a photo of moth larvae that moved onto a greenhouse bench. We have seen the caterpillar of this moth over the years, but usually on the trunks of trees. It is *Zamopsyche commentella*. The larvae surrounds itself with a woody casing it scrapes from the bark of plants. The larvae appear to be feeding on algae and lichen. It is a harmless insect and just one of the curious creatures of summer.



It's unusual to find *Zamopsyche commentella* caterpillars in greenhouses
Photo: Joanne Lutz, Griffen Greenhouse Supplies

Portable Small Electric Shears

By: Stanton Gill

While I was speaking at Cultivate 19 in Ohio, I cruised around the trade show floor. What caught my eye was a small battery operated pruning shear. I know they have had larger versions of this with a battery backpack on the market for the past several years. Now companies are moving into small hand held shears with a small battery built into the handle. I inspected it and the blades appear to be of fairly high quality. It cut through twigs up to ¾" for the model I examined. The weight and handle design was very comfortable, and the shears should work well in the field. The problem I see is it is too large to fit in a waist holder when not in use in the field. It does come with two batteries that are rechargeable. The one I saw is probably just the tip of the iceberg of what is coming into the marketplace. I suspect many of the companies making hand shears will be offering rechargeable, battery operated hand shears very soon.

Electric pruning shears were shown at the trade show at Cultivate19

A Stag Beetle

Ron Muir, Jr., FirstEnergy Service Company, found this stag beetle on his porch on July 19. Paula Shrewsbury notes that it is most likely *Lucanus capreolus* (reddish-brown stag beetle). It is also referred to as a pinching beetle. The larvae feed on decaying/decomposing wood (logs, tree stumps). Some more general information at: https://en.wikipedia.org/wiki/Lucanus_capreolus.

To get an idea of the size of this stag beetle, note that the "AUB" on the key chain is 3 cm
Photo: Ron Muir, FirstEnergy Service Company

Red-legged Buprestis

David Driver, Arbor-X, found red-legged Buprestis beetles, *Buprestis rufipes*, on the bark of recently dead American beech trees. He noted that the trees were dead/dying from being flooded for several years.

This bright green and gold red-legged Buprestis beetle was found on American beech
Photo: David Driver, Arbor-X

Dogwood Sawfly

Jacob Hartenstein, Brightview, found dogwood sawfly larvae on gray twig dogwoods in Fulton. Dogwood sawfly will eat all but the midrib of the leaf. These sawflies overwinter in the last instar stage. After the second molt, the bodies of the larvae become covered with a white powder-like material to mimic bird droppings which helps to protect them from their enemies. At their final molt they have a spotted pattern to camouflage them as they crawl over leaf litter. There is only one generation per year.
Control: Options include Conserve and synthetic pyrethroids.

During this stage, dogwood sawfly larvae resemble bird droppings
Photo: Jacob Hartenstein, Brightview

Redheaded Pine Sawflies

Last week, redheaded pine sawflies were reported on cedar. This week, Elaine Menegon, Good's Tree and Lawn Care found them on mugo pines in Harrisburg PA on July 19.
Control: For isolated trees, prune out branches where sawflies are aggregated. If numerous trees are infested, treat with Conserve or a synthetic pyrethroid.

Redheaded pine sawfly is a native sawfly with two generations per year in our area
Photo: Elaine Menegon, Good's Tree and Lawn Care

Beneficial of the Week

By: Paula Shrewsbury

A promising new warrior in the fight against Emerald ash borer!

As many of you have noticed and been affected by, in several counties in Maryland (and about 35 other U.S. states) it seems like emerald ash borer (EAB), *Agrilis planipennis*, is moving through like a fire leaving thousands of dead or soon to be dead ash trees behind! As most of you know, EAB is an exotic (native to Asia) and invasive flat-headed beetle that has killed millions of ash trees and cost municipalities and states extraordinary amounts of money since it was first detected in the U.S. in 2002. Such a little beetle and so much devastation!

Like many invasive insects, EAB did not come to the U.S. with any of the natural enemies that attack and suppress EAB in its native range. Therefore, USDA scientists have gone to Asia and brought back multiple parasitoid species (very tiny wasps) that attack EAB in Asia. After extensive studies in quarantine by USDA,

four species of have been released in several states that have EAB. In MD, the Maryland Department of Agriculture (MDA) in collaboration with USDA APHIS, ARS and UMD has been releasing parasitoids since 2009. The Shrewsbury and Gruner labs (UMD), in collaboration with USDA ARS (DE) have been conducting research to evaluate the establishment, dispersal, and impact of these introduced natural enemies on EAB populations. We are also monitoring the native (to the U.S.) natural enemies that attack EAB.

A *Spathius galinae* parasitic wasp adult. Note the long ovipositor for inserting through the bark of large ash trees to reach EAB larvae.
Photo: Jian Duan, USDA ARS

Between 2007 and 2012, 3 parasitoid species were released, *Tetrastichus planipennisi*, *Spathius agrili*, (both attack EAB larvae) and *Oobius agrili* (attacks EAB eggs). Research results show that *T. planipennisi* provided the greatest rates of biological control, however, these were still low. One reason for this result is that *T. plannipennisi*'s ovipositor is too short to get through the bark of larger trees (bark thicker than 3.5 mm) to reach the EAB larvae under the bark.

This point is where *Spathius galinae* (Hymenoptera: Braconidae) comes into the battle. Also a larval parasitoid, *S. galinae*, has an ovipositor that is twice as long as *T. planipennisi*, and should be able to attack EAB in much larger trees. Other advantages of *S. galinae* include that they produce female dominant populations and more generations per year.

Several *Spathius galinae* larvae feed from the outside on an EAB larvae resulting in death of the larvae. Here you see the cocoons of *S. galinae* with EAB in its gallery. This would be found under the bark.
Photo: Jian Duan, USDA ARS

Spathius galinae was first released in 2016 in CT, MA, and NY (with one small release in MD in 2016). Results of studies from these releases (by J. Duan and colleagues, Journal of Economic Entomology 2019) found that by 2018, *S. galinae* is parasitizing EAB larvae at higher rates than the other parasitoids with rates of 33-49% at 2 sites, 13-15 % at 2 other sites, and remained low (<1.5%) at 2 other sites. In comparison, *T. planipennisi* never reached about 6% at any of the sites. In MD, one year following the release of *S. galinae* it was recovered suggesting *S. galinae* can survive a MD winter. Future efforts in MD involve a collaborative effort (UMD, MDA, USDA) that will include additional releases of *S. galinae* and assessment of its impact on EAB.

Although there are still questions to answer about *S. galinae* (ex. dispersal and establishment rates, cold tolerance), this wasp appears to be a promising new warrior in the fight against EAB!

Weed of the Week

By: Chuck Schuster, UME

It's hot outside. Keep that in mind when considering applying herbicides. Is the plant you are treating actively growing or has it slowed down or potentially gone dormant for a short period of time? Turfgrass has slowed down in its growth. It is the time for some of the summer weeds to really take off and many have. Crabgrass where not treated is now growing aggressively.

Ground ivy has creeping stems that root at the nodes
Photo: Chuck Schuster

A persistent weed, which is difficult to control, is stumping some turf managers. This weed is ground ivy, *Glechoma microcarpa*. It is also often called creeping charlie. It is a cool season perennial, a member of the mint family, and is found throughout the northeast and southern United States. A desired plant by some as it can be consumed, it is disliked by others. It is consumed by some because of its claimed medicinal properties of which I cannot confirm or deny. Ground ivy is found commonly in both turf and landscape settings. This weed has creeping stems that root at the nodes and are square (mint family) and mostly without pubescence (hair). It will have a diffuse root system. Flowers are found in clusters of 3 in the area between the stem and the leaf axils. They are funnel-shaped, lavender and bloom in early spring. Leaves are nearly round, toothed, and found on long petioles. When mowed, the plant emits a mint-like odor. This plant was brought to the United States from Europe for it medicinal purposes and has also been used in the making of beer.

Ground ivy emits a mint-like odor when mowed
Photo: Chuck Schuster

Cultural control of this weed in turf can be accomplished by maintaining a dense turf through a properly selected mowing height and proper fertilization based upon proper pH and research based nutrient use. In landscapes, it can be pulled, but this method is often less than successful. Mowing height can influence this plant greatly. Keeping it shaded slows its progression down. This weed will thrive under short turf mowing heights. Chemical control of this weed can be accomplished using post emergence products in spring or in fall when the plant is actively growing. Products labeled for this plant include *Broadleaf* weed control chemicals for turf. Products containing Triclopyr, 2,4-D, dicamba and fluroxypyr have been shown to have the best results. Several of these products need to be reviewed carefully as they have drift and volatilization related issues. Labels need to be reviewed carefully for proper rates, pressures, and carrier volume. Failure to follow directions can lead to poor control, and potential of off target movement of these chemicals which can cause damage to desired species of plants or crops. Pre-emergence products do not control creeping charlie.

Plant of the Week

By: Ginny Rosenkranz, UME

At the MNLGA Field Day at the Perennial Farm, there were some examples of the new Pugster®buddleia by Proven Winners. Pugster Periwinkle®Buddleia x 'SMNBDO' USPP, was on display with a number of other beautiful herbaceous perennials that Dr. Allan Armitage wanted to highlight. Dr. Armitage thought that the Pugster® butterfly bush varieties were some of the best – so far- of the compact dwarf butterfly bushes, being compact in growth and very cold hardy. Pugster Periwinkle® grows only 2 feet tall and 2-3 feet wide with very sturdy stems capable of holding the huge flower heads that that the Pugster® butterfly bushes produce. Like all the buddleia family, Pugster® plants grow best in full sun in USDA zones 5-9 and prefer moist but well drained soils. The bright purple flowers are borne on dense clusters 3-4 inches round and almost 8 inches long. The flowers are very fragrant and attract a number of colorful pollinators including butterflies, hummingbirds and bees. They are also noted for being resistant to both rabbits and deer. These lovely flowering plants will provide

color all summer into the first hard frost, blooming on new growth each year. The plants are heat loving and once established, very drought tolerant, and bloom through the hottest part of the summer providing nectar for all of the pollinators. There are more Pugster® plants besides the Pugster Periwinkle®. There are also Pugster Amethyst®, Pugster Blue®, Pugster Pink® and Pugster White®. These colorful compact dwarf butterfly bushes can be grown as a low colorful hedge, a container plant, as a specimen and as a groundcover. They are excellent as an edging plant as well. Some occasional pests include spider mites, aphids, and the checkerspot caterpillar.

These compact Pugster buddleia can be used as a container plant, specimen, or groundcover.
Photos: Ginny Rosenkranz

Pest Predictive Calendar "Predictions"

By: Nancy Harding and Paula Shrewsbury

In the Maryland area, the accumulated growing degree days (DD) this week range from about 1774 DD (Cumberland) to 2452 DD (Annapolis Naval Academy). The Pest Predictive Calendar tells us when susceptible stages of pest insects are active based on their DD. Therefore, this week you should be monitoring for the following pests:

- White prunicola scale (2nd generation) crawlers
- Orangestriped oakworm egg hatch/early instar
- Maskell scale (2nd generation) crawlers
- Euonymus scale (2nd generation) crawlers
- Japanese maple scale (2nd generation) crawlers
- Fall webworm (2nd generation) early to late instars

See the Pest Predictive Calendar for more information on DD and plant phenological indicators (PPI) to help you better monitor and manage these pests.

Degree Days (as of July 17)

Abingdon (C1620)	1996
Annapolis Naval Academy (KNAK)	2452
Baltimore, MD (KBWI)	2197
College Park (KCGS)	2029
Dulles Airport (KIAD)	2092
Frederick (KFDK)	2103
Ft. Belvoir, VA (KDA)	2197
Gaithersburg (KGAI)	1999
Greater Cumberland Reg (KCBE)	1774
Martinsburg, WV (KMRB)	1909
Natl Arboretum.Reagan Natl (KDCA)	2444
Salisbury/Ocean City (KSBY)	2189
St. Mary's City (Patuxent NRB KNHK)	2342
Westminster (KDMW)	2253

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: 95Calculation type: simple average/growing dds Start: Jan 1

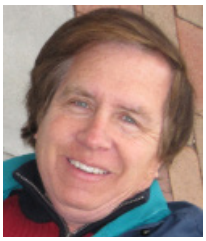
CONFERENCES

All Day Session on Herbaceous Perennials
July 25, 2019
Location: The Perennial Farm in Glen Arm, MD
Registration info will be posted at the MNLGA calendar site when available

Green Industry Professional Field Day and Trade Show
July 18, 2019, 7:30 a.m. – 2:30 p.m.
Location: American University | 4400 Massachusetts Avenue, NW, Washington, DC 20016
Presented by PGMS DC Branch, NVNLA, VA Cooperative Extension, and in cooperation with the MAC-ISA

LCA Plant Diagnostic Program
August 14, 2019
Location: Ag Farm Park, Derwood, MD

CONTRIBUTORS:



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