UNIVERSITY OF MARYLAND EXTENSION

TPM/IPM Weekly Report
for Arborists, Landscape Managers & Nursery Managers

Commercial Horticulture **October 14, 2022**

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Beneficial of the Week:
Spotted orb-weaver

Weed of the Week:
Ladysthumb

Plant of the Week: *Camellia sansanqua*

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:
Stanton Gill, Extension Specialist, IPM and Entomology for Nursery, Greenhouse and Managed Landscapes, sgill@umd.edu. 410-868-9400 (cell)

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) and Kelly Nichols (Extension Educator, Montgomery County)
Cultural Information: Ginny Rosenkranz (Extension Educator, Wicomico/Worcester/Somerset Counties)
Fertility Management: Andrew Ristvey (Extension Specialist, Wye Research & Education Center)
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Spotted Lanternfly

By: Stanton Gill

Last week, Paula put out a great article on the SLF and egg masses they were laying. On Friday, I received an email from Donna Davis, former forester for Carroll County. She shot a photo of a freshly laid spotted lanternfly egg mass. I drove out to her site to look at it. The egg mass was laid on a pawpaw tree branch. The interesting thing is right after it was laid it was white colored, but within a couple of hours the outer layer turned a tan brown color. I had to climb up a ladder to get a really good look at the egg mass.

Donna and Jim Davis had construction going on at their house, and on Tuesday, they said a construction worker was pulling off the soffit on their house when 3 adult SLF leaped out and took flight. Jim examined a site on an adjacent farm and found the ailanthus trees were maintaining a healthy population of SLF. This was in the Westminster in Carroll County.

Last week, Paula mentioned using horticultural oil for spotted lanternfly egg mass control. Miri Talabac, UME-HGIC, questioned whether a 3 or 4% horticultural oil would damage foliage or bark of a tree at this time of year. On Saturday, October 8, I mixed up a 3% solution of paraffinic horticultural oil into an air blast sprayer hooked PTO on my tractor. I applied the oil mix when ambient air temperatures reached 61 °F, spraying the trees to drip with the oil mixture. It was applied to 65 apple trees of 6 cultivars, with trees 2 – 14 years of age. I also applied the oil to 2 peach trees and 2 plum trees. I examined

the foliage and trunks 48 hours after the application and found no phytotoxicity damage to the leaves or the trunks of the trees.

A freshly laid spotted lanternfly egg mass. Photo: Donna Davis

I was interested in Penn States work with oil on SLF egg masses. Greg Krawczyk, Extension Entomology Specialist in Fruit Production, Penn State Experiment Station of Biglerville, PA, had the following comment: “All our oil sprays were targeted before egg hatch of SLF, and before green tissue on trees (at least we tried): April seems as the best timing for southern PA. Any rate above 3 percent worked.”

Brian Walsh of Penn State Extension comments: “My work has been on ornamentals with various rates of oils for ovicidal use on SLF eggs. My results have mostly mirrored Greg's results, with some variations and also with some serious deviations within data sets of replications of my own trials.

I concur with Greg, there is no point in spraying for SLF eggs at this time as they are actually just hitting their peak of laying in mid-October (Southeast PA) and will continue to do so through hard freeze (not just a hard frost), which has been first to second week of November in recent seasons. They can shake off a pretty hard frost if it doesn't stay consistently below freezing for several hours.”

Late Season Leaf Spots

By: Karen Rane

We have recently been receiving calls about trees with severely discolored/spotted foliage and leaf drop. At this point in the growing season, leaves of deciduous trees (and older needles of evergreens too) are normally senescing. A number of opportunistic fungal pathogens invade leaves late in the growing season, causing spots like shown in the photo. Unlike diseases that develop in late spring or early summer, leaf spots developing now have very little impact on the health of affected trees.

Magnolia with late season fungal leaf spot. Photo: K. Rane, UMD

Fall Color on White Pines

Todd Armstrong, The Davey Tree Expert Company, sent photos of white pines showing fall color in White Marsh. Todd noted that at this time of year they typically receive calls from clients asking if their pines are sick.

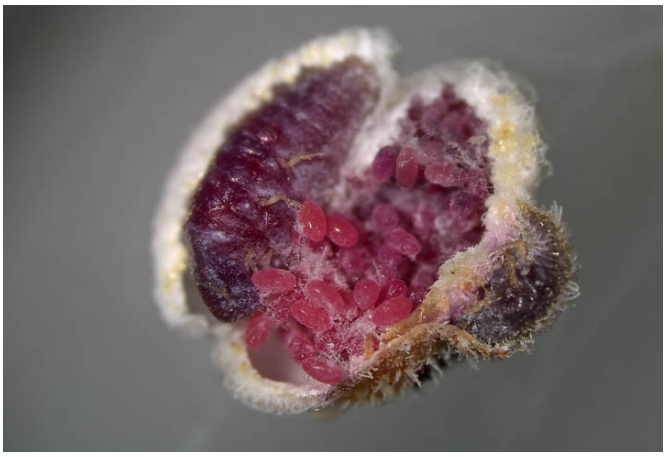
White pine with fall color in White Marsh as of October 10. Photo: Todd Armstrong, The Davey Tree Expert Company

A Good Halloween Horror Story

By: Stanton Gill

It is mid-October a good time for a horror story. What can be more horrible than the fast spreading crapemyrtle bark scale?

This new exotic scale pest, *Acanthococcos* (=*Eriococcus*) *lagerstroemiae* Kuwana (Hemiptera: Sternorrhyncha: Eriococcidae), commonly referred to as the crapemyrtle bark scale (CMBS), is a big deal and it is a major threat to the commercial viability of nursery and landscape plantings of crape myrtles. This pest was first found in the USA in Texas. The first sightings of CMBS were reported in McKinney, Texas in 2004 (Gu et al. 2014), and the scale has since spread to at least 11 states in the U.S, from New Mexico to Virginia (EDDMapS 2019). As of 2020, its range was expanded to Maryland and the District of Columbia. In the last three months we have received an incredible number of emails and pictures of crapemyrtle bark scale showing up in the District of Columbia and throughout Maryland, wherever crape myrtles are growing. It just takes one infested plant to be moved into a neighborhood, and the spread onto adjacent plants is incredibly fast.



Under this female cover are crapemyrtle bark scale eggs. Photo: Heather Zindash, The Soulful Gardener

Here is the really scary part. Though it has been reported mainly on crape myrtle since its entry into the United States, it recently was found infesting a plant in the verbena family, American beautyberry, C*allicarpa americana*.

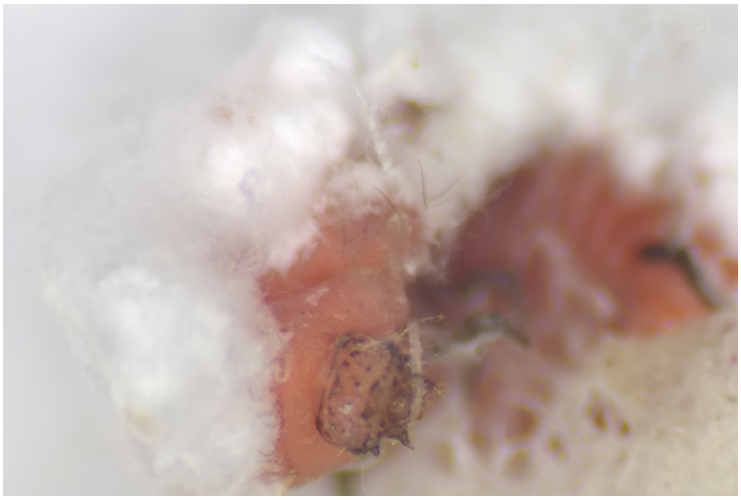
In Asia, this scale can reportedly infest 17 plant genera in 13 families, including economically important crops such as pomegranate (*Punica granatum* L.) (Ma 2011), soybean (Glycine max (L.) Merr.) and apple (*Malus domestica* Borkh) (Hua 2000). Crapemyrtle bark scale was recently confirmed (unpublished data, Allen Szalanski, University of AR) on Callicarpa sp. (beautyberry) in Texarkana, TX, Dallas, TX, and Shreveport, LA, and on *Hypericum kalmianum* L. (St. Johnswort) in Virginia (Schultz and Szalanski 2019).

Here is another thing that scares me, in Asia, it has been reported on figs, Ambrosia apples and persimmons. We will be investigating these reports in future studies.

Crapemyrtle bark scale has become a persistent problem throughout the area.
Photo: Bob Mead, Mead Tree Experts

Brian Kunkel, Entomologist, University of Delaware Extension, and I will be looking at this scale more closely in 2023 to get more detailed life cycle information for our area. We are purchasing crepe myrtles to infest in 2023 for our studies using grantmoney.

Heather Zindash just sent in these photos of female crapemyrtle bark scale. Notice they are loaded with eggs. So, there is a possibility of another crawler period before the cold sets in. In China, crapemyrtle bark scale is reported to have 3 to 4 overlapping generations per year (Luo et al. 2000, He et al. 2008, Ma 2011). Multiple peaks of crawler activity seen in Texas and Arkansas suggest that CMBS has two or more overlapping generations per year, and possibly up to four generations as previously reported. Erfan Vafaie, Texas A&M, reports crawlers early in the spring. Vafaie found dormant rate oils of 2 -3 % will kill overwintering stages.



Close-up of the chewing mouthparts of a lady beetle larva. They are covered in wax that make them look like mealybugs.
Photo: Sheena O'Donnell, UME

The underside of this lady bird beetle shows its legs.
Photo: David Clement, UME-HGIC

Erfan reports crawlers in Texas and Arkansas starting in late winter and continuing into May. He said crawlers were reported later in the season indicating multiple generations per season. With crawlers and eggs in late August in Maryland, it looks like there are multiple generations of this pest occurring here as well.

Look for lady bird beetles feeding on crapemyrtle bark scale.
Photo: Todd Armstrong, The Davey Tree Expert Company

Boxwood Leafminer

By: Stanton Gill

I received a call and an email from a New Jersey grower who had applied Abamectin (Avid) at 8 oz/100 gallon to control boxwood leafminer in September. He thought the control was terrible.

A Maryland grower applied Avid in early May of 2022, and we examined foliage in late August and the control level looked good. We are examining additional samples this next week.

Kevin Chase, Entomologist with Bartlett Tree Company commented that the only material they found worked for boxwood leafminer is a high label rate, foliar application of imidacloprid, after the boxwood blooms. Paul Wolfe, Integrated Plant Care, said he has made September soil drench applications of imidacloprid for boxwood leafminer with good success.

Boxwood leafminers are in the larval stage within leaves this week.
Photo: Sheena O'Donnell, UME

Mike Raupp, Retired Entomologist, University of Maryland, said he worked with late spring applications of Avid with good success.

I asked Nancy Rechigl, Syngenta Company, if Mainspring or Citation (IGR) would provide control. Nancy thought that Mainspring applied in March as a soil drench at 8 oz/100 gallon rate would give season long control of boxwood leafminer. Nancy noted that Mainspring is an excellent material for Diptera larvae. I asked if Citation (IGR) had been tested for boxwood leafminers. Nancy said it was not tested yet but might be part of a rotation in a nursery to deal with leafminers. She also mentioned that Avid, if used, should be applied 3 times at 7-day intervals when new foliage is emerging in spring, after females laid eggs into the foliage.

It is interesting to review the many comments on which materials are working and which are not for this pest. Timing may be a big factor.

Powdery Mildew of Dogwood

By: Sheena O'Donnell and D. L. Clement, UME

Early signs of powdery mildew infection include a powdery appearance on new leaves.
Photo: David Clement, UME

Dogwood powdery mildew infects native dogwoods throughout the US. Early signs of infection include a powdery appearance on the newly emerging leaves. Powdery mildew may cause yellow to brown spots, leaf scorch, or maroon colored patches on later infected leaves. The fungus produces spores (conidia), which spread infection to surrounding leaves causing new leaves to curl upward and new growth to be generally stunted before actually showing mildew growth. Secondary infections caused by airborne conidia continue to spread throughout the growing season. Powdery mildew spores are unique in that they do not require a wet leaf to cause infection, only high humidity. Later in the season, dark specks appear in the mildew growth, which are the sexual fruiting bodies (chasmothecia) that can overwinter in buds, bark crevices and fallen plant debris. These structures will release their spores next spring starting the disease cycle again.

Management includes avoiding heavy pruning, or the use of high nitrogen fertilizers, both of which trigger rapid and tender growth which encourages further infections. Mulch root zones, prune out dead branches, and maintain an open airy branch structure to promote circulation. Give trees adequate light by pruning in such a way that light penetrates evenly, and by placing them in an area with direct morning sun and afternoon shade. The best way to avoid this disease is to choose resistant varieties. University of Tennessee's breeding program developed a powdery mildew -resistant 'Appalachian' series of C. florida in the early 2000's, including 'Jean's Appalachian Snow', 'Karen's Appalachian Blush', 'Appalachian Joy', and 'Kay's Appalachian Mist'.

In general, *Cornus kousa* plants are resistant to powdery mildew infection. Also, since *C. kousa* is generally more tolerant of higher light levels it is more tolerant of conditions that do not promote the spread of powdery mildew. Rutgers has been breeding dogwoods for powdery mildew disease resistance since the 1970s. Their Stellar series - includes cultivars 'Celestial', 'Constellation' and 'Ruth Ellen'. These plants are hybrids of *C. florida* x *C. kousa*, so they have traits of both types of dogwood. *C. kousa* 'Scarlet Fire' is one of Rutgers' newest varieties which displays deep-fuschia bracts.

University of Maryland Extension Job Opening

UME's Home & Garden Information Center has an opening for a part-time Horticulture Consultant to answer gardening, landscaping, and pest questions from Maryland and D.C. residents using the web-based "Ask Extension" platform. Bachelor's degree required. Location is the Central MD Research & education Center in Clarksville, MD.$20.86/hr. **Send resume or questions to Jon Traunfeld; jont@umd.edu**

Beneficial of the Week

By: Paula Shrewsbury

Another orb-weaver spider is busy – The spotted orb-weaver

Fall is the time that we see a diversity of orb-weaver spiders and their large orb-shaped webs. Last week I discussed the black and yellow garden spider, *Argiope* species. Another large orb-weaver that I have had reports on recently is the **spotted orb-weaver, *Neoscona crucifera*** (Family Araneidae). The spotted orb-weaver is distributed in the U.S. from Maine to Florida in the east, to Minnesota in the mid-west, and to Arizona in the southwest, and in coastal areas of southern California. It is also found in Mexico.

A spotted orb-weaver spider, Neoscona crucifera, hanging head down in her web.
Photo: M.J. Raupp, UMD

Spotted orb-weavers are large spiders with females having bodies about ½ to ¾ inch in size; males are somewhat smaller. The abdomens are fairly round and the upper-side is a reddish-brown to brown color and hairy, and the underside is black with two white spots. The legs are striped with alternating light yellow and dark bands.

Like their black and yellow garden spider cousins we discussed last week, spotted orb-weaver spiders have been busy making orb-shaped webs that look like "wagon wheels" (circular rings of silk with radial threads). The webs are large with the "orb" being up to 2 feet wide. The webs are attached between branches of trees and shrubs, or even human-made structures near lights. During the season, juvenile spiders make smaller webs at dusk and take them down just after dawn. Spotted orb-weavers are usually nocturnal (night active), but in the fall, they can be diurnal (day-active) and the adult females often leave their webs up to catch prey. It is thought this may be due to the need of the adult female for additional food for making eggs, in addition to lower prey activity on cooler fall nights.

A spotted orb-weaver hanging upside down in its web. Note the dark underside and the two distinct white marks.
Photo: E. Kollins

The spotted orb-weaver has a clever strategy to capture prey while limiting exposure to its own enemies. After constructing its amazing web, the spotted orb-weaver hides in a retreat near the edge of its web. The retreat might be a cluster of dead leaves or a piece of loose bark webbed together, or it may hide under an eave on a building that its web is attached. The spider runs a strand of silk called a signal thread from the web to the retreat. When a potential victim is entrapped by the sticky web, vibrations travel along the signal thread and alert the orb-weaver to the presence of its prey. The message is simple and clear - dinner is served. The spider swiftly hurries to its future meal and delivers a lethal paralyzing bite, and then quickly spins the prey wrapping it in silk. Prey include a range of insects such as aphids, flies, bugs, bees and wasps, moths, or other flying insects.

Spotted orb-weavers have spent the season feeding on prey and are now mature spiders. At this time of year, spotted orb-weavers continue to feed and mate, and females produce egg sacs. The egg sac is spherical in shape, less than ½ inch in size, and found in a rolled leaf covered with fluffy yellow threads. It is in the egg stage that they overwinter. Each egg sac may contain up to 1000 eggs that will hatch in the spring. Interestingly, the juveniles of spotted orb-weaver are the prey of mud daubers. The mud dauber catches the juvenile spider, brings it to her nest, and encloses it into one of the mud cells where it is food for the wasps young. I have broken apart mud-dauber nests before and found lots of spider parts in them. See the Bug of the Week episode with an interesting story on spider eating mud daubers.

An egg sac of the spotted orb-weaver, Neoscona crucifera, with the female spider next to it. This egg sac can hold up to 1000 eggs and is slightly bigger than ½ inch.
Photo: John R. Maxwell, from BugGuide.net

Weed of the Week

By: Kelly Nichols, UME-Montgomery County

In walking around our office this week, I noticed several pink patches in turf and meadow areas. The white to pink flowers of ladysthumb, *Polygonum persicaria*, are easily spotted during late summer into fall (Figure 1). Ladysthumb is a summer annual that can be found in landscape, nursery, and field settings. It prefers moist soils. Ladysthumb can grow up to three and a half feet; in some settings, it can grow laterally. Leaves are alternately arranged on the stem, are lanceolate to egg-shaped, and are two to six inches long and up to two inches wide. Leaves often have a purple spot in the middle; this spot looks like a lady's thumb, hence the name.

In the collar region (the area where the leaf meets the stem), there is an ocrea, which is a piece of tissue that wraps around the stem. There are a few stiff hairs at the top of the ocrea (Figure 2). Pennsylvania smartweed (*Polygonum pensylvanicum*) looks almost identical to ladysthumb, but does not have the stiff hairs on the ocrea. The ocrea is characteristic of plants in the buckwheat family. (Japanese knotweed [*Polygonum cuspidatum*] and prostrate knotweed [*Polygonum aviculare*] are also members of this plant family.)

Roots are fibrous with a shallow taproot. Stems are a reddish color with enlarged nodes. The flowers are grouped in spikes at the ends of stems. The fruit is a black achene (a small, dry, one-seeded fruit that does not open to release the seed).

Figure 1. Ladysthumb's pink flowers in the landscape.
Photo: Kelly Nichols, UME Montgomery Co.

Cultural control can be achieved in some settings by monitoring irrigation and redirecting water such as with splash blocks. Early in the season, it pulls out very easily. As a summer annual, if caught early, organic products that contain citric acid and clove oil (Burnout) as well as some with ammoniated soaps of fatty acid (Pulverize) can work very well. Control of this weed can be achieved in landscape settings using pre emergence materials including oryzalin (Surflan), isoxaben with trifluralin (Snapshot), and isoxaben (Gallery). Remember that it is a summer annual, so timing of application is important. In turf settings, post-emergence products for broadleaf plants containing 2,4D products will control it. In nursery settings in the row, post-emergence use of glyphosate can be used, but continue to remember care needs to be used to prevent sucker contact and or trunk contact. Pre-emergence products are less potentially damaging to the desired species.

Figure 2. The ocrea (bottom, white arrow) and stiff hairs (top, yellow arrow) on ladysthumb.
Photo: Kelly Nichols, UME Montgomery County

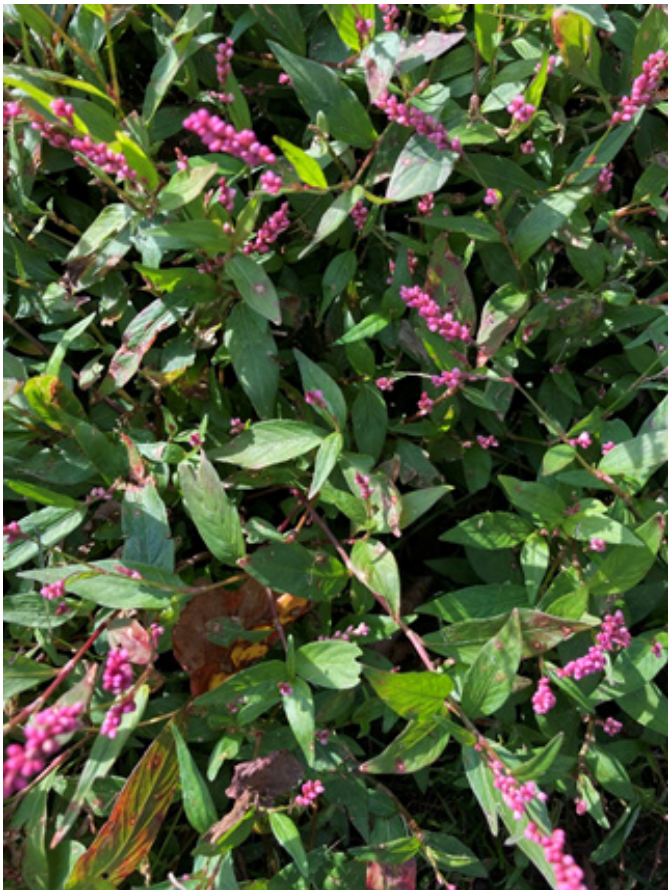


Figure 3. Ladysthumb foliage.
Photo: Kelly Nichols, UME Montgomery County

Plant of the Week

By: Ginny Rosenkranz

Camellia sasanqua or the fall blooming camellia, looks very delicate, but they brave the cold autumn and winter temperatures to fill the landscape with white, pink and red flowers. One of the beautiful characteristics of *Camellia sasanqua* is that the flower petals fall independent of each other and carpet the ground under each plant, like a lovely reflection in a mirror. Some will bloom very early in the autumn like 'Autumn Sentinel', while others wait until the leaves of the deciduous plants have gone through their fall parade of yellows, oranges, reds and burgundies to unveil their colorful flowers. Each variety has either small or large flowers, some with single petals others with double. All of the fall blooming camellias are prized for their small glossy evergreen leave.

Camellia sasanqua 'Autumn Sentinel' is a cultivar that blooms early in the fall with miniature, clear pink flowers. The petals are arranged in a peony or double petal form, growing 1 ½ inches across. The flowers are arranged in a spiral fashion on the branches, blooming between the glossy small narrow dark green leaves. Plants prefer to grow in full to part or dappled sun, and protection from east and west exposure will help the flowering. The soil should be acidic, moist but well drained, and the plants should be planted about an inch higher than the soil line with an inch of mulch to maintain soil moisture. 'Autumn Sentinel' is cold hardy in USDA zones 7-9 and grows in a narrow upright fashion, and is very compact, making it perfect for smaller gardens. The plants can grow 7-8 feet tall and 5 feet wide, and need to be protected from strong winter winds. They can be planted in woodland gardens, as a foundation plant, and as a hedge. Pests can include leaf virus, leaf spots, anthracnose, black mold, petal blight, canker and root rot. Leaves that are yellow with green veins could indicate soil pH is too low. Insect pest can include scale, aphids, planthoppers and spidermites. Cottony Camellia scale will deposit honeydew which in turn attracts sooty mold which will turn the leaves black.

***Camellia sasanqua* 'Autumn Sentinel'**
Photo: Ginny Rosenkranz, UME

Degree Days (as of October 12)

Aberdeen (KAPG)	no data
Annapolis Naval Academy (KNAK)	4025
Baltimore, MD (KBWI)	4064
College Park (KCGS)	3744
Dulles Airport (KIAD)	3832
Ft. Belvoir, VA (KDA)	3827
Frederick (KFDK)	3588
Gaithersburg (KGAI)	3604
Gambrils (F2488, near Bowie)	3851
Greater Cumberland Reg (KCBE)	3450
Martinsburg, WV (KMRB)	3376
Natl Arboretum/Reagan Natl (KDCA)	4411
Salisbury/Ocean City (KSBY)	4046
St. Mary's City (Patuxent NRB KNHK)	4469
Westminster (KDMW)	4157

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

Pest Predictive Calendar "Predictions"

By: Nancy Harding and Paula Shrewsbury, UMD

In the Maryland area, the accumulated growing degree days (**DD**) this week range from about **3376 DD** (Martinsburg, WV) to **4469 DD** (St. Mary's City). 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. The estimated start degree days of the targeted life stage are in parentheses.

- Banded ash clearwing borer – adult emergence (**3357 DD**)
- Tuliptree scale – egg hatch / crawler (**3519 DD**)

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

Conferences

December 8, 2022 (Morning session)
Turf Nutrient Management Conference
Location: Carroll Community College

December 15, 2022
Advanced Integrated Pest Management Conference
Location: Carroll Community College
Program will be submitted for ISA CEUs and Pesticide recertification credits.

January 11-13, 2023
MANTS
Location: Baltimore Convention Center

January 3, 4 and 5 AND January 10, 11, and 12, 2023
UMD IPM Short Course
Lecture times: 7:45 am – 11:30 am Eastern Standard Time
Location: Virtual via Zoom

2 day in-person lab (8:00AM - 3:00PM)
Lab dates: Tuesday and Wednesday January 17 and 18 (8:00AM - 3:00PM
Location: In person at University of Maryland Campus, College Park, MD
Course and Registration Information: https://landscapeipmphc.weebly.com/
Questions contact: Amy Yaich, 301-405-3911, umdentomology@umd.edu

January 17 and 18, 2023
MAA Winter Conference
Location: Turf Valley, Ellicott City, MD

January 27, 2023
FALCAN Conference
Location: Frederick Community College

February 6, 2023
Western Maryland Pest Management Conference
Location: Allegany Fairgrounds, Cumberland, MD

February 15, 2023
2023 Eastern Shore Pest Management Conference
Location: Salisbury, MD

February 16 and 17, 2023
Chesapeake Green Horticultural Symposium
Location: Maritime Institute, Linthicum Heights, MD

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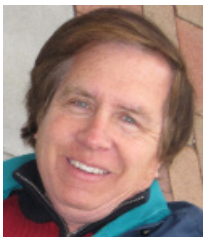

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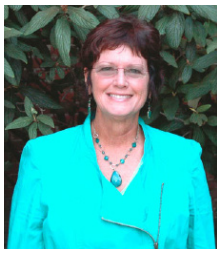

Nancy Harding
Faculty Research
Assistant

Thank you to the Maryland Arborist Association, the Landscape Contractors Association of MD, D.C. and VA, the Maryland Nursery, Landscape, and Greenhouse Association, Professional Grounds Management Society, and FALCAN for your financial support in making these weekly reports possible.

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