

Commercial Horticulture

June 6, 2025

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Beneficial of the Week:

Fireflies

Weed of the Week: Hemp dogbane

Plant of the Week: Sweet bay magnolia (*Magnolia virginiana*)

Pest Predictive Calendar Phenology Conferences

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

Coordinator Weekly IPM Report:

Paula Shrewsbury, Professor and Extension Specialist in Ornamental and Turf IPM, Department of Entomology, pshrewsbury@umd.edu

Regular Contributors:

Pest and Beneficial Insect Information: Paula Shrewsbury (Extension Specialist) and Nancy Harding, Faculty Research Assistant

Disease Information: David Clement (Extension Specialist) and Ana Fulladolsa (Plant Pathologist and Director, UMD Diagnostic Lab)

Weed of the Week: Kelly Nichols, Nathan Glenn, (UME Extension Educators), and 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)

June 17, 2025 IPM Scouts' Session

1:00 - 3:00 p.m. (check-in starts at 12:30 p.m.)

Location: CMREC, 4240 Folly Quarter Road, Ellicott City, MD 21042

Program to diagnose insect, disease, and cultural problems on greenhouse, nursery, cut flower, and landscape plants. Bring samples for help with identification of plant problems. The program will focus on how to diagnose plant problems. Microscopes will be available for looking at samples. Paula Shrewsbury, Andrew Ristvey, and Dave Clement will be available to answer questions and provide additional information.

To register via Eventbrite

To register via check, send check payable to University of Maryland to June 17 IPM Session, 4240 Folly Quarter Road, Ellicott City, MD 21042.

Stanton A. Gill Symposium

June 24, 2025

Location: CMREC, 4240 Folly Quarter Road, Ellicott City, MD 21042

Co-Sponsors: University of Maryland Extension and Maryland, Nursery, Landscape, and Greenhouse Association (MNLGA)

MNLGA is handling [the registration](#) for this symposium.

Cytospora Canker

By: Tara Dinh and Ana C. Fulladolsa, UMD Plant Diagnostic Laboratory

We recently received a young red maple with *Cytospora* canker, showing significant branch dieback and multiple cankers on twigs and branches. The disease is caused by the fungus *Cytospora* sp. and it affects a wide range of hardwood and conifer trees, including maple, cherry, poplar, willow, and spruce. The fungus lives and overwinters in cankers, which are sunken, dead areas of bark, and spreads through wind, rain, or insects. Although it can live in healthy tissue without symptoms, the fungus becomes aggressive when a tree is stressed by environmental factors like drought, winter damage, improper pruning, or insect injury. Symptoms include slow growth, fading or browning leaves or needles, twig dieback, cankers, and oozing resin on branches.

A key diagnostic feature is the presence of pycnidia, small, black, pimple-like structures embedded in the plant tissue near the edges of cankers or in resin-soaked bark. These are the fungal fruiting bodies that release spores in wet weather. Cankers typically begin on lower branches and slowly spread upward, girdling and killing branches over time. They often have a sunken, oval, or diamond-shaped appearance and may ooze resin.

There are no effective fungicides for *Cytospora* canker, so management relies on preventative care and cultural practices. Reduce tree stress by planting species well-suited to the site and ensuring proper watering during dry periods. Avoid unnecessary injury from pruning or landscaping equipment, and only prune infected branches during dry weather. Always cut back to healthy wood and disinfect tools between cuts to prevent spreading the fungus to fresh wounds. Regular monitoring, timely removal of dead wood, and good sanitation practices are key to minimizing disease impact over time.

For more information, go to:

<https://extension.umd.edu/resource/cytospora-canker-spruce-trees/>

<https://extension.colostate.edu/topic-areas/yard-garden/cytospora-canker-2-937/>



Cytospora canker on *Salix* twig.

Photo: Penn State Department of Plant Pathology & Environmental Microbiology Archives, Penn State University, Bugwood.org



Fungal fruiting bodies in canker tissue on peach.

Photo: Madeline Dowling, Clemson University, Bugwood.org

Problems on American Hollies

Rob Prenger, Maryland Dept. of Natural Resources, is receiving many reports of American hollies with brown leaves. So far, we haven't received any other reports of brown leaves on American holly this spring. There are some fungi that infect hollies, but the fungi usually cause the older leaves to turn yellow and they drop before turning brown. With brown leaves, it could be older leaves senescing or a result of winter damage or drought stress. If anyone is seeing brown American holly leaves, please let us know. If you get branch samples to us, we can look to see if there are any disease issues occurring.

Gloomy Scale Crawlers and Settled Crawlers Are Active Now!

By: Paula Shrewsbury and Nancy Harding, UMD

On Sunday June 1st, Nancy found gloomy scale, *Melanaspis tenebricosa*, crawler activity on red maples on the UMD College Park campus. Many crawlers were found under the adult female tests (wax cover) indicating they had just been laid, along with many settled and capped 1st instars (see photos to recognize all these stages). The accumulative GDDs in College Park as of June 1st were **884 DD**. Under these conditions, **NOW** is time to treat trees that have infestations of gloomy scale. Be sure to **monitor red and silver maple trees on your properties for gloomy scale and crawler activity now**. The earlier you determine you have gloomy scale (ex. low densities), the easier it will be to control.

Gloomy scale is an armored scale that is native to the Eastern U.S. There is one generation a year, they overwinter as immatures, and are found on the bark and branches of the tree. Females do not lay eggs. They are ovoviviparous, meaning they hold their eggs inside of them to develop and then give birth to live crawlers. Females can produce 5-7 eggs / day over a 6-8- week period.

Gloomy scale can be a major pest of maples especially red and silver maples, although they may also attack other native maples and other tree species, i.e. elms, boxelder, sycamore, catalpa. This scale is hard to see unless you get up close to the trunk and major branches. High infestations can coat twigs, branches, and trunks darkening the color and creating a bumpy texture on the host (see photo). Heavy infestations result in branch dieback and death of trees if left unchecked (see photo).

Control: For optimal control, target monitoring and control measures to the susceptible crawler stage. Gloomy scale is difficult to manage because of the long egg laying and crawler activity period (6-8 weeks). This may require multiple treatment applications, depending on the product you use. If the trees have crawlers, now is the time to treat. Target the crawler or settled crawler stages with the insect growth regulators (IGR) Talus (a.i. buprofezin) or Distance (a.i. pyriproxifen). Be sure to continue to monitor to determine



High infestation of gloomy scale causes stunting and dieback.
Photo: N.Harding, UMD

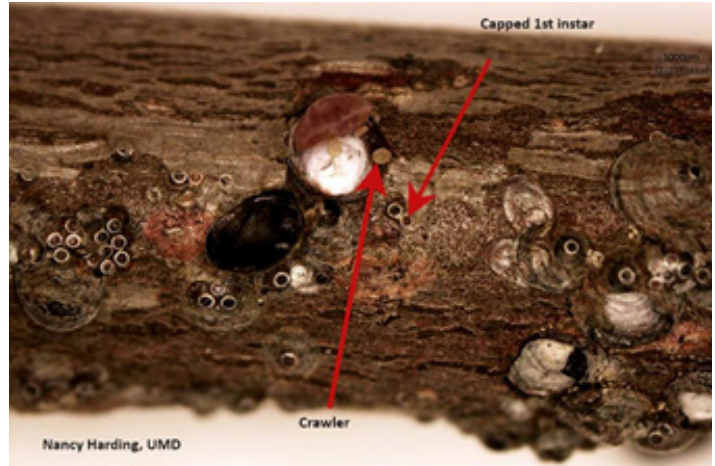


Close up view of gloomy scale on the bark of red maple. Note the soft bodied scale insect with its protective waxy cover removed. Also note the characteristic small black "caps" (1st instar covers) just off center of the scale cover.
Photo: Matt Bertone, NCSU

if a second application may be needed due to the long crawler emergence period (6-8 weeks) of gloomy scale. If densities of gloomy scale are high, consider applying a dormant oil application at the appropriate time. Although there are parasitoids, predators, and pathogens that attack gloomy scale, under warmer urban conditions the natural enemies often cannot keep the scale at low enough levels to prevent damage. However, natural enemies are impacting the populations, and their conservation should be considered if treating with insecticides. For example, avoid applications of broad spectrum, long residual pesticides such as pyrethroids. If you have problems with gloomy scale, we strongly recommend you read the article [“Gloomy Scale \(Hemiptera: Diaspididae\) Ecology and Management on Landscape Trees”](#) by Just, Dale, and Frank (Journal of IPM, 2020). They provide a comprehensive description of this pest and its management using an IPM approach.



A dense population of gloomy scale on the trunk of a red maple. The bark is not supposed to be “bumpy”.
Photo: N. Harding, UMD



Gloomy scale crawlers found on red maple June 1st. Arrow pointing up active crawler, arrow pointing down newly “capped” 1st instar.
Photo: N. Harding, UMD

Crapemyrtle Bark Scale – Big increase in crawler activity this week

By: Paula Shrewsbury

Sheena O’Donnell (CMREC Research Tech., UME) continues to monitor for crape myrtle bark scale (CMBS), *Acanthococcus lagerstroemia*, weekly in University Park, MD. This week College Park (next to University Park), MD reached 941 DD. CMBS crawlers are predicted to emerge around 724 DD. The last 3 weeks there have been lots of ovisacs with adult females and lots of eggs in them. In the last 2 weeks there have been just a few crawlers (<1% of observations). This week on Monday 6/2, the number of crawlers increased dramatically. There are still ovisacs with eggs so more crawlers are to come.

Anyone who has CMBS on crape myrtles should be closely monitoring for the presence of crawler activity ([click here for good video showing crawler activity](#)). Egg hatch and crawler activity CMBS is reported to occur around 724 DDs. Many areas of MD are around 724 DDs or past already.

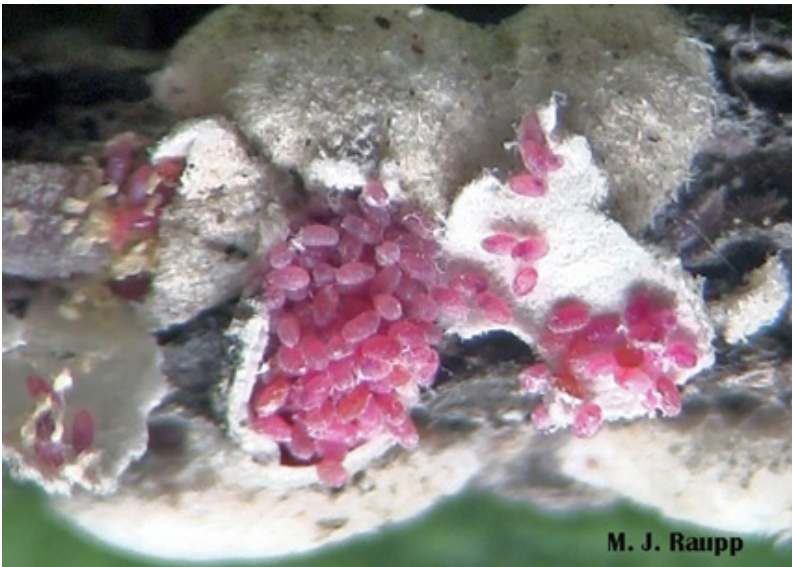
Recommendations: If you have high CMBS crawler activity, now is the time to treat. There are multiple chemical controls that are available for CMBS suppression. These include systemics such as dinotefuron,

or contacts such as horticultural oil or other labeled products. Good options for suppressing CMBS are to target the crawler stages with insect growth regulators such as pyriproxyfen or buprofezin. Be sure to follow label directions to protect natural enemies and pollinators and get optimal control. Depending on the density of the population and how many trees you are managing, you can use mechanical control such as a soft scrub brush and water to physically wash the scales off the branches and trunk of the tree to reduce the populations.



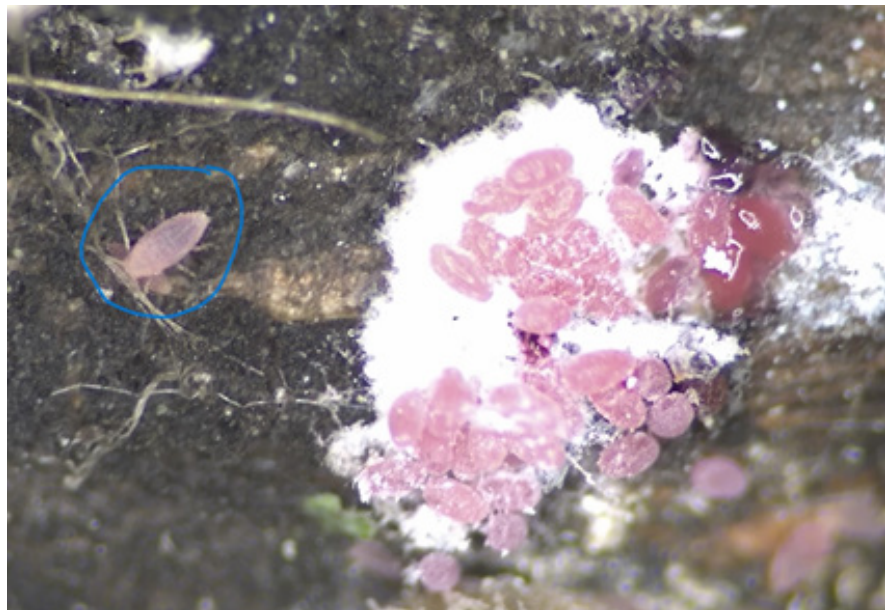
A close-up of several ovisacs (egg-sacs) of female CMBS and encrustations of black sooty mold covering a branch.

Photo: M.J. Raupp, UMD



Hundreds of pink eggs from beneath the CMBS egg sac were exposed. If you are seeing a lot of ovisacs with eggs, then keep monitoring for crawlers and target treatments for that stage.

Photo: M.J. Raupp, UMD



A newly emerged crawler (pink, circled in blue on left) of CMBS. A disturbed ovisac with lots of pink eggs that look like crawlers are hatching from them.

Photo: Sheena O'Donnell, UME

China Mark Moth

Heather Zindash, The Soulful Gardener, sent an email stressing the importance of scouting all incoming plant material. She found lotus with China mark moth larvae when checking a client's new delivery. China mark moth is also often a pest of water lilies. Larvae cut out a piece of leaf that they put over themselves and they feed within this 'boat'. There are three overlapping generations in Maryland. For more information on this pest and the waterlily leafcutter, see the [UME fact sheet](#).



China mark moth damage on lotus.
Photo: Heather Zindash, The Soulful Gardener



Look for the pieces of leaves on lotus leaf; a larva is feeding within.

Photo: Heather Zindash, The Soulful Gardener



The larva that you will find within the 'leaf boat'.
Photo: Heather Zindash, The Soulful Gardener



A china mark moth pupa.

Photo: Heather Zindash, The Soulful Gardener

Crawlers Are Active on Lecanium Scales and Cottony Camellia/Taxus Scale

Marie Rojas, IPM Scout, found cottony camellia scale hatching out on 'Nellie R Stevens' and 'Dragon Lady' hollies on June 2 in Beallsville. Marie also found crawlers of oak lecanium on *Quercus alba* and *Q. phellos* and European fruit lecanium on American elm on June 3 in Gaithersburg. These scale insects have one generation per year in Maryland. However, European fruit lecanium crawlers are active through the summer. Now is the time to apply materials such as pyriproxyfen or buprofezin while the crawlers are active.



Lecanium scale crawlers on hawthorn.
Photo: Suzanne Klick, UME



Cottony camellia/Taxus scale is in the crawler stage at a site in Gaithersburg.
Photo: Marie rojas, IPM Scout

Big-eyed Click Beetle

Bob Mead, Mead Tree Experts, found a big-eyed click beetle this week. When grabbed by a predator, the big-eyed click beetle snaps its body so forcibly that it makes this clicking noise. The force is often strong enough that its predator loses its grip on the click beetle. The larvae (called wireworms) feed on other beetles within rotting wood. Adults are also predaceous and do not feed on plant material.



The large eyespots on the big-eyed click beetle are believed to confuse predators.
Photo: Bob Mead, Mead Tree Experts

Beech Leaf Disease Spreading Across Maryland

By: Heather H. Disque, MDA, David L. Clement, and Ana C. Fulladolsa (UMD)

The Maryland Department of Agriculture confirms worsening symptoms of beech leaf disease. Beech leaf disease (BLD) has been recorded in Allegany, Anne Arundel, Baltimore, Caroline, Carroll, Cecil, Charles, Frederick, Harford, Howard, Montgomery, and Washington Counties and Baltimore City. BLD and the associated nematode, *Litylenchus crenatae maccannii* affects all beech species including American beech (*Fagus grandifolia*). BLD has been found in surrounding states including Pennsylvania, Virginia, West Virginia, Delaware, New Jersey, Ohio, Michigan, New York, Connecticut, Massachusetts, Rhode Island, New Hampshire, Vermont, and Maine.

BLD symptoms can be seen at any time of the year and best viewed from the underside of the leaf. BLD affects and kills native and ornamental beech tree species and is associated with the nematode *Litylenchus crenatae maccannii*. BLD symptoms include leaf striping, curling, leathery texture, reduced leaf and bud production. Young trees can be killed within one year of infection, mortality for mature trees is estimated between 6-10 years.

Currently there is no known way to prevent nematode infection. Pruning trees in the winter or early spring can help increase light and air circulation to dry out the leaves and limit the nematode population. The use of fluopyram when applied during the nematodes' movement from the leaves to the buds to overwinter was shown to kill over 90% of live nematodes (Loyd et al, 2024). This treatment would occur in the late summer during a time when the leaves are wet. Another treatment that has shown effectiveness on smaller size class trees is a PolyPhosphite30 fertilizer. This product is to be used during the growing season as a soil drench or soil injection, stimulating the tree's immune system. A recent study by Bartlett Tree Research and Rainbow Ecoscience also showed promising results after tree injections with thiabendazole: <https://doi.org/10.48044/jauf.2025.007>. Landowners can contact licensed and certified pesticide applicators for treatment options. A list can be found at <https://www.egov.maryland.gov/MDA/Pesticides>.



Backlit beech leaves with typical striping symptoms of BLD.

Photo: Matthew Borden, Bartlett Tree Experts, Bugwood.org



Chlorotic striping on beech leaves with BLD.

Photo: Matthew Borden, Bartlett Tree Experts, Bugwood.org



Leathery, curled beech leaves with BLD.

Photo: Matthew Borden, Bartlett Tree Experts, Bugwood.org



BLD-infected beech leaves with striping, curling, and cupping symptoms.

Photo: Matthew Borden, Bartlett Tree Experts, Bugwood.org

Forest Pest Management continues to survey for BLD in Maryland. Additional counties are being surveyed for presence of the BLD and the nematode. Permanent survey plots have been set up across Maryland since 2019. To report symptoms of BLD, data can be entered on the “Tree Health Survey” app or reported by email to fpm.mda@maryland.gov. For additional information visit the UMD Extension Website at: <https://extension.umd.edu/resource/beechn-leaf-disease-maryland/>

Additional information regarding BLD spread and management can be found here:

Loyd, Andrew L. et al. 2024. Exploring novel management methods for beech leaf disease, an emerging threat to forests and landscapes. <https://doi.org/10.24266/0738-2898-42.1.1>

Epiphan, J. et al. 2025. Rutgers Cooperative Extension Bulletin E376: Beech leaf disease and management options. <https://njaes.rutgers.edu/E376/>

Urrea-Morawicki, K. 2024. URI Cooperative Extension: Beech leaf disease in Rhode Island Update September 2024. https://web.uri.edu/coopext/wp-content/uploads/sites/2042/2024-BLD-update_9.23.24-1.pdf

Holden Forests & Gardens: Beech leaf disease. <https://holdenfg.org/beechn-leaf-disease/>

Clement, D. 2025. UMD Extension TPM/IPM Weekly Report: <https://extension.umd.edu/sites/extension.umd.edu/files/2025-05/25May09L.pdf>

Crapemyrtle Aphids

Mark Schlossberg, ProLawn Plus, Inc., is finding a large population of crapemyrtle aphids in Pikesville this week. All stages can be present at one time which aids in the quick increase of aphid populations. These aphids produce a lot of honeydew on which sooty mold grows. If control is necessary, consider using materials such as horticultural oil or Endeavor which have minimal impact on beneficial insects.



A heavy infestation of crapemyrtle aphid is causing extensive leaf distortion on the plant. Sooty mold is growing on the honeydew. Photo: Mark Schlossberg, ProLawn Plus, Inc.

Spongy Moth Caterpillars Are Still Feeding

By: Paula Shrewsbury

Steve Roberts (SavATree) found spongy (formerly gypsy) moth caterpillars, *Lymantria dispar* (Lepidoptera: Erebidae), on a silver Maple in Newton, NJ on June 1, 2025. Spongy moths overwinter as eggs in tan, fibrous egg masses and have one generation per year. Caterpillars hatch out around 373 DD (they should all be hatched out by now). The caterpillars usually feed between May and June and prefer oak but will also feed on sweetgum, linden, willow, birch, apple, alder, boxelder, hawthorn, and blue spruce. At this time of year caterpillars should be late instars and feeding voraciously and likely starting to migrate off trees to pupate soon. Be sure to monitor preferred spongy moth caterpillar host trees for damage and caterpillar activity. Adult activity usually starts in late June.



Spongy moth caterpillars near egg masses on silver maple in Newton, NJ.

Photo: Steve Roberts, SavATree



Spongy moth adult female laying an egg mass.

Photo: Jim Occi, BugPics, Bugwood.org

The Maryland Department of Agriculture monitors and provides treatments of areas with high densities of spongy moth. This year they were scheduled to treat areas in Allegany, Garrett, and Washington counties. You can find more information about [spongy moth on the MDA website](#). I have not heard much about spongy moth activity which suggests that they are not much of a problem this year – hopefully.

Powdery Mildew

Elaine Menegon, Good's Tree and Lawn Care, found powdery mildew infection on ninebark this week. When environmental conditions are right, we will see powdery mildew throughout the season. If necessary, use a labelled fungicide for control.



Powdery mildew infections occur throughout the season when conditions are right.

Photo: Elaine Menegon, Good's Tree and Lawn Care

Red-headed Ash Borer Activity on Oaks

By: Paula Shrewsbury

A mating pair of adult redheaded ash borers, *Neoclytus acuminatus*, were found on stressed *Quercus michauxii* on May 30th. Redheaded ash borers are a native species that belongs to a group of wood boring beetles referred to as long-horned beetles (Family Cerambycidae) named for their long antennae. Adults emerge from infested trees in the spring (~April – May), mate, and lay eggs on the bark, newly hatch larvae bore into the sapwood. There can be multiple generations per year.

Red-headed ash borers are known to attack recently dead or dying, hardwood trees, usually ash, hickory and oak but sometimes other species, in addition to newly planted living trees. Red-headed ash borer is known to be a pest in nurseries of weak or newly planted trees. In general, if there is red-headed ash borer activity on a tree that is not newly planted, it suggests that the tree was weakened or stressed by something else first. Once the larvae are in the wood, there is little you can do. If densities are high enough, consider removing the infested trees. The best defense is to reduce stress to trees. More information on red-headed ash borer can be found [here](#) or [here](#).



Mating pair of red-headed ash borer adults on *Quercus michauxii*.
Photo: Mason Broderick

Thrips Damage on Privet

By: Paula Shrewsbury

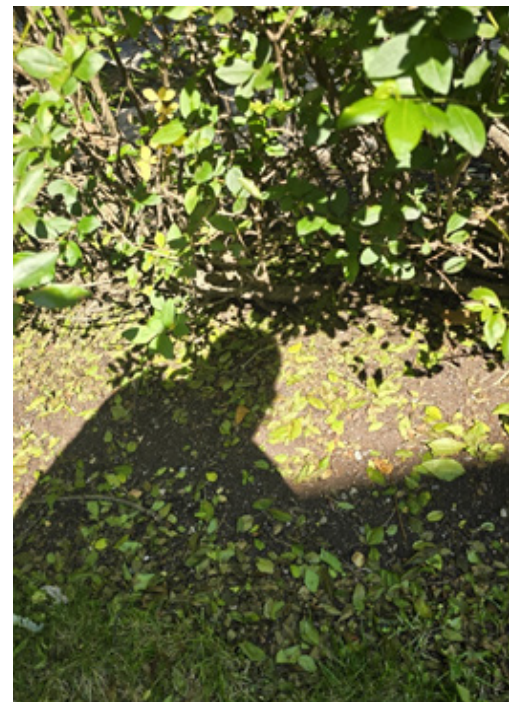
Ben Morris, SavATree, observed leaf cupping and leaf loss on privet likely due to privet thrips, *Dendrothrips ornatus* (Thysanoptera: Thripidae), in New Jersey. Privet thrips is an introduced thrips to North America. Host plants include privet, ash, and lilac. Thrips feed (rasping-sucking mouthparts) on leaves and twigs resulting in discoloration, leaf curling, and leaf drop. If damage and thrips populations are high, treatment with Spinosad should reduce populations.



Leaf cupping and discoloration on privet caused by privet thrips feeding.
Photo: Andrew Miller, iNaturalist



Adult privet thrips and closeup of leaf damage.
Photo: Varga András, Hungary (from <https://gd.eppo.int/taxon/DENOOR/photos>)



Heavy leaf drop on privet from privet thrips damage.
Photo: Ben Morris, SavATree

Hail Damage on Crape Myrtle

By: Paula Shrewsbury

Chris Kanarr from Hubbard Road Tree Farm in Hurlock, MD send in images of crape myrtles with unusual bark cracking and splitting. The damage was on the north side of the trees and on branches and trunks from the ground to the top of the plant. After some communication back and forth, it was determined the damage was from hail - a hailstorm occurred on May 16th.



Hail damage to crape myrtles in Hurlock MD.
Photo: Chris Kanarr, Hubbard Road Tree Farm

Ambrosia Beetle Update

By: Paula Shrewsbury

We had a report of ambrosia beetle borer activity (frass toothpicks) and signs of leaf drop and dieback on a ‘Stellar Pink’ hybrid dogwood (Florida x kousa varieties). The beetle toothpicks and damage were found on May 9th in Church Hill, MD. We have had other reports this season on these dogwoods being attacked by ambrosia beetle.

Ambrosia beetle traps in Ellicott City MD caught 6 beetles. Ambrosia beetles are flying and we have been getting reports of beetles attacking trees, so be sure to continue to monitor for signs of borer activity and treat to protect susceptible trees. See the [April 18, 2025 IPM Alert](#) for more information on ambrosia beetles and treatment.

We will continue to run the ambrosia beetle traps and keep you informed on what we find.

If anyone finds ambrosia beetle activity in trees, please let me know (pshrewsbury@umd.edu and copy sklick@umd.edu) where, when, and on what type of tree and send pictures.



Frass “toothpicks” and several holes from ambrosia beetle attack can be seen on this ‘Stellar Pink’ dogwood.
Photo: Mason Broderick

Lady Beetles Feeding on Scale Insects

Bob Mead, Mead Tree Experts, found lady beetle eggs and a *Hyperaspis* lady beetle larva on crape myrtle this week. With the many species and infestations of scale insects throughout the area on plant material, it is good to see these beneficial insects show up to help suppress pest populations. To tell the difference between these wax-covered lady beetle larvae and pest insects like crapemyrtle bark scale or mealybugs, poke the larva. If it moves faster, then it is a lady beetle. Also, check on the underside of the body. Lady beetle larvae have chewing mouthparts and long legs.



Yellow lady beetle eggs and a lady beetle larva are on the trunk of this crape myrtle.
Photo: Bob Mead, Mead Tree Experts



Hyperaspis lady beetle flipped over to show legs and chewing mouthparts underneath the body.
Photo: Sheena O'Donnell, UME

Beneficial of the Week

By: Paula Shrewsbury

Flashes in the night

I saw my first fireflies of the season in Sharpsburg, MD on May 17th; and this week I saw fireflies flashing in Columbia, MD. It looks like it is going to be another good year for fireflies based on the amazing display of flashing lights so far.

Fireflies, also known as **lightening bugs**, are neither bugs nor flies. They are beetles in a group known as soft-winged beetles in the order Coleoptera and the family Lampyridae. There are over 2,200 known species of fireflies worldwide, of which about 165 species have been reported in the U.S. and Canada. In the U.S., the abundance of fireflies is greater in the Eastern than in western states. Interestingly, species of fireflies that produce light are uncommon in western North America. Some firefly species are diurnal, and therefore have no need to create light. These species are known as daytime dark fireflies, and they use chemical pheromones rather than light flashes for mate attraction. Although the adult daytime dark fireflies do not light, the larvae do glow at night, like eastern firefly species.

Most flashing firefly species occur east of the Mississippi River, are about ¾” in length and are active at dusk into the evening. Adults and larvae of many firefly species exhibit bioluminescent – they glow in the dark! Many organisms such as bacteria, fungi, jellyfish, algae, fish, clams, snails, crustaceans, and of course insects exhibit bioluminescence. Firefly species have special light organs that make the underside of their abdomens light up. **How do fireflies make light?** The light emitted by a firefly is actually a chemical reaction in the beetle’s abdomen. The light organ has special cells that contain a chemical called luciferin. An enzyme called luciferase combines oxygen with luciferin in these cells to create light. Scientists actually do not know how fireflies regulate their lights to turn them on and off. You might have also noticed how “cold” the light looks. This is because no infrared (or heat) or ultraviolet frequencies of light are emitted. Among the light-producing fireflies, lights are yellow, green, or pale red.



An adult of the common eastern firefly, *Photinus pyralis*. In this picture, the head is sticking out from underneath the shield-like projection (pronotum) of the thorax. Photo by M.J. Raupp, UMD

Why do fireflies bioluminescence? The purpose of this bioluminescence varies. It is believed that the flashes are part of a signaling system for attracting mates. Both males and females emit light intermittently or in specific flash patterns. The recurrent flash patterns produced are specific for each species of firefly and vary by sex within a species. The flashes that we see are from the males that are attempting to attract a mate. For example, males of the common eastern firefly (*Photinus pyralis*) flash every six seconds. Females watch the light “show” and if a display from a specific male of her same species is particularly attractive to her, she will flash a response. The male makes his way to her location to mate with her. In addition to transferring sperm to the female during copulation, the male offers a nuptial gift of rich protein, which the female uses to provision the eggs that will soon start to develop in her ovaries. [Click here to see a video of fireflies flashing and mating](#) (by M.J. Raupp, UMD) – watching insect behavior is really interesting. Interestingly, in one species of firefly, *Photuris pensylvanica*, the female mimics the flash pattern of another species, *P. pyralis*, to attract the male of the other species to her. When the male of the other species arrives thinking, he has found his mate - she eats him to obtain defensive compounds used to protect her eggs. A bad surprise for that male!



Underside view of an adult firefly showing the abdomen where the light organ is located (white segments of the abdomen). Photo by M.J. Raupp, UMD

For the common eastern firefly, *P. pyralis*, eggs are laid in moist soil and hatch about a month later. All immature fireflies (or larvae) are called **glow-worms** (see image). The larvae emit light too, though it is a low intensity glow rather than flashing like adults. The larvae of our eastern firefly develop over two summers, so they

overwinter twice, before pupating and emerging as adults. Most firefly are reported to pupate in rotting logs or the furrows in the bark of tree trunks.

Why are fireflies considered

beneficials? Well, the soil active firefly larvae or [glow worms are voracious predators](#) of soft-bodied invertebrates and known to feed on slugs, snails, worms, and other soil-dwelling insects.

Glow worms use their mandibles to inject prey with a paralyzing neurotoxin, making it defenseless, and then secrete digestive enzymes that liquify the prey

making it easier to consume. What a way to go. Glow-worms are believed to glow as a warning signal telling predators not to eat them as they are mildly toxic and taste nasty. It is not well known what adult fireflies feed on but some feed on pollen and nectar and some are reported not to feed at all.



Glow-worms, larvae of fireflies, are predators that live in the soil and search for prey. They also glow in the evening.

Photo by M.J. Raupp, UMD

Although the larvae of most fireflies are referred to as glow-worms, this is not quite correct. Technically, glow-worms are a type of firefly where the adult female is flightless and maintains the appearance of a larva and she emits a long-lasting glow, similar to larvae. The males have the appearance of an adult firefly. To make it more confusing, other insect larvae that glow, are sometimes called glow-worms too.

Since most fireflies that produce light are in the Eastern U.S., it makes the nightly light shows we encounter here something special to behold during spring and early summer. Be sure to help young people you know, and others, enjoy the experience of observing and collecting fireflies. Be certain to release the little lights when you are done!

To learn more about fireflies go to this National Geographic YouTube : <https://youtu.be/0BOjTMkyfIA?si=OoVm5L2vb8sUt2c7>

Weed of the Week

By: Chuck Schuster

Recent wet weather is helping our less than desired plants get a good jump. Remember that the definition of a weed is a plant whose economic value has yet to be determined. Soils are remaining cool for this time of year. Though soils have warmed in the last 7 days, our warmup has been delayed. I have noticed weeds really start to gain a foothold in areas that have not received good management.

Hemp dogbane, *Apocunum cannabinum*, is a perennial herbaceous plant weed that is found in many areas of the United States. This plant can be found in many different locations, including landscapes, nursery, forest fringe areas and in turf on occasion. This plant is poisonous if ingested. Hemp dogbane will grow to a height of six feet, starting from a taproot with an extensive, branched, horizontal root system that produces vegetative buds along the lateral roots allowing it to grow in clumps or colonies. Roots from a two-year-old plant will be found to grow fourteen feet in depth and twenty feet in diameter. The leaves will be opposite on the upright stem, being up to five inches in length, and one to one-and-one half inch in width. The leaves will have a short petiole attachment to the stem, and will have only a few if any hairs on the underside of the leaves. The stems will develop a reddish color as they mature, and will have multiple branches nearer to the top of the plant. The entire plant will secrete a milky sap when cut or broken, the sap being able to cause skin blisters. Flowers will

occur on terminal clusters, be bell shaped, small, white or very light green in color with five petals, producing a small pair of long narrow seed pods called follicles that will turn reddish brown when fully mature. These pods can be four to eight inches in length. Very similar to spreading dogbane, the flowers of this plant are pinkish-white and form in cluster found on the main stems, at the end of principle branches and at stem nodes her the leaves are attached to stems. Spreading dogbane is also a perennial and will present with similar root characteristics. Another similar plant is common milkweed, *Asclepias syriaca* which shares a creeping root system, the milky sap when cut and opposite leaves. Young common milkweed will present with a leaf having fine hairs where hemp dogbane will not.

Control can be obtained in many settings through mowing and simple disturbance if caught in the early stages. Seed production should be monitored to prevent further occurrences. Hemp dogbane is most susceptible to herbicides between the late bud and flower stages. 2, 4D is very effective on turf providing excellent control. In landscapes and nursery settings, 2, 4D is not an option and careful targeted applications of glyphosate or glufosinate will be necessary for suppression or control. Organic control can be obtained using Burnout with a minimum of two applications several weeks apart. Most pre-emergent products do not produce good results in landscape and nurseries with hemp dogbane.

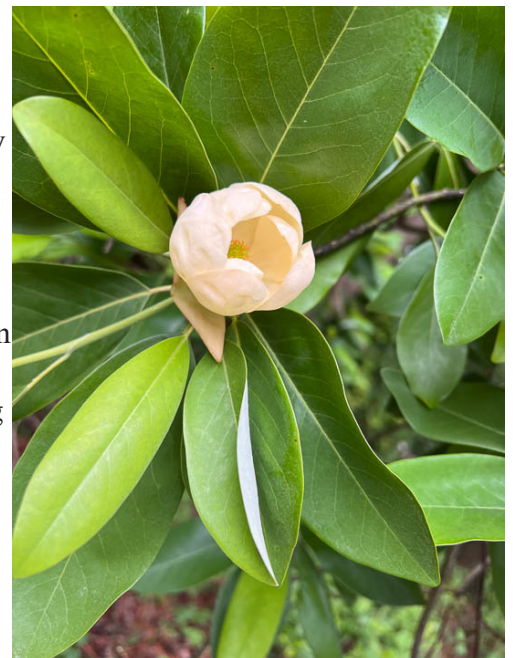


Hemp dogbane
Photos: Chuck Schuster, UME

Plant of the Week

By: Ginny Rosenkranz

Magnolia virginiana or sweet bay magnolia is a lovely native tree that depending on the temperature of the winter can be a deciduous to semi evergreen tree. The plants can grow 10-35 feet tall and 10-20 wide. They thrive in full sun to partial shade, and prefer to grow in moist, organically rich, acidic soils and tolerate boggy wet soils. Sweet bay magnolias can be grown as a single trunk tree but usually have multiple trunks. The 2-3 inch creamy white, lemon scented flowers are made up of 9-12 thick petals, and can bloom from May to September and sometime up to the first frost. The solitary cup shaped waxy flowers open in the morning then close for the evening for up to 3 days in a row, gradually turning a soft yellow. The flowers mature into dark red fruit that are up to 2 inches long and are cone like with many overlapping segments. The fruit contains bright red seeds that mature in the autumn, and dangle by thin stems that attract the native birds. The 3-6-inch-long leaves are attached to



Sweet bay magnolia flower starting to open.
Photo: Ginny Rosenkranz, UME

the branches in an alternate fashion, and cluster at the ends of the branches. Each leaf is glossy and dark green on top and silvery, slightly fuzzy on the bottom of the leaf. The colors of the leaves are very attractive when there is a breeze to show off both the tops and bottoms of the leaves. Sweet Bay Magnolias are cold tolerant in USDA zones 5-10 and are tolerant of air pollution, salt, clay and wet soils. The plants provide for the Spicebush Swallowtail, the Eastern Tiger Swallowtail, deer brows on the foliage and twigs, sap suckers visit and drill their small holes in a straight line in early spring and the seeds are enjoyed by the native birds and small mammals. Some wonderful cultivars include Moonglow®, a tall and narrow shape which has survived temperature as low as -28° F and ‘Santa Rosa’, with large dark glossy green leaves that grow to 8 inches long.



Sweet bay magnolias can continue bloom through the summer.

Photo: Ginny Rosenkranz, UME



Sweet bay magnolia 'Moonglow' in the landscape.

Photo: Ginny Rosenkranz, UME

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 **749 DD** (Greater Cumberland) to **1198 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.

Juniper scale – egg hatch / crawler (**694 DD**)

San Jose scale – egg hatch / crawler (1st gen) (**723 DD**)

Crapemyrtle bark scale – egg hatch / crawler (1st gen) (**724 DD**)

Calico scale – egg hatch / crawler (**765 DD**)

Oak lecanium scale – egg hatch / crawler (**789 DD**)

- Rhododendron borer – adult emergence **(815 DD)**
- Japanese maple scale – egg hatch / crawler (1st gen) **(829 DD)**
- Dogwood borer – adult emergence **(830 DD)**
- European elm scale – egg hatch / crawler **(831 DD)**
- European fruit lecanium scale – egg hatch / crawler **(904 DD)**
- Cryptomeria scale – egg hatch / crawler **(937 DD)**
- Azalea bark scale – egg hatch / crawler **(957 DD)**
- Hibiscus sawfly – larva, early instar **(1015 DD)**
- Japanese beetle – adult emergence **(1026 DD)**
- Fletcher scale – egg hatch / crawler **(1105 DD)**
- Spotted lantern fly – first adult activity **(1112 DD)**
- Fall webworm – egg hatch (1st gen) **(1142 DD)**
- Indian wax scale – egg hatch / crawler **(1145 DD)**
- Oriental beetle – adult emergence **(1147 DD)**
- Peachtree borer – adult emergence **(1181 DD)**
- Catalpa Sphinx – egg hatch (1st gen) **(1365 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.

Degree Days (as of June 4, 2025)

Annapolis Naval Academy (KNAK)	873
Baltimore, MD (KBWI)	965
Belcamp (FS836)	790
College Park (KCGS)	941
Dulles Airport (KIAD)	909
Ellicott City	839
Ft. Belvoir, VA (KDA)	1003
Frederick (KFDK)	825
Gaithersburg (KGAI)	870
Greater Cumberland Reg (KCBE)	749
Martinsburg, WV (KMRB)	807
Millersville (MD026)	886
Natl Arboretum/Reagan Natl (KDCA)	1161
Perry Hall (C0608)	776
Salisbury/Ocean City (KSBY)	892
St. Mary's City (Patuxent NRB KNHK)	1198
Westminster (KDMW)	998

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 calculator Thresholds in: Fahrenheit °F Lower: 50 Upper: 95 Calculation type: simple average/growing dds Start: Jan 1

Conferences

June 17, 2025 (afternoon)

IPM Scouts' Diagnostic Session

Location: CMREC, Ellicott City, MD

[Registration Information](#)

June 18, 2025

[Eastern Shore Pesticide Recertification Conference via Zoom](#)

June 18, 2025

MAA Evening Plant Diagnostic Clinic

Location: Hood College, Frederick, MD

[Registration Information](#)

June 24, 2025

Stanton A. Symposium and Lab Dedication

Location: CMREC, 4240 Folly Quarter Road, Ellicott City, MD 21042

Co-Sponsors: University of Maryland Extension and Maryland, Nursery, Landscape, and Greenhouse Association (MNLGA)

MNLGA is handling [the registration](#) for this symposium.

June 27, 2025

Pesticide Recertification Conference

Location: Montgomery County Extension Office, Derwood, MD

[Registration information](#)

July 24, 2025

MNLGA Growers Day at North Creek Nurseries

[Program and Registration Information](#)

September 11, 2025

MNLGA Field Day

Location: Raemelton Farm, Adamstown, MD

October 29, 2025

FALCAN Truck and Trailer Safety Seminar

Location: Urbana Fire Hall, Urbana, MD

Commercial Ornamental IPM Information

<http://extension.umd.edu/ipm>

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