

Commercial Horticulture

July 31, 2026

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**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:

Laura Nixon, IPM Specialist in Entomology, University of Maryland Extension, Lnixon1@umd.edu, and Paula Shrewsbury, Professor and Extension Specialist in Ornamental and Turf IPM, Department of Entomology, pshrewsbury@umd.edu

Regular Contributors:

Pest and Beneficial Insect Information: Laura Nixon and Paula Shrewsbury (Extension Specialists) and Nancy Harding, Faculty Research Assistant
Disease Information: David Clement (Extension Specialist) and Ana Cristina Fulladolsa (Plant Pathologist and Director, UMD Diagnostic Lab)
Weed of the Week: Kelly Nichols and Nathan Glenn, (UME Extension Educators) and Dan Buonaiuto, (Assistant Professor), Dept. of Plant Sciences and Architecture
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)

Walnut Petiole Galls

By: Suzanne Klick

Joni Desherow, Fine Landscapes, found reddish-brown galls on the petioles of black walnut this week. The walnut petiole gall is caused by the eriophyid mite, *Aceria caulis*. This gall is specific to black walnut. Galls start out green, then turn pink, before becoming reddish brown. Small hairs give them a felt-like appearance. The galls do not impact the overall health of the tree, so control is not necessary.



As they mature, the walnut petiole galls become a reddish brown.

Photo: Joni Desherow, Fine Landscapes

Armored Scale Update

By: Laura Nixon

Japanese maple scale (*Lopholeucaspis japonica*) have mostly developed into the “settled crawler” stage. This means they are no longer at their most vulnerable stage. Settled crawlers begin to develop their hard outer layer, which makes contact treatments less effective. If you have a population of concern on your trees, systemic insecticides, such as dinotefuran or flupyradifurone (ex. Altus, an EPA reduced risk insecticide), can be effective against this life stage. Marie Rojas did find the twice stabbed lady beetle predating on Japanese maple scale, so be mindful of natural enemies when treating and try to avoid broad spectrum chemicals.



Twice stabbed lady beetle predating on Japanese maple scale.

Photo: Marie Rojas, IPM Scout

Marie Rojas popped the covers of some **white prunicola scale** (*Pseudaulacaspis prunicola*) in Frederick County early in the week to find eggs present. Crawlers may already be active now; we expect them to be active over the next week. This is the second generation for 2026, and this species has a third generation later in the summer/early fall. Although this species has a range of reported host tree, they generally favor Prunus species, so scout your cherry laurel, flowering cherries, peaches etc. now for signs of crawlers. White prunicola scale crawlers are tiny and pink-colored. Target crawlers with insect growth regulators (IGRs) such as pyriproxyfen (ex. Distance, Fulcrum) or buprofezin (ex. Talus) for control.

The sourgum scurfy scale (*Chionaspis nyssae*) has been causing leaf spotting on *Nyssa sylvatica* (black tupelo, black gum, sourgum). This is the time of year when crawlers are active. Leaf damage begins as expanding white or yellow spots and can develop red rings. If you are seeing signs of crawlers, or these damage symptoms, now is the time to treat with IGRs as mentioned above for white prunicola scale crawlers.



Pop open the hard covers of white prunicola scale to see the female bodies and yellow eggs.
Photo: Marie Rojas, IPM Scout



White leaf spotted (left) and darker red rings forming (right) on *Nyssa sylvatica* leaves from sourgum scurfy scale damage.
Photos: Marie Rojas, IPM Scout

Crapemyrtle Bark Scale Crawlers are Active

By: Laura Nixon

The second generation of crapemyrtle bark scale (CMBS) (*Acanthococcus lagerstroemiae*) crawlers are active this week. If you have a small, localized population of CMBS, prune out the heavily infested branches to reduce population numbers and minimize spread. If your trees are heavily infested, crawlers can be treated with horticultural oil or labeled insecticides. When selecting insecticides, select chemicals which are kinder to beneficial insects, since we have seen predatory *Hyperaspis* lady beetle larvae and lacewing larvae predating on both egg sacs and crawlers. There is observational data to suggest that high numbers of these natural enemies can assist in reducing CMBS populations throughout the summer.

This week, we were sent photos of CMBS populations on American beautyberry by Luke Gustafson (Davey Tree Experts). He reported that there were numerous crape myrtle trees at this same site with low scale populations and the highest CMBS numbers were on the beautyberry. There have been various reports of CMBS on this native plant, however, we haven't received any reports of damaging levels of scale on beautyberry. If this changes, let us know and send your photos to the IPM Report (Lnixon1@umd.edu or sklick@umd.edu).



Crapemyrtle bark scale on American beautyberry.
Photo: Luke Gustafson, The Davey Tree Expert Company

Walnut Caterpillars

By: Suzanne Klick

Joni Desherow, Fine Landscapes, found late instar walnut caterpillars (*Datana integerrima*) on black walnut this week. Other plant hosts include hickory, butternut, and pecan trees. Young caterpillars skeletonize the leaves. Later instar caterpillars feed on all but the leaf midrib. Early instars are reddish yellow, mid-instars are red with faint white stripes, and the last instar is dark gray to black covered in long white hairs. There are likely two full generations in Maryland. Walnut caterpillars overwinter in the ground in the pupal stage. Caterpillars molt in a large group and leave behind their cast skins attached to the tree. Control is usually not necessary. Birds and other predators feed on these caterpillars.



These late instar walnut caterpillars will go down into the soil to pupate.

Photo: Joni Desherow, Fine Landscapes

Catalpa Defoliation

By: Laura Nixon

This week, Marie Rojas (IPM Scout) reported defoliation of nursery catalpa trees. The insect behind this is the catalpa sphinx moth caterpillar (*Ceratomia catalpa*). Female moths lay large clutches of eggs, and the caterpillars that hatch feed gregariously. This can cause fairly widespread defoliation on even a larger tree. Catalpa sphinx moths are a native species, and so there are numerous natural enemies which predate on them, including a parasitoid wasp which lays its eggs in the caterpillars. Generally, we don't recommend treating for these caterpillars as moth trees will recover from this damage. However, if you are seeing high numbers of smaller caterpillars on young catalpa trees, you can treat with Bt (*Bacillus thuringiensis*) products, which is effective on the caterpillars whilst preserving beneficials.



Catalpa sphinx caterpillar.
Photo: Marie Rojas, IPM Scout



A defoliated catalpa tree from caterpillar feeding.

Photo: Marie Rojas, IPM Scout

Aster Yellows in Echinacea

By: David Clement and Karen Rane

We've had a number of inquiries about Echinacea's with abnormal flower development and color. Flower symptoms include stunted greenish-white ray flower petals, and often green leafy growths protruding from the blossom centers. This problem is caused by aster yellows which belongs to a group of plant pathogens that are called phytoplasmas. This group is related to bacterial pathogens however; their cells have flexible membranes and have no cell walls making them pleomorphic in shape. They are single celled and reproduce by fission like bacteria. They are intracellular parasites and are non-motile. They are spread through the plant inside the phloem. The aster yellows pathogen is spread to ornamentals by phloem-feeding leafhoppers, primarily the aster leafhopper, *Macrosteles quadrilineatus* formerly *fascifrons*. Aster yellows can infect over 300 species of woody and herbaceous ornamentals, vegetables and weeds in 38 plant families as well as a number of grain crops.

This phytoplasma is transmitted when infected leafhoppers feed on the phloem of an infected plant such as a weed host. Leafhoppers acquire the pathogen, but there is an incubation period, sometimes referred to as a latent period, which may take 2-3 weeks, where the pathogen multiplies within the leafhopper, and then moves to the salivary glands. Only then is the leafhopper capable of transmitting the pathogen to another plant. After feeding, it can take 10 days to 3 weeks, depending on temperature and plant species for the appearance of plant symptoms.

The aster leafhopper can overwinter in the egg stage in Maryland that can result in mid to late season infections. Frequently, however this insect also begins developing down south early in the spring where they build up large populations. These southern adults will then migrate on the prevailing winds and jet streams that frequently move northward in the spring. Depending on weather and wind patterns these insects may arrive earlier in the season ready to transmit the disease.

Management:

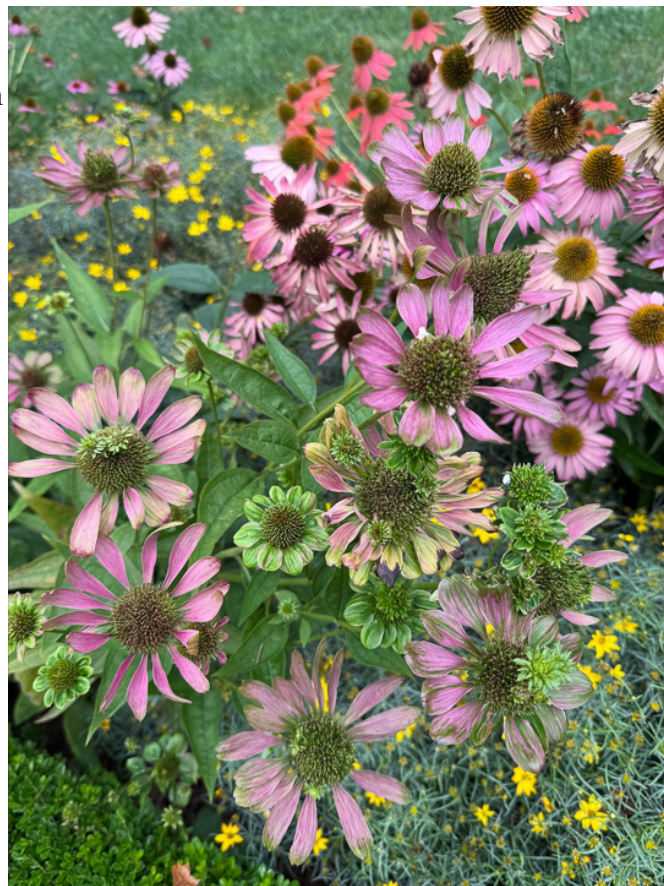
Infections are systemic throughout the plant and therefore plants are not “cured” by removing symptomatic flowers. Promptly remove infected plants when symptoms are first noticed to prevent spread throughout the rest of the planting.

Weed hosts such as wild carrot, field daisy, dandelion, thistles, ragweed, marestail, and pineappleweed which are often symptomless should also be removed where possible since they can serve as symptomless reservoirs for future infections. Monitor susceptible plants frequently for symptoms and destroy any that appear to be diseased. Early detection and prompt removal of infected plants may help reduce the spread of the disease.

Trash Bugs!

By: Laura Nixon

Lacewing larvae will cover themselves in detritus picked up from their surroundings as camouflage. You can still see their prominent jaws beneath ready to feed on some of your (least) favorite pests including scale, aphids, thrips and more!



Aster yellows on purple coneflower.
Photo: Claire Duncan, Fine Landscapes



Lacewing larva covered in detritus.
Photo: Marie Rojas, IPM Scout

Cicada Killer Wasps

Cicada killer wasps have been active in our area this week. Female cicada killers dig burrows in the ground to lay their eggs. They are often found in dry, somewhat sandy and bare soils. Adult females provide paralyzed cicadas for the developing larvae. They provide two cicadas to a nest that will produce a female, and one cicada for a nest that will produce a male. Adult males are often seen flying around areas with burrows to defend their territory, but since they do not have stingers, they are harmless. Females are not aggressive and are not likely to sting humans.



Cicada killer wasps are mating at this time of year and adult females are laying eggs.

Photo: Suzanne Klick, UME

Beneficial of the Week

By: Paula Shrewsbury

Introduced and native parasitoids of the invasive Brown marmorated stink bug

For the last few weeks, I have written about parasitoids and their diverse biologies, and the parasitoids associated with emerald ash borer management. This week I want to write about parasitoids that attack and kill the invasive brown marmorated stink bug (BMSB), *Halyomorpha halys*. BMSB is native to several Asian countries and was first detected in the U.S. in Pennsylvania around the mid-1990's, and in Maryland in 2003, though crop damage and the huge densities in MD and the region did not occur until 2009. This was followed by several years of extremely high densities of BMSB in MD and other mid-Atlantic States. BMSB were severe economic pests of crops and nuisance pests invading homes and other structures. BMSB is now established in 47 states. In more recent years, BMSB populations and their associated damage have been much less. Those of us who have spent years studying BMSB believe that these lower populations are due to a combination of factors such as natural enemies, unfavorable weather, and, with increased knowledge, better management by practitioners.



This image demonstrates the extremely small size of *Trissolcus japonicus*. No worries that these wasps could sting you.

Photo: A. Colavecchio, USDA ARS, D3224-1)

Natural enemies of BMSB consist of a complex that include non-native and native parasitoids and several species of generalist predators. Like we discussed last week, one of the first steps to managing an invasive species is to implement a *classical (a.k.a. importation) biological control approach*. In this approach, USDA scientists traveled to Asia and searched for natural enemies that were suppressing BMSB in that country. Several species of parasitoids that attack the eggs of BMSB were brought back to the U.S. where they were

placed in USDA quarantine facilities and underwent several years of research to evaluate the potential efficacy of the parasitoids and for detrimental non-target effects if released in the U.S. Of the egg parasitoid species brought back, the most promising species was *Trissolcus japonicus* (Scelionidae), a tiny wasp that parasitizes eggs of BMSB and other stink bug species. To my knowledge, the USDA has not approved releases of *T. japonicus* through this program.

But the story of *T. japonicus* continues with a very interesting twist. In 2014, the exotic, not yet released *T. japonicus* was found emerging from a BMSB egg mass collected from a patch of woody trees bordering agricultural fields in Beltsville, MD. What a surprise that was! The wasps were sent to a lab for genetic analysis to determine if these wasps were “related” or from the same population as those in quarantine. Fortunately, they were not related to the quarantine population!

What this suggests is that somehow *T. japonicus* was also accidentally introduced into the U.S. just like BMSB. It is not often the good insect is introduced with the pest insect. The next season in 2015, the Shrewsbury Lab found *T. japonicus* in nurseries in Laytonsville and Adamstown, MD. Moreover, since the first U.S. detection of *T. japonicus*, it has been detected in 14 other states and Washington, D.C. indicating it has been dispersing on its own. Genetic testing of these wasps determined that there are 3 genetically distinct strains of *T. japonicus* in the U.S. What this indicates is that *T. japonicus* was accidentally introduced 3 separate times. I am glad they are good guys. Although parasitism rates vary by region, crop, and time, studies have shown that *T. japonicus* (common name Samurai wasp) has reached between 70 – 90% in some areas. Good news.

Because BMSB is an exotic herbivore I have often been asked if there are any native natural enemies that attack it, and will they have an impact on BMSB populations. This was a question that I and several students in my lab pursued to answer through research. We did extensive studies in woody plant nurseries to address these questions. We found 7 species of native parasitic wasps attacking the eggs of BMSB and an assortment of generalist predators that fed on the eggs and other life stages of BMSB.

What did we learn about native egg parasitoids? Two of the native parasitoids found attacking BMSB eggs are in the genera *Trissolcus* and one in the genera *Telenomus* (Family Scelionidae), one in the genera *Ooencyrtus* (Family Encyrtidae) and three were in the genera *Anastatus* (family Eupelmidae). First, *Trissolcus* are specialist egg parasitoids of bugs in the family Pentatomidae (ex. stink bugs). In Asia, there are *Trissolcus* spp. that provide biological control of BMSB so we predicted U.S. *Trissolcus* may also attack BMSB eggs. However, our studies found that our native *Trissolcus* accounted for less than 2% of all the parasitoids that emerged from BMSB. In fact, each of the other egg parasitoid species accounted for less than 1% of parasitoids that emerged



An adult samurai wasp inserts its egg into a BMSB egg in the BMSB egg mass.

Photo: Chris Hedstrom, Oregon Department of Agriculture



BMSB egg masses that have been parasitized by the samurai wasp will be dark gray or black in color as the wasps mature within the eggs.

Photo: Chris Hedstrom, Oregon Department of Agriculture

from BMSB except for *Anastatus*. Of most interest was that over 95% of the parasitoids emerging from BMSB eggs were *Anastatus reduvii*. *Anastatus* is a generalist parasitoid which attacks a wide range of insect eggs across different orders. *Anastatus* attacks eggs of not only stink bugs, but other Hemiptera such as assassin bugs, eggs of Lepidoptera such as orange striped oak worm, and even grasshopper and mantid eggs. A study conducted in 2012 and 2013 found average parasitism rates of BMSB eggs by *A. reduvii* of 32% and 44%, respectively. Native *Anastatus reduvii* attack and kill BMSB at relatively high rates.



A native *Anastatus* parasitoid has just found a BMSB egg mass on a leaf and is assessing if it will parasitize the eggs.

Photo: Paula Shrewsbury, UMD

Generalist predators found in association with BMSB include birds, mammals, spiders, assassin bugs, predatory stink bugs, lacewings, pirate bugs, and several other insect predator species. The complex of natural enemies have worked together to successfully reduce BMSB populations to the levels we see today in the mid-Atlantic region. Go biological control!

[Click here to see a great video of *T. japonicus* parasitizing eggs of BMSB, parasitoid development, and the parasitoid emerging.](#)

Weed of the Week

By: Nathan Glenn

Velvetleaf (*Abutilon theophrasti*)

If you've ever brushed against a weed with leaves that feel as soft as velvet, you've probably encountered velvetleaf (*Abutilon theophrasti*). Native to southern Asia and introduced to North America in the 1700s as a potential fiber crop, velvetleaf has since become a troublesome weed in agricultural fields, nurseries, landscapes, roadsides, and other disturbed areas throughout much of the United States. In several states it is listed as a noxious weed, although it is not currently designated as noxious in Maryland. Its rapid growth and ability to shade neighboring plants make it a particularly competitive weed in crop and nursery settings.



Figure 1: Velvetleaf growing habit in a turfgrass setting.

Photo: Cheryl McKinlay

Identification

- ☐ **Growth habit:** Upright summer annual reaching up to 5 feet tall, usually with a single coarse stem that branches near the top.
- ☐ **Leaves:**
 - ☐ Alternate and broadly heart-shaped
 - ☐ Typically 2–6 inches across

- Densely covered with soft hairs on both surfaces, giving the plant its characteristic velvety texture
- Prominent veins radiate from a single point at the base of the leaf
- **Stem:** Thick, coarse, and densely hairy
- **Root system:** Shallow taproot
- **Flowers:**
 - Bright yellow, about ½–1 inch across
 - Five petals
 - Produced singly or in small clusters where the leaf stalk meets the stem
 - Bloom from mid-summer into early fall
- **Fruit:** Distinctive cup-shaped seed capsules made up of 12–15 woody segments that resemble a tiny crown. Each segment releases one to three seeds at maturity.



Figure 2: Velvetleaf root system.
Photo: C. Schuster, University of Maryland

Fun Fact: Velvetleaf seeds are remarkably persistent. Although many seeds germinate or decline over time, some can remain viable in the soil for 50 years or more, making prevention of seed production one of the most important management strategies.

Habitat & Timing

- Common in nurseries, landscapes, gardens, roadsides, agronomic crops, and other disturbed sites
- Prefers fertile, sunny locations
- Germinates in late spring as soils warm and flowers from July through August, with seeds continuing to mature into the fall.



Figure 3: Velvetleaf leaf.
Photo: C. Schuster, University of Maryland

Control

Cultural Control

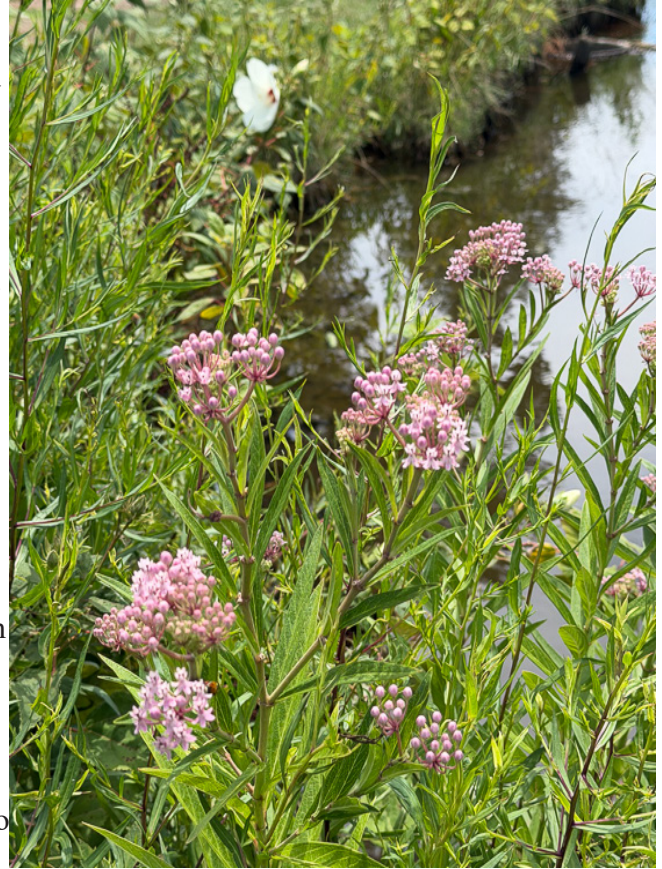
- Scout for and remove seedlings early before they flower and produce seed.
- Prevent movement of contaminated compost, livestock manure, mulch, or nursery stock into clean areas.
- Because seeds remain viable for decades, preventing seed production is essential to long-term management.
- Hand pulling is effective for young plants before the taproot becomes established.

Management Tip: Velvetleaf's soft, velvety leaves make it one of the easier broadleaf weeds to identify. If you suspect you've found it, gently rub the leaf surface between your fingers—the dense covering of fine hairs gives it a texture unlike almost any other common landscape weed. Just be sure to wash your hands afterward, as with any weed handled in the field.

Plant of the Week

By: Ginny Rosenkranz

Asclepias incarnata or swamp milkweed is a beautiful herbaceous perennial that thrives in full sun and prefers to live in wet or moist slightly acidic soils. The plants will grow 3-5 feet tall and 2-3 feet wide, making a beautiful accent plant. The ¼ inch fragrant flowers come in pink to mauve or white and are grouped together on clusters called umbels at the top of each stem. Each tiny flower has 5 upright crowns and 5 surrounding petals that droop downwards. The fragrant flowers provide nectar for monarch butterflies and other native pollinators. Flowers bloom from summer into fall and mature into showy 3-4-inch-long seed pods that split on one side to release the seeds with tufts of hair that float on the wind. The seeds start out green and mature to copper -brown or tan-cream colors. Each 3-5 feet green stem will exude a toxic milky sap when cut or bruised. The clasping, oblong green 3-6-inch-long leaves have a smooth or entire margin and are attached to the stems in an opposite fashion. Monarch caterpillars feed on the foliage, but both deer and rabbits leave the plants alone. These colorful flowers will thrive beside ponds or streams, in rain gardens, pollinator gardens and butterfly gardens. Although there are no significant disease problems, there are a lot of insects that are attracted to the plants. Aphids, milkweed beetles feast on the foliage and monarch butterflies and milkweed tussock moths lay their eggs that hatch into caterpillars to feed on both the foliage and the seed pods.



Swamp milkweed prefers wet to slightly acidic soils.

Photo: Ginny Rosenkranz, UME

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 **1979 DD** (Clarksville) to **2766 DD** (Nat'l Arboretum/Reagan Nat'l). 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.

Orangestriped oakworm – egg hatch / early instar (**1917 DD**)

Magnolia scale – crawler (**1938 DD**)

Fall webworm – egg hatch / early instar (2nd gen) (**1962 DD**)

Maskell scale – egg hatch / crawler (2nd gen) (**2035 DD**)

Euonymus scale – egg hatch / crawler (2nd gen) (**2235 DD**)

Mimosa webworm – larva, early instar (2nd gen) (**2260 DD**)

Japanese maple scale – egg hatch / crawler (2nd gen) (**2508 DD**)

Fern scale – egg hatch / crawler (2nd gen) (**2813 DD**)

Spotted lanternfly – egg laying (**Sept.**)

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 29, 2026)

Annapolis Naval Academy (KNAK)	2436
Baltimore, MD (KBWI)	2433
Belcamp (FS836)	2330
Clarksville (001MD)	1979
College Park (KCGS)	2514
Dulles Airport (KIAD)	2450
Ft. Belvoir, VA (KDA)	2550
Frederick (KFDK)	2219
Gaithersburg (KGAI)	2348
Greater Cumberland Reg (KCBE)	2178
Martinsburg, WV (KMRB)	2260
Millersville (MD026)	2428
Natl Arboretum/Reagan Natl (KDCA)	2766
Perry Hall (C0608)	2264
Salisbury/Ocean City (KSBY)	2414
St. Mary's City (Patuxent NRB KNHK)	2583
Westminster (KDMW)	2576

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

IPM Diagnostic Session (1 - 3 p.m.)

August 26, 2026

Location: CMREC, Ellicott City, MD

[FALCAN Truck & Trailer Safety Seminar](#)

October 14, 2026

Location: Urbana Fire Hall, Urbana, MD

Registration opens in July.

2027 Advanced Landscape IPM PHC Short Course

This is a recertification short course for arborists, landscapers, IPM consultants, horticulturalists, professional gardeners, and others responsible for urban plant management. The course lectures will be held over four days at the University of Maryland, College Park, MD. In addition, there will be a hands-on lab following lecture (available to a limited number of course attendees). Coordinators: Drs. Paula Shrewsbury and Mike Raupp, Dept. of Entomology, University of Maryland

Lecture dates: Monday, January 4 - Thursday, January 7, 2027 from 8:00 am – 3:00 pm

Lab dates: Monday, January 4 - Thursday, January 7, 2027 from 3:30 pm – 5:30 pm (space limited)

Course information: <https://landscapeipmphc.weebly.com/>

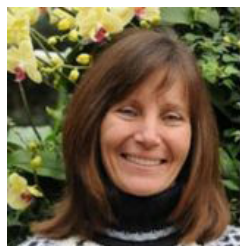
Registration: <https://www.eventbrite.com/e/2027-advanced-landscape-ipm-phc-short-course-tickets-1992372702386?aff=oddtcreator>

Questions contact: Amy Yaich, 301-405-3911, umdentomology@umd.edu

Commercial Ornamental IPM Information

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

CONTRIBUTORS:



Paula Shrewsbury
Extension Specialist
pshrewsb@umd.edu



Laura Nixon
Extension Specialist
lnixon1@umd.edu



David Clement
Plant Pathologist
clement@umd.edu



Ana Cristina Fulladolsa
Plant Pathologist
acfulla@umd.edu



Nathan Glenn
Extension Educator
Howard County
nglenn@umd.edu



Nancy Harding
Faculty Research
Assistant



Kelly Nichols
Extension Educator
Montgomery County
kellyn@umd.edu



Dan Buonaiuto
Assistant Professor
Dept. of Plant
Sciences and Land-
scape Architecture
dbuona@umd.edu



Andrew Ristvey
Extension Specialist
aristvey@umd.edu



Ginny Rosenkranz
Extension Educator
Wicomico,
Worcester, Somerset
Counties
rosnkrnz@umd.edu

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