UNIVERSITY OF MARYLAND EXTENSION

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

Commercial Horticulture **July 18, 2025**

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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

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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)
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Armored Scales – Time to monitor for 2nd generation crawlers

By: Paula Shrewsbury

Many scale insect species are key pests of landscape and nursery ornamentals. There are about 15 different families of scales. One of the most common families is the Diaspididae, referred to as armored or hard scales. Armored scales vary in the number of generations per year (1-4 generations), depending on species. If you look at the Pest Predictive Calendar or the *Pest Predictive Calendar "Predictions"* summarized at the end of this IPM Alert, for the current Degree Day (DD) accumulations, you will find there are multiple armored scale species that should be at or approaching 2nd generation crawler activity. These armored scales include:

Maskell scale (*Lepidosaphes pallida*, 2nd generation crawler activity ~ 2035 DD) is most commonly found on Cryptomeria and causes browning on branches from the tips back. They can also get on several other evergreen species.

Euonymus scale (*Unaspis euonymi*, 2nd generation crawler activity ~2235 DD) prefer Euonymus species and can also be a problem on pachysandra and boxwood. The two generations of crawlers often overlap.

Japanese maple scale (*Lopholeucaspis japonica*, 2nd generation crawler activity ~2508 DD) is one of our most serious scale pests that attacks many landscape and nursery trees. Crawler emergence occurs over long periods of time (~6-7 weeks).

Fern scale (*Pinnaspis aspidistrae*, 2nd generation crawler activity ~2813 DD) is found on true ferns and very commonly on liriope plants in the landscape and nursery.

Recommendations. Monitor host plants of these scales if your area has accumulated the DD stated above. Target the crawler or settled crawler stages with the insect growth regulators (IGR) buprofezin (ex. Talus) or pyriproxsyfen (ex. Distance). Systemics such as dinotefuran or flupyradifurone (ex. Altus, an EPA reduced-risk product) should also work well. If densities of these armored scales are high, consider applying a dormant oil application at the appropriate time.

For more information on life cycle, host plants, damage and management of these scales, go to:
Maskell scale
-UMass Extension fact sheet
-UME fact sheet (scroll down to Maskell scale)
Euonymus scale –
-UME fact sheet
-NCSU Extension fact sheet
Japanese maple scale
-UME fact sheet
Fern scale
-NCSU fact sheet

Maskell scale female (larger) and male (smaller) on Cryptomeria. These scales are very small (~1/16”).
Photo: Lorraine Graney, Bartlett Tree Experts, Bugwood.org

Euonymus scale female (brown oystershell shape) and males (white elongate shape) can be found on leaves and stems.
Photo: Edward L. Manigault, Clemson University Donated Collection, Bugwood.org

Japanese maple scales are small, white and oystershell shaped and mainly found on the bark of host trees.
Photo: Paula M. Shrewsbury, UMD

Fern scale females (brown) and males (white).
Photo: John A. Davidson, UMD, Bugwood.org

Spotted Lanternfly Update – Adult activity increasing this week

By: Paula Shrewsbury

Adult and late instar nymph activity. Since the last IPM Alert (July 11th), there has been an uptick in adult spotted lanternfly (SLF, *Lycorma delicatula*) activity. Many of you have reported seeing adults from several areas of the state. Fourth instar (last immature stage) SLF nymphs are also still active.

Spotted lanternfly adult found on a car in College Park, MD.
Photo: P.M. Shrewsbury, UMD

What type of damage is expected by SLF?
SLF have sucking mouth parts that remove phloem sap from plants as they feed. Like most phloem feeding insects, SFL excrete honeydew. In areas with high densities of SLF, we will see abundant amounts of honeydew and the associated sooty moldy that grows on it causing *aesthetic damage* to plants with SLF, plants growing underneath trees with SLF, and similarly on driveways, cars, lawn furniture, etc. under SLF infested trees. Also associated with the sugar rich honeydew are *more stinging insects* – honeydew is used as a food resource for bees, yellow jackets, European hornets, and others. Their feeding *does not significantly harm most plants*. In heavy infestations plants can be come stressed, but the only plants known to be killed by SLF are grape vines, young walnut trees, and the invasive tree-of-heaven (*Ailanthus altissima*).

What can be done about SLF adults?
Non-chemical options. Although SLF has a wide host plant range, tree-of-heaven is one of its more commonly used host trees. **Removing tree-of-heaven** will help to reduce SLF populations. Go to *https://extension.umd.edu/resource/tree-heaven/* for information on how to identify tree-of-heaven and proper removal strategies. Note that just cutting tree-of-heaven down will result in growth of numerous suckers. In the last IPM Alert we discussed the use of circle traps and other traps for **trapping SLF**. If sticky traps are used, be sure to use ones that exclude non-target organisms. There is a suite of generalist **natural enemies** that feed on SLF. Conserve natural enemies, when possible, by reducing pesticide use or toxicity and creating environments that favor natural enemies.
Chemical controls. As already mentioned, SLF do not kill most plants so only use chemicals when SLF damage is significant and spot treat only in those areas. Short-residual products, for example those that contain neem oil or natural pyrethrins, will reduce populations and have reduced impacts on natural enemies. Repeated applications may be necessary. Many landscape and other professionals use systemic products such as dinotefuran (note neonicotinoids can only be applied by certified pesticide applicators in MD (follow the law). Use of trap trees is a practice that uses reduced amounts of systemic insecticides and provides suppression of SLF.

For more detailed information on SLF biology and management options, go to:
https://extension.psu.edu/spotted-lanternfly-management-guide (include tables of chemical options and non-chemical tactics)
https://extension.psu.edu/tree-of-heaven (includes information on using tree-of-heaven as trap trees to reduce SLF populations.
https://extension.umd.edu/resource/spotted-lanternfly-home-gardens/
Spotted Lanternfly in Home and Community Landscapes (UME HGIC)
To report SLF activity in MD go to: https://survey123.arcgis.com/share/26f9dbec58674313b1bec03ddb8b5f0e

Daylily Leafminer (*Ophiomyia kwansonis* Sasakawa)

By: Suzanne Klick ,UME

Karen Rane, Retired-UMD, found daylily leafminer activity in Silver Spring this week. Feeding by the fly larvae causes white serpentine mines in the leaves. There are at least two generations per year in Maryland. Look for all stages on plants throughout the growing season.

Control: Leafminers are usually not present in high enough numbers to impact the overall health of the plant, so do not warrant control measures. Removal and destruction of infested leaves when you first see the damage helps reduce the numbers of leafminers.

These serpentine mines indicate the activity of daylily leafminers.
Photo: Karen Rane, Retired-UMD

Ailanthus Webworm

By: Suzanne Klick, UME

While monitoring invasive, *Ailanthus* (tree-of-heaven) trees for spotted lanternfly, you might also find webbing produced by the caterpillars of Ailanthus webworm. Dave Freeman, Oaktree Property Care, found activity on tree-of-heaven in Nokesville, VA this week. The caterpillars, pupae, and adult moths can be found within and on the webbing. The orange, white, and black adults are often found nectaring at a vareity of flowers in mid to late summer. There are multiple generations in Maryland and all stages can be found throughout the summer. Ailanthus webworms do not occur in large enough numbers to have much of an impact on reducing the invasive tree-of-heaven population.

From bottom to top in the webbing, there is a caterpillar, several pupae, and and adult Ailanthus webworm.
Photo: Dave Freeman, Oaktree Property Care

Southern Blight

By: David L. Clement

With the recent hot humid weather and afternoon thunder storms, we've noticed an increased incidence of southern blight. Southern blight, also called southern wilt, southern stem rot, southern root rot and other names, results from infection by the soilborne fungus *Sclerotium rolfsii.* Southern blight has a wide host range, affecting over 500 plant species including many herbaceous ornamentals and even woody nursery stock. The fungus can be spread through movement of infested soil, plant debris, infected plants, contaminated irrigation water, and contaminated tools. The fungus survives in the soil as small tan sclerotia. The sclerotia resemble tiny seeds and are usually attached to plant parts. Plants are attacked at the soil line, or just below ground. The fungus produces abundant mycelia on infected parts and in the soil. The presence of the sclerotia is the main diagnostic feature of this disease. The initial symptoms are similar to those caused by other basal stem rots causing discolored crown and stem lesions at the soil line which leads to discoloration of lower leaves, wilting, plant collapse, and death.

Management

Sanitation is the first course of action. Remove all infected plants, including surface soil and roots. Dispose infected plants and soil off site. Perform deep tillage to bury any remaining sclerotia. Remove excessive mulch away from plant stems and leave bare soil at the plant crown.

Prevention with fungicides is more effective than trying to cure already infected plants. Fungicide options include tebuconazole, flutalonil, propaconizole, azoystrobin and fluoxastrobin.

Southern blight has infected this Rudbeckia plant; this disease attacks plants at the soil line or just below ground.
Photos: Richard Uva

Eastern Hercules Beetle

Dave Freeman, Oaktree Property Care, found an adult female Eastern hercules beetle in Fairfax, VA this week. It is the male beetle that has the two horns. Females lay eggs in rotting tree stumps. Larvae feed on decaying wood. Adults feed on fermenting sap and fruits and can be found flying around lights at night. The light and dark areas on a the beetles indicate moisture levels. As the elytra dry, they become lighter tan instead of dark brown. These beetles are harmless to humans.

Adult Eastern hercules beetles are active now. This female was found in Virginia.
Photo: Dave Freeman, Oaktree Property Care

The male Eastern hercules beetle has the two horns.
Photo: Suzanne Klick, UME

Box Tree Moth / Caterpillar – Be on the lookout for this new invader!

By: Paula Shrewsbury

Box tree moth (BTM), *Cydalima perspectalis* (Lepidoptera: Crambidae) is another invasive species that is a significant threat to boxwood (*Buxus* spp., BTM's major host), and therefore the nursery and landscape industries. BTM is native to Eastern Asia. It is already a severe invasive pest of boxwoods in Europe and was first detected in North America in Toronto, Canada in 2018. In 2020-2021 BTM was shipped with boxwoods from a nursery in Ontario Canada to 25 retail locations in the Eastern U.S. It was first detected in the U.S. in 2021 and is spreading relatively quickly – often via nursery stock, and adult flight. Presently populations of BTM have been found in Massachusetts, New York (2021), Michigan (2022), Ohio (2023), Pennsylvania and Delaware (2024) and most recently West Virginia (2025). There have been unconfirmed reports of BTM in Northwest Virginia.

BTM is getting close to Maryland! Basically, most states surrounding MD have BTM. In WV BTM was detected this year on June 18th in Hedgesville and then this month (July) it was found in Martinsburg – both in Berkeley County, WV. Berkeley County is in the north-east panhandle of WV where it borders Washington County, MD. Yikes!

BTM is almost to MD. **Everyone needs to monitor for BTM damage, and various life stages** (egg, 7 larval instars / caterpillars, pupa and adult moth). BTM will likely have 3-4 generations per year in MD and can cause significant defoliation and death to boxwoods. The earlier we can catch BTM, the better we can slow it down and hopefully reduce its damage.

Below are images of BTM life stages and damage, links to additional sites with more detailed information and images so you know what to look for when you are monitoring boxwoods. Since there are multiple generations a year, we cannot say what life stage(s) would be present at this time.

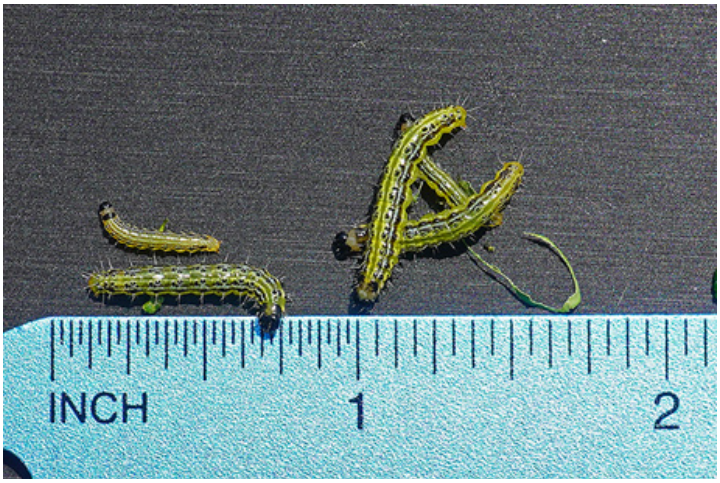
If you see BTM and/or BTM damage to boxwoods please let me know (pshrewsbury@umd.edu and sklick@umd.edu). Be sure to include the date found, location, and pictures. The **MD Department of Agriculture (MDA) also should be contacted at ppwm.MDA@MD.gov with the same information and pictures.** If you send information to me, I will forward the information to MDA. If you are a nursery producer, contact your MDA Nursery Inspector.

Links for detailed information and pictures of BTM life stages and damage:
UME - https://extension.umd.edu/resource/box-tree-moth/
BTM OSU Part 1- https://ohioline.osu.edu/factsheet/ent-0099
BTM OSU Part 2- https://ohioline.osu.edu/factsheet/ent-0100
BTM OSU Part 3- https://ohioline.osu.edu/factsheet/ent-0101
BTM MDA - https://mda.maryland.gov/plants-pests/Documents/Box%20Tree%20Moth%204x9.pdf

Box tree moth adult noting characteristic marks.
Photo: Joe Boggs, OSU


Box tree moth eggs. Each circle is a caterpillar. If the egg is further developed, you may be able to see the caterpillar inside.
Photo: AdobeStock


Damage to the upper leaf surface of boxwood by early instar box tree moth.
Photo: Joe Boggs, OSU



Box tree moth caterpillars do not get large.
Photo: Joe Boggs, OSU

Different box tree moth caterpillar stages and messy appearance from box tree moth feeding.
Photo: Joe Boggs, OSU

Typical "curlicue" feeding damage caused to boxwood by box tree moth.
Photo: Joe Boggs, OSU

A more habitus view of box tree moth feeding damage to boxwood.
Photo: Joe Boggs, OSU

Box tree moth pupal cases start out green and then become more colorful as they develop.
Photo: Joe Boggs, OSU

Beneficial of the Week

By: Paula Shrewsbury

Dung beetles – beneficial in so many ways

Dung beetles (Family: Scarabaeidae) are a group of beneficial beetles that primarily use dung (a.k.a. feces, poop, waste) of mammals for feeding and nesting. Dung beetles are classified as recyclers, and they play a critical role in recycling animal waste into the soil. There are three classifications of dung beetles based on their nesting and feeding habits: the dwellers, tunnellers, and rollers. When **dweller dung beetles** come upon a pile of dung, they burrow to the inside of the pile where they eat, mate, and lay eggs. The larvae hatch from eggs and spend their life in the dung which is their food source and home. When **tunneller dung beetles** find dung, the female digs a tunnel in the soil near the dung. She drags small pieces of dung down into her tunnel and shapes them into lumps. The lumps are called brood balls because she lays a brood (cluster) of eggs in the lump of dung. A tunnel may have multiple brood balls within it. Male dung beetles compete for a female and her tunnel which he guards until he mates with her and lays eggs. He wants to ensure he is the father of her larvae. **Roller dung beetles** are the coolest, at least I think so. The male dung beetle get dung from a pile and use his hind legs to form an impressive dung ball. If a female likes his dung ball, the male rolls it away and begins burying the dung ball in the ground. The female then lays eggs in the dung ball in the ground, which hatch, feed, and develop in the dung ball.

A male rainbow dung beetle has an incredible horn that he uses to push dung around.
Photo: P.M. Shrewsbury, UMD

A dung beetle rolls a ball of dung using its back legs.
Photo: Tashkoskim, via Wikimedia Commons

The unique life cycle and behaviors of dung beetles result in many **benefits to human-altered and natural ecosystems** and they are considered a keystone species (important to healthy functioning of ecosystems). A lot of research has focused on dung beetles and their benefits. Dung beetle activities result in the addition and mixing of organic matter into the soil which benefits other soil animals and microbes and provides nutrients for plants. Dung beetles help to keep farm animals healthier by burying the dung of farm animals, making it unavailable for flies that bite and disturb animals to breed in, therefore reducing the number of biting flies. Similarly, parasitic nematodes of farm animals live on grass and are consumed by animals grazing on the grass. Nematode eggs develop in the dung that is excreted by the animals. Research showed that tunneling by dung beetles dry out the dung, killing the eggs and reducing the number of parasitic nematodes in the grass, leading to fewer infected animals. Dung beetle activity has also been shown to increase soil water infiltration, reducing runoff.

The density and number of species of dung beetles have been shown to be lower in conventional farms vs organic farms, likely due to the pesticides that are used in conventional farm practices. Pesticides used to

control parasites of cattle were found to also lower dung beetle diversity and density. Habitats where dung beetle species have disappeared have been shown to have fewer plants, reduced growth, and reduced seed dispersal. Large scale efforts to incorporate additional dung beetles into agro-ecosystems to increase their abundance and species richness, and their ecosystem services, are taking place (ex. Australia, New Zealand). Given all the benefits that dung beetles provide directly or indirectly, efforts should be made to conserve their populations and the ecosystem services they provide. Otherwise, we could end up in deep doo doo!

Click here for a good article on the benefits of dung beetles and programs to optimize their ecosystem services.

Weed of the Week

By: Chuck Schuster

Weather has been very warm in recent weeks. With soils contain adequate moisture in most areas, plants are growing. I notice many undesirable plants growing well. Soil temperature lows remain in the low 70 °F range even with the very warm daytime high air temperatures.

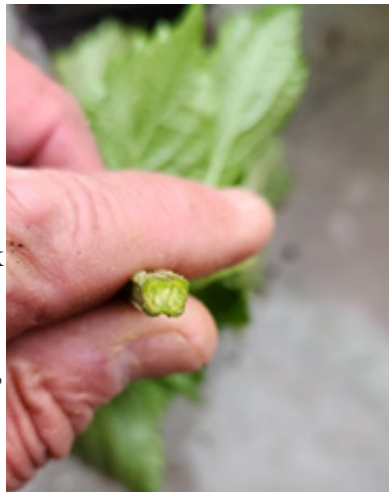


Photo 1- Square stem
C.F. Schuster, UME

During a review of my own landscape, I noticed an area that had several beefsteak plants growing. I had not noted them in this section of my landscape before. Beefsteak plant, *Perilla frutescens*, also called common perilla, purple perilla, purple mint, shiso, Chinese basil, wild basil, blueweed, Joseph's coat, wild coleus, rattlesnake weed, is a native of Asia. It is a member of the Mint family and is a traditional Asian crop used in cooking. It is an herbaceous **annua**l invasive found in Maryland and some surrounding states in turf edges near wooded areas or in landscapes.

Beefsteak plant will have opposite leaves, green to purple in color, oval (ovate) in shape occurring with a toothed margin, two to five inches in length, and one and one half to four inches in width. The stem is square (photo 1). It will have a distinct mint-like odor when handled. The flowers are white and purple, bell-shaped, with fine hairs, the upper portion is three toothed, and the lower portion being two toothed. The flowers occur in terminal clusters between July and October. Beefsteak plant has a fibrous root system (photo 2), and its seeds spread by wind or water movement. Very similar to basil and coleus, but the distinctive odor will help identify it. Beefsteak plant will grow to twenty-four inches in height.

Photo 2- Diffuse root system
C.F. Schuster, UME

Control of beefsteak plant can be done using manual removal, it is an easy to pull plant with the current moisture conditions. Prevention of seed production is very important, mowing can be used to handle this issue. Preventing seed production will be a start, but seeds from previous years can remain viable for several years in the soil. In landscape areas where herbicides may be used, using non-selective translocated herbicides that will include glyphosate products, can be considered. Other products that are effective will include Non-translocated products including Prizefighter (Ammonium Nonanoate) and Avenger (d-Limonene) can be used on the young plant successfully. In areas away from susceptible landscape plant material, Dicamba is a selective herbicide that can be used in combination with other products (2,4D) to control both annual and perennial broadleaf weeds. Dicamba does have the potential of volatilization, caution must be used when using near desired plant species. Early season identification and control is very useful.

Photo 3, Leaf shape
C.F. Schuster UME

Plant of the Week

By: Ginny Rosenkranz

Monarda fistulosa also called wild bergamot, is a clump forming native perennial in the mint family that thrives in full sun to partial shade with excellent air circulation, and dry to medium moisture and are tolerant of some drought. Bergamot grows 2-4 feet tall, spreading 2-3 feet, and can spread by seed. The fragrant, pink to lavender flowers are created with 2-lipped tubular flowers that are densely back on a terminal head or calyx. Each flower head sits on a whorl of showy pinkish leafy bracts. Flowers are attractive to butterflies and hummingbirds for their nectar. The flowers also attract many bees, including 3 specialized bees, *Dufourea monardae*, *Perdita gerhardi* and *Protandreana abdominalis*. Native bees can make their nest in the dead hollow stems if the stems are cut back to 12-24 inches tall and are allowed to stay in the garden until they disintegrate on their own. A list of bees and wasps provided by Mt Cuba Center that visited the Monarda include bumble bee, cuckoo bee, honey bee, leaf cutter bee, long-horned bee, mason bee, mining bee, polyester bee, sweat bee, yellow-faced bee, paper wasp, Sphex wasp and weevil wasp. The butterflies and moths included the black swallowtail, cabbage white, clearwing moth, common buckeye, Eastern tiger swallowtail, fritillary, gray hairstreak, nonarch, pipevine swallowtail, red admiral, silver-spotted skipper, Sphinx moth, spicebush swallowtail, and sulphur. Their list of birds include the ruby-throated hummingbird, catbird, goldfinch, and sparrow. Although the plants are not as colorful as beebalm, the flowers still provide color and nectar in the landscapes from June to September. The flowers make excellent cut flowers or dry flowers. The fragrant and edible green leaves are attached to the square stems in an opposite fashion. Each leave is oblong with a toothed margin and grows 3-6 inches long and can be used to make teas. Powdery mildew can damage the leaves if the plants are stressed by drought and if the plants are over overcrowded with poor air circulation. Too much water can lead to root rot. On the positive side the plants are not enjoyed by either deer or rabbits due to their strong fragrance.

The flowers of wild bergamot attract 3 specialized bees as well as many other butterfly, bee, wasp, and moth pollinators.
Photos: 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 **1848 DD** (Greater Cumberland) to **2531 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.

Obscure scale – egg hatch / crawler **(1774 DD)**
Spotted lanternfly – egg laying **(1825 DD)**
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)**

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 16, 2025)

Annapolis Naval Academy (KNAK)	2042	Baltimore, MD (KBWI)	2157
Belcamp (FS836)	1945	College Park (KCGS)	2141
Dulles Airport (KIAD)	2076	Ellicott City	1987
Ft. Belvoir, VA (KDA)	2219	Frederick (KFDK)	1989
Gaithersburg (KGAI)	2052	Greater Cumberland Reg (KCBE)	1848
Martinsburg, WV (KMRB)	1923	Millersville (MD026)	2051
Natl Arboretum/Reagan Natl (KDCA)	2405	Perry Hall (C0608)	1918
Salisbury/Ocean City (KSBY)	2059	St. Mary's City (Patuxent NRB KNHK)	2531
Westminster (KDMW)	2270		

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

Conferences

July 30, 2025
IPM Scouts' Diagnostic Session (afternoon)
Location: CMREC, Ellicott City, MD
For more 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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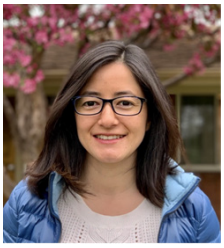

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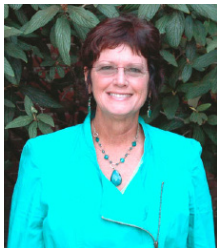

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