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

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)

Laura Nixon Joins UME as New IPM Specialist in Entomology



Dr. Laura Nixon began her position as the Extension Agent for Ornamental IPM and Entomology this week, based out of the Central Maryland Research and Education Center Clarksville Facility. Laura has over 10 years of experience working with invasive landscape pests, including the spotted lanternfly and brown marmorated stink bug. Prior to joining UME, Laura worked in post-doctoral positions based at the US Department of Agriculture Appalachian Fruit Research Station focused on insect pest monitoring and

sustainable pest management in orchards, vineyards, and small fruit. She is very excited to work with you all supporting the Maryland green industries and sharing educational materials with Maryland and beyond!

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Locust Borer Abundant on Goldenrod

By: Paula Shrewsbury

Joel Patton, Montgomery Co. Master Gardener, observed adult locust borers (*Megacyllene robiniae*, Coleoptera: Cerambycidae), a species of long-horned beetle, nectaring on the flowers of flat-top goldenrod (Asteraceae) this week. It is common to see lots of locust borer adults on a diversity of late season flowers. Locust borer only attacks black locust and usually those that are weakened or stressed. For more detailed information on locust borer and the damage it causes on black locust, see the [Aug. 16, 2024 IPM Alert](#) and a [Utah State Extension article](#) on them.



A locust borer, *Megacyllene robiniae*, adult shares goldenrod flowers with a bumble bee.
Photo: Joel Patton, Montgomery County Master Gardener



At this time of year, look for adult locust borers nectaring at flowers, such as this boneset flower.
Photo: Suzanne Klick, UME

Tea Scale: An armored scale pest of camellias

By: Paula Shrewsbury

Tea scale, *Fiorinia theae* (Hemiptera: Diaspididae), can be a serious pest of flowering camellias. Tea scale is also known to attack hollies, citrus and the tea plant (*Camellia sinensis*). This past Wednesday, October 24th, John Hochmuth (Harleigh Farm, Oxford, MD) gave me multiple plant samples with problems, including one of camellia leaves that were infested with tea scale. Tea scale is a small scale (females ~1/10th in. long) that live on the underside of the leaves. They are sexually dimorphic (males and females look different). Females have hard dark brown wax covers and males are narrow and produce white wax that covers their body. They feed on the underside of the leaves, and their feeding results in yellow blotches on the upper side of leaves. In heavy infestations left unchecked, plant bloom can be reduced, and premature leaf drop and branch dieback can occur. This insect has multiple overlapping generations per year and will continue to reproduce throughout the growing season making it difficult to control. When I looked at the Camellia sample under the dissecting microscope, not surprisingly, I saw all stages of tea scale active from adult females with eggs under her waxy cover, males under their white fluffy covers, to active crawlers.

Very early in the spring is the time to implement control measures when first generation crawlers are hatching (~195 DD). Plant phenological indicators (PPI) for first generation crawler hatch are beginning bloom of honey suckle and tulip poplar; 50% bloom of sugar maple or when henbit and chickweed are blooming. Visually check your camellias that have tea scale for crawler activity when these events are occurring. Target first generation crawlers with an insecticide labeled for armored scales. Also consider a dormant oil application to help reduce the population. Pruning to increase air circulation and aid in insecticide penetration is reported to help with management. Tea scale is classified as a hard to control scale and will likely take 2-3 years to get under control. Diligence is needed to be successful.

Monitor camellias and hollies now to determine if they have tea scale. If yes, then proceed as mentioned above. In the spring, please let us know when you see the first crawler activity (pshrewsbury@umd.edu and sklick@umd.edu).



Discoloration to the upper surface of camellia with tea scale feeding on the underside of the leaf.

Photo: Paula Shrewsbury, UMD



Tea scale on camellia.

Photo: Suzanne Klick, UME

2026 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 5 - Thursday, January 8, 2026 from 8:00 am – 3:00 pm

Lab dates: Monday, January 5 - Thursday, January 8, 2025 from 3:30 pm – 5:30 pm (space limited)

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

Registration: <https://go.umd.edu/ipm26courseregistration>

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

Multiple Armored Scale Pests on Holly

By: Paula Shrewsbury

Another plant sample that John Hochmuth (Harleigh Farm, Oxford, MD) shared with me this past Wednesday, was a holly that appeared to be infested with two different scale species. Upon further examination, I determined that the holly did indeed have two species of armored scale on it. They were Camellia scale (*Lepidosaphes camelliae*) and either false Florida red scale (*Chrysomphalus bifaciculatus*) or Florida red scale (*C. aonidum*). The *Chrysomphalus* species can only be distinguished from each other by slide mounting the scales and looking at very specific morphological characteristics.



Camellia scale on the underside of Chinese holly. The larger scales are females, and smaller are males.

Photo: J.R. Baker, NCSU

Host plants of **camellia scale** are most commonly camellia (of course) and hollies. The scale is mainly found on the lower leaf surface. The scale covers are light brown to brown and are elongate and oystershell shaped. Females (adults ~1/8") are larger than males and males are narrower. The test (first instar skin) can be seen at the tip of the scale cover (as opposed to the center as seen in some scales). The soft body of females and her eggs are white to light purple in color. Camellia scales overwinter as eggs under the covers of the then dead female. Details on the exact life cycle are somewhat scarce, but the eggs hatch in the spring or early summer. Monitor for crawler activity in the spring. There may be a second generation depending on weather so continue to monitor later in the season. Leaves of infested plants may or may not have yellowing and they drop prematurely, and bloom production may be reduced. There are several parasitoids and lady beetles that feed on Camellia scale and in some, but not all, situations they keep scale numbers low.

To the best of my knowledge, the second scale on the holly sample was **false Florida red scale (or possibly Florida red scale)**. The scale covers are mostly circular for females, and more oval and smaller for males. The soft bodied insect under the wax cover is yellow to dark yellow in color. Eggs are laid in the spring by females and remain under the wax cover until they hatch, when they crawl out and find a place to settle on the host plant. Two generations per year are reported. Be sure to monitor crawlers in the spring and later in the season for the second generation. This scale has a wide host plant range that include holly, aucuba, boxwood, camellia, euonymus, and more.



Life stages of Florida red scale.

Photo: John A. Davidson, Univ. Md, College Pk, Bugwood.org

For management, if population densities warrant, apply a dormant oil application. In the spring, target crawlers with an appropriately labeled insecticide. Avoid fertilizers high in Nitrogen which may lead to insects “doing better”.

Monitor camellias and hollies now to determine if they have scale problems. If yes, monitor in the spring for crawler activity. **In the spring, please let us know when you see the first crawler activity** (pshrewsbury@umd.edu and sklick@umd.edu).



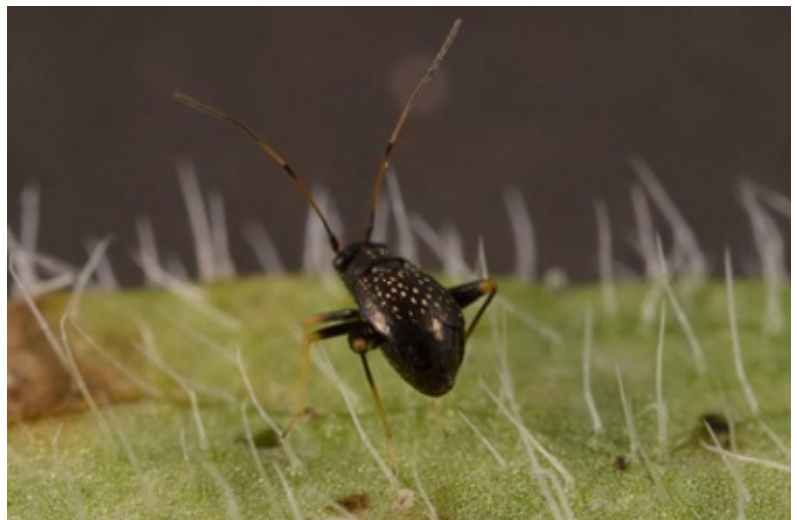
Life stages of false Florida red scale.

Photo: United States National Collection of Scale Insects
Photographs, USDA ARS, Bugwood.org

Garden Fleahopper (a bug) on Black-eyed Susan Vine

By: Paula Shrewsbury

Another plant sample that John Hochmuth (Harleigh Farm, Oxford, MD) shared with me this past Wednesday, was from black-eyed Susan vine (*Thunbergia alata*, Acanthaceae) that had heavy yellowing and stippling of the foliage. In the sample bag, there were numerous small black insects jumping and running around, and John and I both thought “flea beetles”. But then realized that did not make sense because the leaves were discolored, and there were no holes or other chewing damage on the foliage that would be caused by a flea beetle (chewing mouthparts). When I got back to the lab, I slowed the insects down by putting the sample in the refrigerator for a few minutes. I then could get a good look at the insect under the microscope. It was a bug, not a beetle, which made sense. This was a bug I had not seen before, so it took some detective work on my part to identify this bug.



Short-winged adult female garden fleahopper, *Microtechnites bractatus*.

Photo: Lyle Buss, UF/IFAS

The insects were a type of plant bug known as garden fleahoppers (*Microtechnites bractatus*, Hemiptera: Miridae). Garden fleahoppers are native to the eastern U.S. and Canada, though they have been found in other locations. They are called fleahoppers because they are small and readily jump. Their hind legs are somewhat enlarged, and they jump when disturbed. Adults are shiny black with yellow and black legs and antennae, and appear to have light-colored specks on the leathery parts of their front wings (half leathery and half membranous). Interestingly, adults come in different forms: females may be short-winged (brachypterous) or

long-winged (macropterous), while males are only long-winged. Male adults are thinner and more elongate (~1/16") than females; females (both long- and short-winged forms) are more robust and wider than males. Nymphs are a bright green color and become darker as they molt into later instars. Each female can lay 80 – 100 eggs which are inserted into leaf tissue.

The garden fleahopper has a wide host range with legumes often being damaged. Several vegetable and ornamental plants (especially annuals and perennials), and weeds are also hosts. Garden fleahoppers have sucking mouthparts and adults and nymphs suck the sap from individual cells resulting in whitish stippling on the foliage.

Black fecal spots will be seen on the underside of the foliage. Heavy feeding can cause stunted plant growth. Garden fleahoppers are reported to have up to 5 generations / year in VA and NC. This would suggest there are similar numbers in MD. Populations of garden fleahoppers can vary from year to year. There may be large numbers this year, and then few the next year.

Management. Parasitic wasps have been found to provide high rates of parasitism. Controlling weeds can reduce potential hosts of Garden fleahopper. Insecticides labeled for sucking insects could be used. Flupyradifurone (ex. Altus; EPA Reduced Risk insecticide) may provide control, though I have not seen any data on this.



Long-winged adult male garden fleahopper, *Microtechnites bractatus*.

Photo: Lyle Buss, UF/IFAS



Nymph of garden fleahopper, *Microtechnites bractatus*.

Photo: Paul M. Choate, UF/IFAS



Yellow to white stippling resulting from garden fleahopper, *Microtechnites bractatus*, feeding damage.

Photo: Paul M. Choate, UF/IFAS

Spotted Lanternfly: First report of egg masses

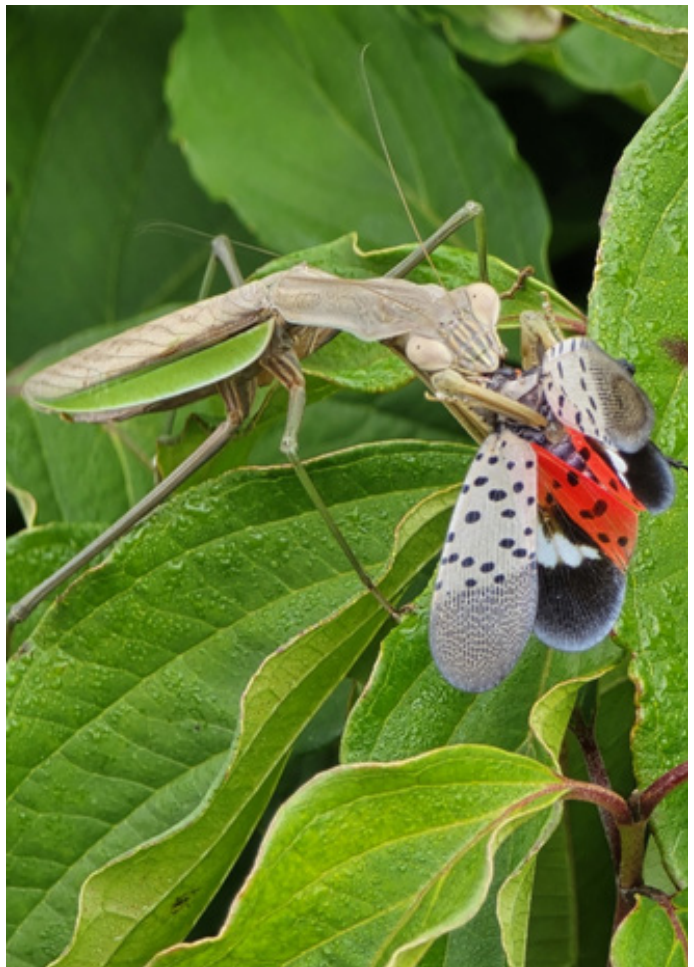
By: Paula Shrewsbury

Jess Boyle, MDA, reported the first egg masses deposited by spotted lanternfly (SLF) this season were found two weeks ago in Calvert County, MD. I would predict that eggs are being laid in more northern counties at this time. **If you see SLF egg masses, please email us (pshrewsbury@umd.edu and sklick@umd.edu) and let us know the date found, where, and on what type of plant.**

SLF will continue to lay eggs until the first hard frost which will kill the adults. In past years, I have seen dead adults with their mouthparts still inserted into the tree. I guess the SLF was getting as much sap as it could right up until the last minute. Recent research has shown that ~ 50% of egg masses laid on trees are in reach of people. Therefore, a control tactic is to remove egg masses before they hatch in the spring (by late April). For details on how to effectively find and remove egg masses go to: <https://extension.psu.edu/spotted-lanternfly-management-guide>



Egg masses of spotted lanternfly on a trunk of a tree. Note that some are covered with a protective covering of a white-grey putty-like material, while others are not covered and you can see the distinct rows of eggs.
Photo: P.M. Shrewsbury, UMD.



Praying mantis having an SLF snack.
Photo: Ben Morris, Sav A Tree



Spotted orb weaver spider (*Neoscona crucifera*) enjoying a spotted lanternfly meal at Arlington Cemetery.
Photo: Craig Gray, IPM Horticulturalist, Arlington Cemetery

Box Tree Moth

By: Paula Shrewsbury

Kim Rice, MDA, reported that there have not been any new reports of box tree moth (BTM), *Cydalima perspectalis* (Lepidoptera: Crambidae) in MD outside the original detection zone in Washington County in the areas of Big Pool, Clear Spring, Fort Frederick State Park, Hancock, and Williamsport.

Landscape managers - If you manage or grow boxwoods, you should be closely monitoring boxwoods for BTM and its damage, especially if you are in Washington County, MD or its neighboring counties.

Growers and retail centers – If you are receiving boxwoods be sure to inspect them thoroughly for BTM, especially if they are coming from areas that are positive for BTM. You may also want to put up BTM pheromone traps to assist in monitoring (see the link below).

If you see BTM and/or BTM damage to boxwoods please let us know (pshrewsbury@umd.edu and sklick@umd.edu). Be sure to include the date found, location, and pictures. **MDA should be contacted at ppwm.MDA@MD.gov with the same information and pictures.**

Resources - 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> (Focus on range and life cycle)

BTM OSU Part 2- <https://ohioline.osu.edu/factsheet/ent-0100> (Focus on damage, detection / monitoring)

BTM OSU Part 3- <https://ohioline.osu.edu/factsheet/ent-0101> (Focus on management)

<https://bugoftheweek.com/> (Box tree moth episode, Aug. 18, 2025)

BTM MDA - <https://mda.maryland.gov/plants-pests/Documents/Box%20Tree%20Moth%204x9.pdf>

BTM monitoring and trapping - <https://www.umass.edu/agriculture-food-environment/landscape/fact-sheets/box-tree-moth-monitoring-trapping>



Close up of a boxwood with a heavy infestation of the invasive box tree moth. Note the high number of caterpillars and damage (defoliation, frass, webbing).

Photo: Paula Shrewsbury, UMD

Beneficial of the Week

By: Paula Shrewsbury

Are yellow jackets good or bad? It depends on your perspective.

At this time of year there is an increase in yellow jacket (Hymenoptera: Vespidae) activity as they busily forage for food. **Why are yellow jackets so active and noticeable at this time of year?** As fall approaches, the yellow jacket colony must produce queens (fertilized females) that will ultimately overwinter and start next year's colonies. Yellow jacket workers are now searching furiously for insects or "meat" of some type (protein) and sugars to provide the additional nourishment that is needed to develop and prepare these potential queens for the long winter.

To make matters worse, with the large populations of the invasive spotted lanternfly (SLF) and their associated honeydew found in many areas, there appears to be more yellow jacket nests and yellow jacket stings. I know this from personal experience and feedback from multiple landscapers and arborists who work outside. In areas with SLF, you may be seeing higher than normal numbers of foraging yellow jackets at this time.

Yellow jackets, however, have two sides to them making it difficult to determine whether you should like them or not. On one hand they can result in severe discomfort when you unintentionally disturb a nest (ex. a lawn mower runs over a ground nest) and the workers swarm and attack you as they try to defend their nests; or when they land in your drink container and you accidentally "drink" them and get stung on the tongue (personal experience). In these cases, I would guess the victims of the stings would have the perspective that **yellow jackets are bad!** In cases of potential threat such as when nests are near a place where people frequent, it might be best to kill off the nests. On the other hand, yellow jackets are beneficial as they provide both pollination and biological control services. As adults, yellow jackets feed on the nectar of flowers assisting in the pollination of many flowering plant species. In addition, yellow jacket adults are voracious [predators of plant feeding herbivores such as many species of caterpillars](#), beetles, and other pests. Yellow jackets contribute towards the reduction of pest populations providing biological control. From the ecosystem services perspective, **yellow jackets are good!** If they pose no immediate threat to humans or pets, they should be conserved. Leave them be and let them do their thing.



Note the yellow and black banding on this adult Eastern yellow jacket, *Vespula maculifrons*.
Photo: J.N. Dell, Bugwood



Yellow jacket sharing someone's applesauce (sugars) with them.

Photo: Mike Raupp, UMD

There are many species of yellow jackets in North America, both native and non-native. Yellow jackets are wasps, not bees. One of the more common yellow jackets around here is the native Eastern yellow jacket, *Vespula maculifrons*. Another native yellow jacket that, with a warming environment, is now common in the DMV is the [Southern yellow jacket, *V. squamosa*](#). Typical yellow jackets are about 12 mm (0.5”) long and the queen is slightly larger; they have alternating bands of yellow and black on their abdomens and yellow faces. All females can sting, and most individuals can sting multiple times, with their modified ovipositor. Interestingly, many species of flies, beetles, and moths that do not have stingers mimic yellow jackets (Batesian mimicry) in their color patterns as form of protection (ex. predators think they have stingers and avoid them). Think about the many species of flower flies (Syrphidae) active in flowers.

Yellow jackets are social insects that live in colonies that contain workers and queens (females), and drones (males). Colonies (and their nests) are annual so only last one year. Only fertilized queens overwinter. They leave the nest in the fall and find a protected location such as under tree bark or in logs to hide and make it through the winter. Therefore, once cold weather hits the nest will die and is usually not re-used the next year. In the spring, the fertilized queens will start new colonies. Colonies or nests of yellow jackets can be [underground](#), in [dense shrubs or vegetation](#), tree cavities, or in man-made structures. Nests are built from wood fiber that the yellow jackets chew into a paper-like material. The outer shell of the nest encloses comb that supports the developing yellow jacket brood (young). Unlike honeybees, yellow jacket nests are annual and contain no honey or pollen. Although [adults feed primarily on items rich in sugars and carbohydrates](#) (fruits, flower nectar, tree sap, a sugar material secreted by brood, and honey dew from spotted lanternfly, soft scales, and other insects), the larvae feed on proteins (insects, meat, fish, etc.). Adult workers forage for “meat”, return to the nest, and chew and condition the “meat” that they then feed to the larvae. In this regard, yellow jackets kill many insects that are pests in our landscapes and nurseries. Next time you come across a nest of yellow jackets try to remember that they provide pest management and pollination benefits. Consider sharing your lunch with these “mostly” good guys.



Yellow jacket feeding on the honeydew (sugars) produced by soft scales.
Photo: Mike Raupp, UMD



Yellow jacket consumes a caterpillar (meat) to get some good protein.
Photo: J. McNichols from www.sustainableeats.com

Weed of the Week

By: Nathan Glenn

Queen Anne's Lace, also known as Wild Carrot (*Daucus carota*), is a **biennial weed** found in landscapes, nurseries, new lawns, and roadsides throughout much of the United States. Depending on your specific situation, Queen Anne's Lace may actually be desirable for its aesthetic beauty and its attractiveness to pollinators. In its **first year**, it grows as a low rosette of finely divided leaves resembling those of a common carrot. In its **second year**, the plant bolts, producing a tall, hollow flowering stalk topped with the familiar **flat, white, umbrella-shaped cluster of flowers** (an umbel). These distinctive flowers are often collected for use in dried arrangements.

Identification

- ☐ **Root:** Thick taproot, similar to cultivated carrot
- ☐ **Leaves:**
 - ☐ First year: Lobed rosette, finely divided
 - ☐ Second year: Alternate, lobed, and hairy on the underside (a key difference from yarrow)
- ☐ **Stem:** Hollow, upright, produced in the second year
- ☐ **Flowers:** Flat-topped white umbels, often with a small purple floret in the center

Fun Fact: Queen Anne's Lace is the ancestor of the domesticated carrot. European settlers brought it to North America, where it has since become widespread.

Look-Alike Caution: Poison Hemlock

Queen Anne's Lace is sometimes confused with **poison hemlock** (*Conium maculatum*), a highly toxic invasive plant. Here's how to tell them apart:

- ☐ **Queen Anne's Lace:** Hairy stems and leaves, usually one small purple flower in the center of the umbel, carrot-like smell when crushed.
- ☐ **Poison Hemlock:** Smooth stems with distinctive purple blotches, no hairs, no central purple flower, and a musty, unpleasant odor when crushed.

⚠ Important: Unlike Queen Anne's Lace, **poison hemlock is extremely poisonous** to humans and animals if ingested or handled improperly. Correct identification is critical.

Habitat

- ☐ Common in **nurseries, landscapes, pastures, lawns, and roadsides**
- ☐ Thrives in **sunny, disturbed soils**
- ☐ Can spread aggressively if not managed before flowering and seed set

Control

- ☐ **Turf settings:** Queen Anne's Lace is not generally an issue in mowed turf areas.
- ☐ **Landscape and nursery settings:**



Figure 1: Queen Anne's Lace flower.
Photo: Iowa State University Extension and Outreach



Figure 2: Queen Anne's Lace seedling.
Photo: Iowa State University Extension and Outreach

- Hand removal is an option, especially during the first year of growth
- Pre-emergent herbicide options are limited to products containing dichlobenil, but this is not labeled for landscape use.
- Post-emergent herbicides can be used carefully as spot treatments. These include products that contain clopyralid, diquat dibromide, or glyphosate. Make sure that these products are not applied to susceptible desirable species.
- If choosing to use chemical control options, be sure to read and adhere to all parts of the label. The label is the law.



Figure 3: Queen Anne's Lace whole plant with flowers.
Photo: Ernst Seeds

Plant of the Week

By: Ginny Rosenkranz

Heuchera americana 'Dale's Strain' is a native herbaceous perennial from eastern and central North America. The common name is coral bells or alumroot, which is astringent, and most root eating animals like voles and chipmunks will not feed on it. 'Dales Strain' is a cultivar selected by North Creek Nurseries and has silvery blue marbled foliage that has 5 – 9 hallow toothed lobes and dark purple, rose red to green veins. 'Dale's Strain' produced, tiny, pink, bell-shaped flowers. Plants grow in a mound with the leaves emerging in a dense spiral from a short central crown.



Heuchera americana
'Dale's Strain' plant
showing off the silvery
blue marbled foliage.
Photos: Ginny
Rosenkranz, UME

Degree Days (as of September 24, 2025)

Annapolis Naval Academy (KNAK)	3753
Baltimore, MD (KBWI)	3804
Belcamp (FS836)	3554
College Park (KCGS)	3793
Dulles Airport (KIAD)	3710
Ellicott City	3574
Ft. Belvoir, VA (KDA)	3890
Frederick (KFDK)	3598
Gaithersburg (KGAI)	3625
Greater Cumberland Reg (KCBE)	3357
Martinsburg, WV (KMRB)	3446
Millersville (MD026)	3674
Natl Arboretum/Reagan Natl (KDCA)	4220
Perry Hall (C0608)	3465
Salisbury/Ocean City (KSBY)	3642
St. Mary's City (Patuxent NRB KNHK)	4224
Westminster (KDMW)	4023

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

October 2, 2025

Operator Certification (FTC) for Writing Nutrient Management Plans for Nurseries, Greenhouses, and Controlled Environments

Location: Wye Research and Education Center, Queenstown, MD

October 29, 2025

FALCAN Truck and Trailer Safety Seminar

Location: Urbana Fire Hall, Urbana, MD

[For more information](#)

A list of Commercial Ornamental Horticulture Conferences through June 2026 is posted to our website on the [Conferences](#) page.

Commercial Ornamental IPM Information

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

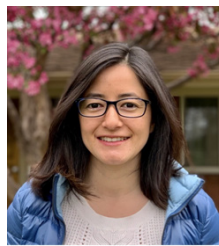
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