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Beneficial of the Week:

Fiery searcher beetle
(predator of caterpillars)

Weed of the Week: Henbit
(*Lamium amplexicaule*)

Plant of the Week: Yoshino cherry
(*Prunus x yedoensis*)

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IPMnet
Integrated Pest
Management for
Commercial Horticulture
extension.umd.edu/ipm

If you work for a commercial horticultural business in the area, you can report insect, disease, weed or cultural plant problems (**include location and insect stage**) found in the landscape or nursery to sgill@umd.edu

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Disease Information: Karen Rane (Plant Pathologist), David Clement (Extension Specialist) and Fereshteh Shahoveisi (Turf Pathologist)

Weed of the Week: Chuck Schuster (Retired Extension Educator), Kelly Nichols, Nathan Glenn, and Mark Townsend (UME Extension Educators)

Cultural Information: Ginny Rosenkranz (Extension Educator, Wicomico/Worcester/Somerset Counties)

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2024 IPM Scouts Training

Last week, we had the IPM Scouts' Training program. On the last morning, participants looked at the recent planting around our new building and discussed potential issues in the landscape. They also visited Greenway Farms in Cooksvilled to go over how to implement an IPM scouting program in a greenhouse.



Karen Rane, UMD, discusses issues around a tree planted last year.
Photo: Stanton Gill, UME

Temporary Closing of UMD Plant Diagnostic Lab

Greetings from Karen Rane!

As many of you are aware, I will be retiring from my position as Director of the University of Maryland Plant Diagnostic Laboratory on April 30. In order to have enough time to complete diagnostic samples, samples will be accepted until April 15, when the lab will be temporarily closed until a new Director is in place. In the interim, the diagnosticians at universities in neighboring states have graciously agreed to accept commercial plant problem samples from Maryland growers, landscapers and extension professionals. Home gardening inquiries from Maryland clients will continue to be served by the UMD Home and Garden Information Center's Ask Extension website: (<https://extension.umd.edu/programs/environment-natural-resources/program-areas/home-and-garden-information-center/ask-extension/>)

The following University labs will accept Maryland samples from commercial clients and extension professionals. The clinic websites include information on sample submission and fees (Note: The Virginia Tech clinic has agreed to charge Maryland growers the in-state fee while the UMD Diagnostic Lab is closed). Please contact the laboratories prior to sending samples.

University of Delaware (Jill Pollok) <https://www.udel.edu/academics/colleges/canr/cooperative-extension/sustainable-production/plant-diagnostic-clinic/>

Penn State University (Sara May) <https://plantpath.psu.edu/about/facilities/plant-disease-clinic>

Virginia Tech (Lina Rodriguez Salamanca) <https://spes.vt.edu/affiliated/plant-disease-clinic.html>

The search has begun for a new Director of the UMD Plant Diagnostic Lab, and we anticipate that the lab will re-open sometime this summer.

I have truly enjoyed working with you all, and I appreciate the support you've given me in my time as director.

Best wishes,
Karen Rane



**The IPM Scouts' Training group are learning aspects of scouting from Karen Rane, UMD.
Photo: Stanton Gill, UME**

Boxwood leafminer – (*Monarthropalpus flavus*, Diptera: Cecidomyiidae)

By Nancy Harding and Paula Shrewsbury, UMD

In Bowie, MD on April 2nd, we observed heavy boxwood leafminer damage and activity. Upon observation, there were “window panes” on the underside of the infested leaves (Fig. 1). These are made by late instar larvae as they are preparing to pupate (prepupation). The chew away most of the leaf material leaving just the membrane of the leaf so it is easy for the pupa, when ready, to push its way out of the leaf. When we dissected the leaf, the early pupal stage of the leafminer was present. The larvae are likely just pupating now. The wing and leg structures can be seen on one end of the pre-pupa. With time, the pupae will develop and push their way out of the leaf and eventually you will see pupal cases sticking out of the leaves. Based on our [Pest Predictive Calendar](#), boxwood leafminer adult emergence occurs when the growing degree days around 249 DD and serviceberry “Autumn Brilliance” is in full bloom. Note – See the end of this newsletter to see what DD accumulations are in your area.



Fig. 1. Clear somewhat circular “window panes” can be seen on the underside of boxwood foliage as boxwood leafminer development approaches pupation. Photo: P.M. Shrewsbury, UMD

This is not the time to apply control measures since the damage is done. You want to protect the new growth of the boxwoods. Emergence of adult leafminers are a target stage, along with the larval stages, for treatment. See the [April 9, 2021 IPM Newsletter](#) write up on boxwood leafminer for more information on control options.



Fig. 2. Close up image of the early pupal stage of the boxwood leafminer. You can see the start of the wing and leg structures on one end of the pupa. Pupae will continue to develop until about 249 DD accumulations. Photo: P.M. Shrewsbury, UMD

Emerald Ash Borer

By: Stanton Gill

We had an arborist ask the question- “Since Emerald ash borer has killed most of the green and white ash in customer’s landscape is it still worthwhile to continue treatment of uninfected ash trees since the overall EAB adult population is down from several years ago.” Here are comments from fellow entomologists in the Midwest.

From Dr. Dan Herms of Davey Tree, formerly with Ohio State University:

In trials conducted while I was at Ohio State, I found emamectin benzoate to provide three years of control even at low rates on 20-25 inch trees under very high pest pressure. We also found working with nursery stock that larvae could mature and adults emerge from one-inch trees. We continued to trap adults in

forests that had experienced 99% mortality of trees greater than one inch, albeit at very low levels. I’ve received anecdotal reports of renewed ash mortality as the “orphaned cohort” of ash seedlings and saplings mature. Dr. Kayla Perry at Ohio State Univ is looking at that, revisiting monitoring plots we established 20 years ago.



Emerald ash borer larva.
Photo: Suzanne Klick, UME

Dr. Joe Boggs of Ohio State University commented:

Arborists began to lengthen the time between treatments once EAB populations crashed here in southwest Ohio: imidacloprid and dinotefuran every 2-3 yrs., Emamectin benzoate 3-4 yrs. The protection seemed to hold. However, it’s important to remember that there is a potential for populations to rebound supported by regrowth from stump sprouts as well as germinating seeds. We’re seeing this in my part of Ohio and while it’s not likely that we’ll ever see the populations experienced during the original EAB “wave,” we are seeing enough adults to present a threat to unprotected or under-protected trees. This means that if tree care professionals decide to lengthen the time between treatments, ash trees should be closely monitored to detect a rebounding EAB population.

Here’s a BYGL Alert on the subject that we posted last season: <https://bygl.osu.edu/index.php/node/2166>



Manager (Facilities Manager)

The University of Maryland is accepting applications for a *Manager of their Turfgrass Facility* (FT), located at their Central Maryland Research and Education Center (CMREC)-Turfgrass Facility, College Park, MD 20742. **Duties:** This position is under the general supervision of the Center Director and is responsible for planning the daily operations of the facility, working with researchers and staff implementing projects, research and educational programming which includes coordinating the assignment and use of farm resources: land, building, equipment and supplies in the furtherance of research. This is a supervisory position. **Min. Qual.,** Bachelor’s degree from an accredited college or university with a concentration in Turfgrass Science and Management or Turfgrass Crop and Soil Science. Ten (10) years farm related experience or research/plot work. and three (3) years direct supervisory/management experience in a research environment is required. Interested persons can apply via our website at <https://ejobs.umd.edu/> (Position #103062). For consideration, please apply by April 26, 2024. **EOE/AA.**

Larvae in Turf

By: Stanton Gill, UME

I am getting emails and text messages of turf managers finding larvae in turf. The reports are coming from the southern part of Pennsylvania and Prince George's and Baltimore counties in Maryland. There are dozens and dozens of larvae being found in turf right now. The pictures appear to be either cut worms or fall armyworms. We have requested samples from several people in order to identify the larvae. If you are seeing larvae, please send me photos. I need to see the head capsule, a side view, and a top view. Please let me know where you found them and the population numbers, so we can determine if these infestations are widespread. Below are photos of what armyworms look like. I need to determine if this is the same thing we are seeing now.



Fall armyworm caterpillar.

Photo: Frank Peairs, Colorado State University, Bugwood.org



There is color variability with fall armyworm caterpillars.

Photo: Frank Peairs, Colorado State University, Bugwood.org

Spotted Lanternfly Update

From Jaime Tsambikos, MDA

Reminder to nurseries and other businesses moving materials and shipping nursery stock out of a quarantined area or through a quarantined area: Get a permit and use the information. You are breaking quarantine if any life stages of SLF are sent along with your product. It is your responsibility to make sure you and your employees are taking steps to remove SLF life stages by checking your materials multiple times and safeguarding materials prior to shipping, no matter how difficult the task.



SLF egg mass on black gum in Harford Co.
Photo credit: Plant Protection Staff

2024 Apple Bloom Phenology Updates: April 2, 2024

By: Kari Peter, Penn State Extension

The 2023–24 winter was milder than previous years, with a few winter storms interspersed between milder temperatures. Due to the warmer-than-average March temperatures, we recorded green tip in early blooming cultivars such as Pink Lady on March 11 in Rock Springs, PA, and a few days later in Biglerville, PA. Warm temperatures advanced flower bud development in most other cultivars, which hit green tip in the second to third week of March.

As all of you might have experienced, we had a scary third week of March with temperatures in the upper 60s and 70s (°F) from the 19th–23rd of March in most parts of the state, where many apple cultivars had progressed to a quarter or half-inch green. Immediately after this warm temperature spell, we had cold temperatures that arrested growth for a week. These cold temperatures, while arresting growth in apples, also lent themselves to two freeze events on the 21st and 24th of March that affected other stone fruit such as apricots, plums, and peaches. Apricots were in full bloom by then in many parts of the state, and some orchards lost their whole apricot crop, while others in southern PA got a good thinning effect on their apricots, plums, and peaches. Western Pennsylvania's growing regions also lost approximately 15–20% of their peach buds, which were already in the first pink stage due to the frost.

Moving on to the beginning of April, we have recorded apple bloom phenology stages in different parts of the state according to cultivar to provide a state-wide update on the status of our crop this season.

As many of you might be experiencing, we are having a flood of rainfall this week, delaying orchard operations, including spraying for pests and diseases and finishing up pruning. Based on temperature predictions for the next few weeks, things will be moving along quickly, with temperatures in the mid-60s for the most part around the state starting the second week of April.

It is too early to predict the initial fruit set for most apple cultivars. Still, based on initial observations from Biglerville, PA, quite a few blocks seem to have a regular set based on the bud counts, especially in Premier Honeycrisp and Honeycrisp. If a proper return bloom regimen was followed for Honeycrisp in 2023, it seems like we should get a regular crop of Honeycrisp, barring any freeze events. However, these predictions can significantly vary based on the weather patterns in April–May. Apple phenology conditions need to be monitored locally within one's own orchard.

This bimonthly/biweekly update series is made possible by a State Horticultural Association of Pennsylvania Extension Grant (Pennsylvania Apple Thinning Updates). We thank SHAP for the funding. These updates will continue until the end of May, when thinning season in all regions of Pennsylvania will be finished.

Gymnosporangium Rusts

By: David Clement and Karen Rane

Marie Rojas, IPM Scout, sent in several photos of gymnosporangium rust galls on junipers starting to become gelatinous. As temperatures warm up next week, the spores will be dispersed from these gelatinous structures by wind-driven rain to the alternate broadleaf hosts (rosaceous plants like crabapple, hawthorn and Amelanchier). The fungus causes significant damage to Amelanchier in particular – causing fruit infection as well as swollen cankers on twigs and subsequent twig dieback.

Timing is similar for the various gymnosporangium rusts, so now is the time to treat the alternate rosaceous hosts. There is a Penn State fact sheet with more information on these rusts and the plant hosts for each rust-host complex. and suggestions for resistant plants available at <https://apples.extension.org/table-of-juniper-hawthorn-and-crab-apple-resistant-to-rust-diseases/>.



Gymnosporangium rust galls on juniper are starting to swell and become gelatinous.

Photo: Marie Rojas, IPM Scout

Protectant fungicides should be applied to the rosaceous hosts before the spores become gelatinous on the juniper host. Spray applications rotated with Azoxystrobin products and Mancozeb products should give good management of foliar symptoms. Targeting the rosaceous hosts can help reduce infection, but timing can be a problem as spores from the juniper can be released throughout the spring and early summer. If rust infections are problematic in your area, selection of resistant junipers, crabapples, hawthorns, and serviceberries can significantly reduce disease damage.

Weather Impact

Mark Schlossberg, ProLawn Plus, Inc., reported that a tree in Ellicott City fell during the recent heavy rains. He noted how the 20 year old tree did not have much of a root system. Mark commented, "I think we are going to see a lot of this after all of this rain, especially if we get some windy days coming up."



**A shallow rooted tree came down during the recent heavy rains.
Photos: Mark Schlossberg, ProLawn Plus, Inc.**



**This magnolia, 'Madam Butterfly' bloomed, froze, and then bloomed again.
Photo: Ginny Rosenkranz, UME**

Pink Snow Mold

Mark Schlossberg, ProLawn Plus, Inc., found pink snow mold infecting a fine fescue lawn in Reisterstown this week. The fungal pathogen, *Microdochium nivale*, infects both turf blades and roots. Infection often occurs after there has been snow cover. For more information, [Penn State](#) and [NCSU](#) have fact sheets on pink snow mold.



Pink snow mold causes patches of white or tan areas in turf. Look for pink growth on the outer rings of these areas.

Photos: Mark Schlossberg, ProLawn Plus, Inc.

Beneficial of the Week

By: Paula Shrewsbury

Eastern tent caterpillars and cankerworms are munching on leaves... What's eating the caterpillars?

It is that time of year when eastern tent caterpillars and cankerworms are active, with other species soon to come. There never seems to be a shortage of caterpillar species that love to consume foliage of various ornamental trees and shrubs. So what eats caterpillars? Fortunately, there is not a shortage of natural enemies that like to eat caterpillars. There are numerous parasitoids (wasps and flies) and generalist predators that attack caterpillars. Predators include birds, mammals, bugs, beetles, and spiders. Numerous species of songbirds consume tent caterpillars such as robins, blue jays, cardinals, orioles, chickadees, nuthatches and many more.

Today, I want to focus on the beautiful, large (~1.5"), predatory beetle known as the fiery searcher or caterpillar hunter. The name fiery searcher comes from the ability of this beetle to move rapidly through the forest as it searches for prey. This species of ground beetle (Carabidae, *Calosoma scrutator*), along with other *Calosoma* species, prefers arboreal (forages up in trees) habitats. This is unusual because most "ground" beetles forage for prey on the ground (obviously). Besides its large size, most notable is the coloration of the fiery searcher, which consists of metallic green outer wings edged with gold and the head and thorax are bluish-black. Both the adult and larval stages are predacious. The fiery searcher is a common predator in ornamental and turfgrass systems

in addition to woods and fields. They climb up trees to find prey such as [cankerworms](#), eastern tent caterpillars, and gypsy moth caterpillars. You should start to see these large predators soon. Fiery searchers are active from about late April to November and are often found under rocks, logs, bark, leaf litter, and decomposing logs when they are not foraging in trees. Eggs are laid in the soil and both the larvae and adults climb trees in search of caterpillars. Adult beetles hunt during the day and larvae hunt at night. When larvae mature they move back to the soil to pupate from which adults emerge. Beetles can live up to 3 years. Several literature accounts associate the presence of *Calosoma wilcoxi* with the elimination of cankerworm outbreaks in natural forest environments.

Watch for these beautiful beetles, but if you have a need to handle them don't be surprised if they "stink on you". Fiery searchers give off quite a nasty smell when disturbed. It is not personal; it is just the beetle's defensive mechanism.



The larva of a fiery searcher feeding on a gypsy moth caterpillar.

Photo: Gyorgy Csoka, Hungary Forest Research Institute, Bugwood.org

The fiery searcher or caterpillar hunter, *Calosoma scrutator*, is one of the largest carabid or ground beetles growing to 1.5" long. It is one of the few ground beetle species that are arboreal, and it has a particular fondness for caterpillars.

Photo: M.J. Raupp, UMD

Weed of the Week

By:

This week's weed has begun showing off its pink flowers over the last couple of weeks. Henbit (*Lamium amplexicaule*) is a winter annual and a member of the mint family.

Henbit is a sparsely hairy winter annual with greenish to purplish, tender, square stems. (Those square stems are indicative of plants in the mint family.) The leaves are round to heart-shaped with a rounded toothed leaf margin. The leaves on the upper part of the plant are sessile (directly attached to the stem) and lower leaves have petioles (small stems that connect the leaf to the main stem). Leaves have hairs on the upper surface and along the veins on the underside and are also on opposite sides of the stem. Henbit can develop stems up to sixteen inches in length. Flowers occur in whorls on the upper leaves, will be without petioles, and typically point upwards. (Deadnettle, a similar looking weed also in the mint family, has purple flowers that point downwards.) Henbit has a fibrous root system and can develop roots at nodes on the square stems.

While those purple flowers may look pretty, they are an impending sign that the plant will soon set seeds. If seed production is not prevented, then you'll have more plants to deal with in the next few years. At this stage, preventing seed production can be as simple as mowing or using a string trimmer. Broadleaf herbicides such as 2,4-D or dicamba can be used. Based on trials, Virginia Tech rates dicamba alone as slightly better than 2,4-D alone. Contact herbicides such as iron (e.g. Fiesta) in turf, and ammonium nonanoate (e.g. Prizefighter) or caprylic + capric acid (e.g. Burnout) in landscape settings can be used. Contact herbicides may require more than one application.

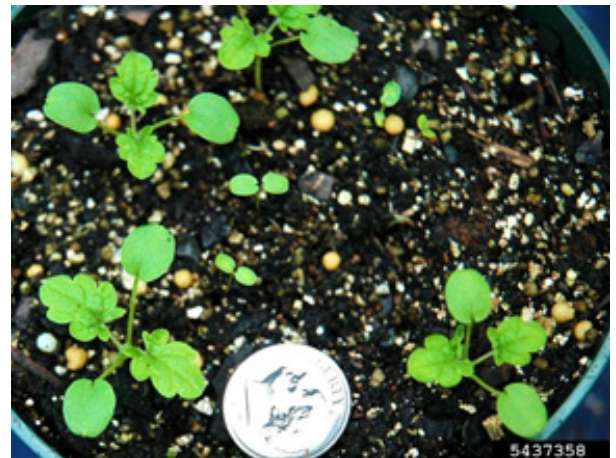
Since henbit seeds germinate in the fall, take note of the areas that have henbit this spring, then go back to those same areas this fall and do herbicide applications and/or mowing to control seedlings and younger plants as needed.



Henbit leaves and flowers.
Photo: Rebekah D. Wallace,
University of Georgia, Bugwood.org



A henbit population.
Photo: Robert Vidéki, *Doronicum Kft.*,
Bugwood.org.



Henbit seedlings.
Photo: Bruce Ackley, The Ohio State
University, Bugwood.org.

Plant of the Week

By: Ginny Rosenkranz

Prunus x yedoensis or the Yoshino cherry is small tree and graceful ornamental flowering cherry tree that is native to Japan but still has a place in our landscapes. Yoshino cherry trees grow 30-40 feet tall and wide with a broad spreading, rounded crown. In early spring, the light pink buds open to become fragrant white flowers tinged with pink, creating a lovely silhouette against a bright blue sky. The 5-petaled flowers are held in 3 to 6 clusters and open before the leaves emerge. The flowers mature into small black cherries about ½ inch in diameter and although the cherries are very bitter, the native birds thrive on them. The alternately placed dark green, 5-inch-long leaves have serrated margins and an oval shape. In the cool temperatures of autumn, the foliage turns yellow with bronze tints before falling to the ground. These beautiful trees are the same as the ones

that were presented as a gift of friendship in 1912 to the People of the United States from the People of Japan, and planted around the tidal basin in Washington, D.C.. Some of the original trees still bloom each spring. There are a number of cultivars including ‘Afterglow’ which holds their pink-tinged color without fading, ‘Akebono’, which fades to white over time, and ‘Fugenzo’, which has double flowers with about 20 petals. Diseases can include die back, leaf spot and leaf curl while insect pests include aphids, borers, caterpillars, Japanese beetles, scale, and spider mites.



The light pink Yoshino cherry buds open to fragrant white flowers tinged with pink.

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 **54 DD** (Martinsburg) to **184 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.

Euonymus leaf-notcher caterpillar – egg hatch (**37 DD**)

White pine weevil – adult first activity (**84 DD**)

Eastern tent caterpillar – egg hatch (**86 DD**)

Boxwood spider mite – egg hatch (**141 DD**)

European pine sawfly – larva, early instar (**154 DD**)

Woolly elm aphid – egg hatch (**163 DD**)

Inkberry holly leafminer – adult emergence (**165 DD**)

Spiny witchhazel gall aphid – adult/nymph (**171 DD**)

Boxwood psyllid – egg hatch (**184 DD**)

Tea Scale – egg hatch / crawler (1st gen) (**195 DD**)

Hemlock woolly adelgid – egg hatch (1st gen)

Viburnum leaf beetle – first egg hatch (**210 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 April 3)

Annapolis Naval Academy (KNAK)	100
Baltimore, MD (KBWI)	110
College Park (KCGS)	100
Dulles Airport (KIAD)	130
Ft. Belvoir, VA (KDA)	127
Frederick (KFDK)	99
Gaithersburg (KGAI)	86
Greater Cumberland Reg (KCBE)	81
Martinsburg, WV (KMRB)	54
Millersville (MD026)	104
Natl Arboretum/Reagan Natl (KDCA)	167
Perry Hall (C0608)	75
Salisbury/Ocean City (KSBY)	132
St. Mary's City (Patuxent NRB KNHK)	184
Susquehanna State Park (SSQM2)	84
Westminster (KDMW)	123

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

April 19-20, 2024

Youth Arboriculture Career Expo

Location: Gallaudet University

For more info: 202-826-6314

May 2, 2024

Pest Walk in Salisbury

Location: Salisbury University

May 22, 2024

MAA Pest Walk

Location: CMREC, Ellicott City, MD

June 4, 2024

MNLGA Program: Focus on Garden Centers

Location: Ladew Gardens, Monkton, MD

June 5 and 6, 2024

Biological Control Conference for Greenhouses, Nurseries, and Landscapes

Location: Central Maryland Research and Education Center, Ellicott City, MD

June 14, 2023

Eastern Shore Pesticide Recertification Conference

Location: via Zoom

June 20, 2024

UMD Extension and MNLGA Technology Field Day for Nurseries

Location: Ruppert Nurseries, Laytonsville, MD

June 28, 2024

Procrastinator's Pesticide Recertification Conference

Location: Montgomery County Extension Office, Derwood, MD

September 17 and 18, 2024 (rescheduled from March)

Cut Flower Program

Locations: Central Maryland Research and Education Center, Ellicott City, MD and locations in Howard Co.

October 9, 2024

MNLGA Retail Day

Location: Homestead Gardens, Davidsonville, MD

Go to the [IPMnet Conference Page](#) for links and details on these programs.

Homeowner Questions for the Home and Garden Information Center

With the new gardening season underway, we want to remind nursery/garden center and landscape professionals that you can refer customers with home gardening questions to Ask Extension. This is a free University of Maryland Extension service, available to all MD residents. In addition, our Home and Garden Information Center has recommended soil testing labs, a Maryland Vegetable Planting Calendar, Home Lawn Fertilizer Guidelines that comply with the MD Lawn Fertilizer Law, and many other resources to support home gardeners. If you would like to add a logo/link to Ask Extension on your company's website, please contact christa@umd.edu.

Questions about home gardening?

Send photos and questions to **Ask Extension.**

- Plant and insect ID
- Vegetable gardens
- Native plant gardening & more!

go.umd.edu/AskExtension

UNIVERSITY OF MARYLAND EXTENSION | HOME & GARDEN INFORMATION CENTER

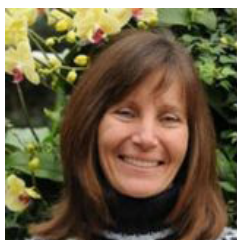
Commercial Ornamental IPM Information

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

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

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