UNIVERSITY OF MARYLAND EXTENSION

TPM/IPM Weekly Report

for Arborists, Landscape Managers & Nursery Managers

Commercial Horticulture **August 4, 2023**

In This Issue...

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

Coordinator Weekly IPM Report:
Stanton Gill, Extension Specialist, IPM and Entomology for Nursery, Greenhouse and Managed Landscapes, sgill@umd.edu. 410-868-9400 (cell)

Regular Contributors:
Pest and Beneficial Insect Information: Stanton Gill and Paula Shrewsbury (Extension Specialists) and Nancy Harding, Faculty Research Assistant
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)
Fertility Management: Andrew Ristvey (Extension Specialist, Wye Research & Education Center)
Design, Layout and Editing: Suzanne Klick (Technician, CMREC)

Mite Activity Up

By: Stanton Gill

Dry, sunny weather is perfect for spider mites and southern red mites to damage a range of plants in the landscape this week. Monitor susceptible plants and apply miticides. Be sure to hit the undersides of foliage.

If you see yellow stippling on the top of foliage, look underneath the leaves for twospotted spider mites.

Drone School for Commercial Horticulture

By: Stanton Gill

The drone school for the commercial horticulture industry was held this week and all of the participants learned a lot and had a lot of hands-on experience flying different types of drone. We will have additional classes this winter, so be sure to get up to date on this new technology and see how it fits in your horticulture operation.

2023 UME Drone Training Participants
Photo: Stanton Gill, UME

2023 Drone Training Participants - Photo shot from drone
Photo: Edwin Remsberg, Remsberg Photography

Tupelo Leaf Edge Galls

Marie Rojas, IPM Scout, found tupelo leaf edge galls on the leaf margins of *Nyssa* in Gaithersburg. These galls can be caused by the eryiophyid mite, *Aceria dina* or the phylloxerid, *Phylloxerina nyssae*. They do not impact the overall health of the tree. Control is not necessary.

Tupelo leaf edge galls.
Photo: Marie Rojas, IPM Scout

Horticulture Industry – Change Coming

By: Stanton Gill

Well, horticulture businesses will need to raise prices in 2024 to meet the new labor cost increase coming in 2024. To stay competitive, you will either have to cut cost or raise prices by 10-15% in 2024. With the passage of the Fair Wage Act of 2023, employers of all sizes must pay $15 an hour starting Jan. 1, 2024. Gov. Wes Moore signed the Maryland minimum wage update into law on April 11, 2023.

Invasive Bamboo Species

We had a question about the status of yellow bamboo as to whether or not it is banned in Maryland. On the Maryland Department of Agriculture invasive species list, there are two bamboo species on the Tier 2 list. They are *Phyllostachys aurea* (golden bamboo) and *Phyllostachys aureosulcata* (yellow groove bamboo).

On the MDA website, the restrictions for Tier 2 invasive species are as follows:

A person may not sell or offer for sale Tier 2 invasive plants at a retail outlet unless the retail outlet posts in a conspicuous manner in proximity to all Tier 2 plant displays, a sign identifying the plants as Tier 2 plants. Required insignia can be found under Information for Nursery & Landscape Professionals on the right-hand side of this page.

A person may not provide landscaping services to plant or supply for planting a Tier 2 invasive plant unless the person provides a list of Tier 2 invasive plants to its customer.

The list of Tier 1 and Tier 2 invasive species is avaible at https://mda.maryland.gov/plants-pests/Documents/Invasive-Plant-List-March-2020.pdf.

Oriental Fruit Moth Adults Activity This Week

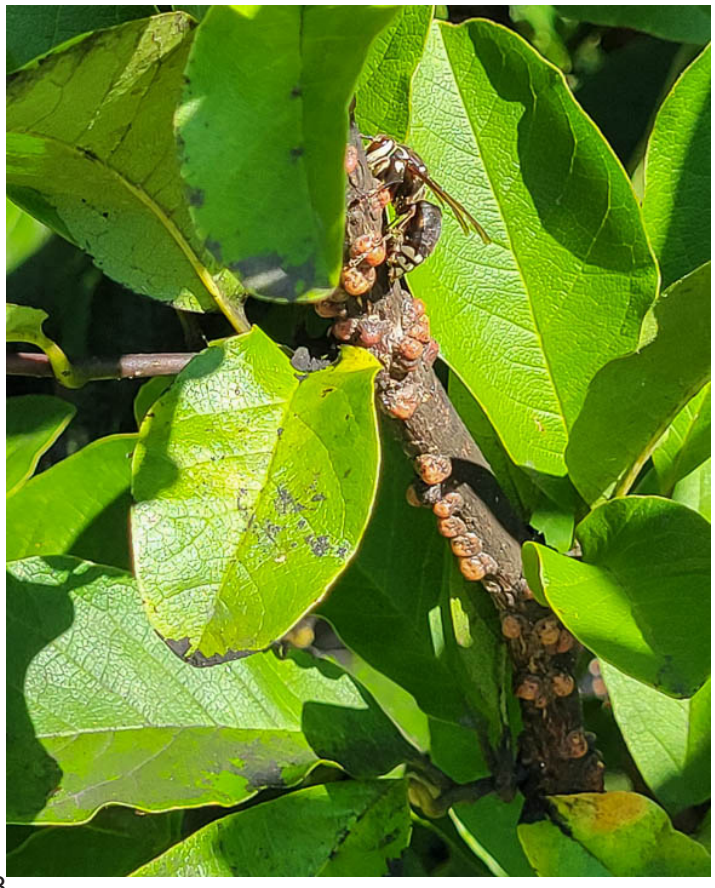
By: Stanton Gill

We are picking up 3rd generation or oriental fruit moths this ween the Westminster area. If your customers have late maturing peach cultivars, now is a good time to apply Altchor.

Scale Insect Update

By: Stanton Gill

Examine tulip trees and deciduous magnolias in August. The females of tuliptree scale and magnolia scale are starting to feed heavily and excrete a lot of honeydew. The female covers swell up at this time of year and look like small motorcycle helmets or army helmets. Hold off on the sprays until we see crawlers in September.



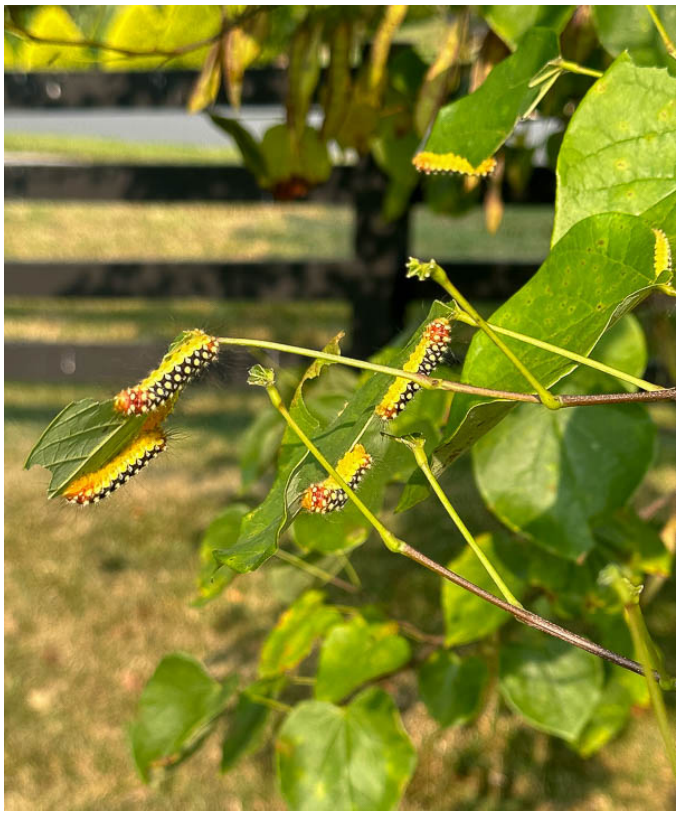
A bald-faced hornet is feeding on the honeydew produced by the tuliptree aphids on magnolia. Photo: Marie Rojas, IPM Scout

Extensión en Español

Check out Extensión en Español, a Spanish language blog by two UMD professors, Anahí Espíndola (Entomology) and Macarena Farcuh (Plant Sciences & Landscape Architecture). They cover a range of topics, including fruit, pollinators, pests, soils, and pesticides.

Beware of Stinging Caterpillars

John Ford, True Flourishing Landscapes, found white flannel moth caterpillars on a redbud tree in Aldie, VA. This caterpillar species has urticating hairs that release a toxin that causes a painful sting when you come into contact with them.



These brightly colored white flannel moth caterpillars can cause a painfull sting. Photo: John Ford, True Flourishing Landscapes

Fall Webworms

Activity of second generation fall webworms is increasing. Marie Rojas, IPM Scout, found second-generation fall webworms on *Malus* 'Liberty' in Montgomery County this week. Elaine Menegon, Good's Tree and Lawn Care, found fall webworms in a crabapple this week in Hummelstown, PA. Fall webworms feed on a wide range of woody plants within webbing they produce on tips of branches. If possible, prune out webbed terminals. Predators and parasitoids help attack fall webworm populations. If control is necessary, options include Bt for early instars or Spinosad.

The webbing on this crabapple branch is produced by second generation fall webworms. Photo: Elaine Menegon, Good's Tree and Lawn Care

Herbicide Drift in Garden Vegetables

Jerry Brust, UME

I had some plant samples and saw some gardens in the last couple of weeks with herbicide drift that moved from the lawn into the vegetable garden. Although tomatoes are one of the more sensitive plants to 2,4-D or dicamba or any of the growth regulating herbicides (killing weeds by stimulating excessive growth and exhausting the plant's carbohydrate reserves) other vegetables such as pepper, beans, cucurbits and flowers also can be susceptible to drifting problems.

Herbicide drift on vegetables usually appears as cupped, twisted, thickened or distorted leaves (fig. 1). The youngest foliage is often the most sensitive to the drift and will show the symptoms first. In addition to new growth distortions the growth regulating herbicides can also cause extensive adventitious root growth along the main stem and branches of the vegetable plant (fig. 2). The same herbicide also can cause different symptoms on different plant species. Some of these distortions can be caused by other factors such as eriophyid mites, virus diseases, salt damage, misapplied fertilizers and nutrient deficiencies and would need to be ruled out first. If herbicide is suspected, inspect other plants in the area. Herbicide injury will typically be found on more than one type of plant (including weeds) and will show twisting or distortion at the same time as the vegetables.

Fig. 1 Damage to tomato (A) and pepper (B) leaves by 2,4-D drift
Photo A: Karen Rane
Photo B: G. Brust

Fig. 2 Extensive adventitious root growth caused by 2,4-D drift on tomato.
Photo: R. Fowler

Spotted Lanternfly Reports

Mark Schlossberg, ProLawn Plus, Inc., is reporting that neighbors in Owings Mills are seeing adult spotted lanternflies in the area. Jan Angel, UME, sent in photos of a cherry tree in Mt. Airy that was knocked over in a recent storm. Jan noted that the yard was littered with smashed adults and the downed branches had both 4th instars and adults.

A nymph on a cherry tree that came down in a storm and an adult found nearby on the ground.
Photos: Jan Angel, UME Master Gardener

Predator of Crapemyrtle Bark Scale

Bob Mead, Mead Tree and Turf, found a *Hyperaspsis* sp. of lady beetle larva feeding on crapemyrtle bark scale. They move quickly. They do not have a stylet mouthpart, but mandibles. You can flip them over to look at their mouthparts. We are getting more and more reports from landscapers and arborists of these lady beetles associated with this scale. They are benefical insects. Avoid using broad spectrum pesticides, like pyrethroids, for control of crapemyrtle bark scale because it will negatively impact these beneficals.

This mealybug look-a-like is a larva of a lady beetle (*Hyperaspis* sp.).
Photo: Bob Mead, Mead Tree and Turf

Caterpillar Activity

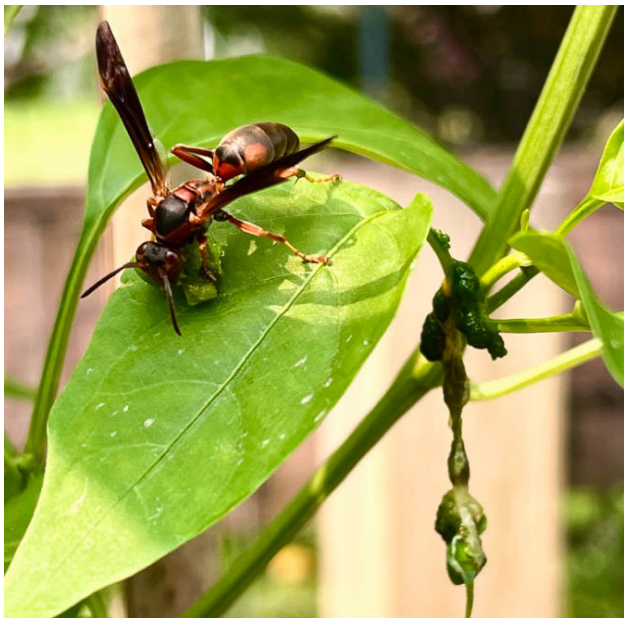
Marie Rojas, IPM Scout, found orange-striped oakworm caterpillars and yellownecked caterpillars on oaks this week. Control of these caterpillars is not always necessary. Look for beneficial insect activity to help determine if you need to make any control treatments. Control is best when caterpillars are in the early instar stages. Bt and Spinosad work very well. Acelepryn or Mainspring will also work well.

Look for yellownecked caterpillars to be active into the fall.
Photo: Marie Rojas, IPM Scout

Orange-striped caterpillars also feed in groups.
Photo: Marie Rojas, IPM Scout

Polistes (Paper) Wasps

Nancy Woods found a *Polistes fuscatus* (northern paper wasp) female, devouring a hornworm. Paper wasps overwinter as adults, sometimes in homes, but also in places like hollow trees and wood piles. They often become active on warm winter and early spring days. Paper wasps are good predators of caterpillars and also prey on other insects.



A paper wasp is finishing feeding on a hornworm.
Photo: Nancy Woods

Beneficial of the Week

By: Paula Shrewsbury

What big eyes you have!

Big-eyed bugs, *Geocoris* spp., are true bugs in the sub-order Heteroptera and belong to the family Geocoridae. Species of big-eyed bugs are found throughout most of the world, including North America. Big-eyed bugs get their name because they have a pair of large bulging eyes (see images) which is a diagnostic characteristic for this species. They are only about 1/6" in size and usually are tan with brown coloration. Big-eyed bugs are known to be predators of caterpillars, spider mites, aphids, plant bugs, and many other small insects, in addition to eggs of insects. Both nymphs and adults are predacious. Females lay oblong, pale colored eggs singly on leaf surfaces. Big-eyed bugs are found in many types of plant systems such as ornamentals, turf, and agricultural crops. Most commonly I see big-eyed bug in turfgrass where they are important predators of chinch bugs. Interestingly, chinch bugs and big-eyed bugs are often mistaken for each other. In addition, to feeding on insects, big-eyed bugs are omnivores and also feed on seeds and sometimes foliage of various plants. Omnivores are often good predators because when prey items become scarce, they can find other sources of food such as plants, seeds, nectar or pollen. Therefore, they are likely to stay in their habitat where they are ready to pounce on incoming prey items. Studies have shown that planting sunflowers can increase big-eyed bug activity. Other plants that produce seed may have a similar effect. Consider enhancing populations of big-eyed bugs, and other omnivorous biological control agents, by planting seed producing flowering plants.

Note the characteristic bulging eyes of the big-eyed bug, *Geocoris* spp., adult and nymph.
Photos: B. Higbee, forestryimages.org

Big-eyed bug adult has its piercing-sucking mouthpart inserted into this hopper insect resulting in death of the plant feeding insect. Note the two prominent eyes that are characteristic of this predator.
Photo by: Russ Ottens, University of Georgia, Bugwood.org

Weed of the Week

By: Mark Townsend, Agriculture Agent Associate, Frederick County.

This installment of Weed of the Week features one of my favorite weeds, velvetleaf (*Abutilon theophrasti* Medicus). Though most commonly referred to as velvetleaf, others may know it as: pie marker, butter weed, cotton weed or Indian hemp.

Velvetleaf foliage.
Photo: Phil Westra, Colorado State University, Bugwood.org

As a summer annual, velvetleaf is common this time of year. True to its name, the foliage of velvetleaf is undeniably soft and pleasant to the touch from the myriad of soft hairs on its leaves. Speaking of, the heart-shaped leaves are notably large, ranging from 4-12" in width, though when crushed the leaves emit a rather unpleasant aroma.

A fully-developed plant stands erect about 3 feet tall with a simple alternating leaf pattern emerging from long petioles. Its fibrous root-system and shallow tap-root provide good support for its vertically growing tendencies. Seedlings begin to emerge in late-May, though now is the time that the plant becomes especially noticeable standing taller than some cultivated crops and ornamentals.

Velvetleaf seeds.
Photo: Bruce Ackley, The Ohio State University, Bugwood.org

No less noticeable, velvetleaf shoots a vibrant yellow-orange flower from short stalks at the top of the plant in late-July to early August. When mature, its fruit is a cup-shaped disk that contains 3-9 seeds in each pocket that closely resemble the characteristic leaves– large (3mm) hairy, heart-shaped hard seeds.

Aside from the tactile sensations of the leaves, velvetleaf's notable qualities include the persistence of its seeds and hearty germination. Studies have found 50-year old velvetleaf seeds still viable in cultivated fields while others have found that velvetleaf can germinate at relatively deep depths (5+ cm below the soil surface).

Velvetleaf seed head.
Photo: Rehbeka D. Wallace, University of Georgia, Bugwood.com

Velvetleaf remains a more important weed for agronomic crops, though its proliferation can be found across a multitude of cropping/ornamental systems. Of note, velvetleaf is a host of cucumber mosaic virus, whereby aphids may vector the virus from an infected velvetleaf plant to a susceptible crop like tomatoes, lettuce, or cucurbits. Like many others in this class, velvetleaf appears to do best in highly fertile soils, though some note that velvetleaf retains

a competitive advantage to others in soils with an imbalance of cations, specifically high concentrations of potassium and magnesium.

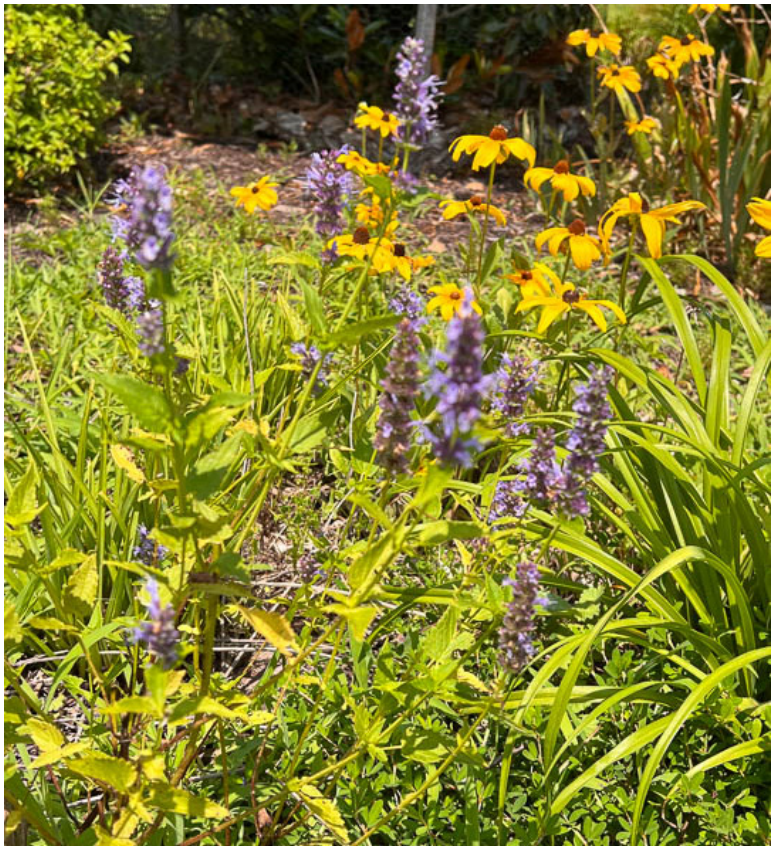
Hand weeding is most frequently an effective method of controlling weeds like velvetleaf that reproduce through seeds. In this, timing is important to ensure that the seeds are not viable if any do drop to the soil surface. Mechanical termination is possible with early emerged velvetleaf though is not recommended for later germinated weeds given the stage of the crop later in the growing season.

Chemically, there are many products with significant efficacy on velvetleaf. Products containing: dicamba, atrazine, isoxaflutole, acetochlor, mesotrione, clopyralid, metribuzin, chlorimuron-ethyl, and saflufenacil have been shown to control velvetleaf in agronomic crops. Please consult product labels for control efficacy and always follow label instructions.

Plant of the Week

By: Ginny Rosenkranz

Agastache 'Black Adder' or giant hyssop thrives in full sun and well drained soils. Excellent drainage is especially needed in the winter months. 'Black Adder' is a clump forming, upright plant that can grow on square stems 2-3 feet tall and 1 ½ to 2 feet wide and is cold tolerant in USDA zones 6-9. Once established the plants are tolerant of both drought and high heat. The dark purple buds bloom into fragrant, deep purple tube-like flowers that are attached in a whorled fashion on dense dark terminal spikes, like slender bottlebrushes rising 6-8 inches tall. The flowers bloom from the bottom upwards from June to frost, and host hummingbirds, butterflies and other beneficial pollinators. Deadheading will encourage more flowers to bloom. The green to blue-green fragrant lance shaped leaves have serrated margins and smell like licorice or anise. *Agastache* 'Black Adder' fits into sunny borders, butterfly and cottage gardens and along walks. There are no major insect or disease pests, and even the deer and rabbits leave *Agastache* 'Black Adder' alone.



Agastache 'Black Adder' tolerates drought and high temperatures after it is established.
Photos: Ginny Rosenkranz, UME

Degree Days (as of August 2)

Abingdon (C1620)	2230	Annapolis Naval Academy (KNAK)	2405
Baltimore, MD (KBWI)	2465	College Park (KCGS)	2342
Dulles Airport (KIAD)	2371	Ft. Belvoir, VA (KDA)	2271
Frederick (KFDK)	2248	Gaithersburg (KGAI)	2153
Gambrils (F2488, near Bowie)	2302	Greater Cumberland Reg (KCBE)	1985
Perry Hall (C0608)	2133	Martinsburg, WV (KMRB)	1776
Natl Arboretum/Reagan Natl (KDCA)	2722	Salisbury/Ocean City (KSBY)	2400
St. Mary's City (Patuxent NRB KNHK)	2749	Westminster (KDMW)	2476

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

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 **1776 DD** (Martinsburg, WV) to **2749 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.

White prunicola scale – egg hatch / crawler (2nd gen) **(1637 DD)**
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.

Conferences: Go to the IPMnet Conference Page for links and details on these programs.

September 13, 2023
MAA's Day of Safety and Health
Locatiaon: Howard County Fairgrounds, West Friendship, MD

September 13, 2023
MNLGA Nursery Field Day
Location: Abby Farms, Waldorf, MD
Registration is now open

October 11, 2023
FALCAN Truck and Trailer Seminar
Location: Urbana Fire Hall, Urbana, MD

2024 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 8 - Thursday, January 11, 2024 from 8:00 am – 3:00 pm
Lab dates: Monday, January 8 - Thursday, January 11, 2024 (space limited) from 3:30 pm – 5:30 pm
Course and registration information: https://landscapeipmphc.weebly.com/
Questions contact: Amy Yaich, 301-405-3911, umdentomology@umd.edu

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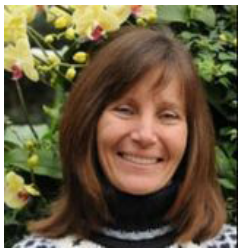
CONTRIBUTORS:

Stanton Gill
Extension Specialist
sgill@umd.edu
410-868-9400 (cell)



Paula Shrewsbury
Extension Specialist
pshrewsb@umd.edu

Karen Rane
Plant Pathologist
rane@umd.edu

Chuck Schuster
Retired, Extension Educator
cfs@umd.edu

David Clement
Plant Pathologist
clement@umd.edu

Andrew Ristvey
Extension Specialist
aristvey@umd.edu

Ginny Rosenkranz
Extension Educator
rosnkrnz@umd.edu

Nancy Harding
Faculty Research Assistant

Fereshteh Shahoveisi
Assistant Professor
fsh@umd.edu

Kelly Nichols
Extension Educator
kellyn@umd.edu

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