UNIVERSITY OF MARYLAND EXTENSION

TPM/IPM Weekly Report

for Arborists, Landscape Managers & Nursery Managers

Commercial Horticulture **June 30, 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) and Kelly Nichols (Extension Educator, Montgomery County)
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)

Drone School and Drone Research

By: Stanton Gill

David Clement, Andrew Ristvey, Kirk Floyd, and I have been busy conducting field trials for scale insects, foliar diseases, and detecting water stress using drones this summer. We will present some of the early results at Cultivate 2023 in Columbus, Ohio on Sunday, July 16th.

On July 28 we will start the four-day drone school for the commercial horticulture industry. You can obtain the schedule on our IPM Conference web page. We are limiting the registration to 15 people for this hands-on class.

The next IPM Scouts' Diagnostic Session is July 26.

Go to our Conference Page for more information and to register.

Due to the Fourth of July Holiday next week, we will not be sending out a report on Friday, July 7.

Japanese Beetle Adults

Japanese beetle adult activity continues to increase as we move into July. Luke Gustafson, The Davey Tree Expert Company, reports seeing moderate Japanese beetle activity on plants such as lindens and roses in Baltimore County and Baltimore City. Todd Armstrong, The Davey Tree Expert Company, is finding adults feeding on basil and rainier cherry (heavy feeding noted) in Jarretsville. Marie Rojas, IPM Scout, is finding them starting to feed on nursery stock in Montgomery County this week. Control options include Mainspring and Acelepyrn.

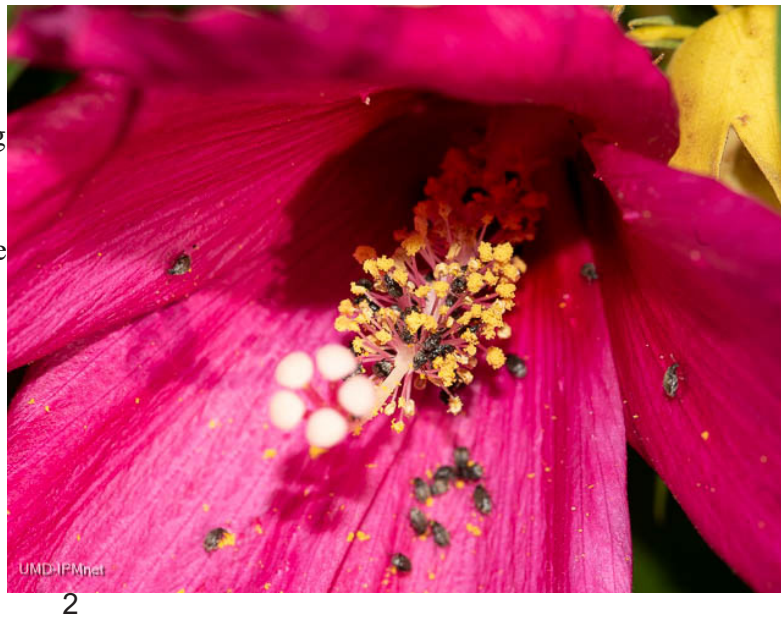
Japanese beetles are feeding heavily on the foliage of this rainier cherry tree.
Photo: Todd Armstrong, The Davey Tree Expert Company

A wheel bug nymph is hanging out on a rose infested with Japanese beetles. As a generalist predator, the wheel bug has a good food source on this plant.
Photo: Marie Rojas, IPM Scout

Weevils

By: Stanton Gill

We are getting in sample of various weevils feeding on a range of plant material including magnolia, rose, azalea, and hibiscus flowers, and various perennials. The dry weather of June appears to have been conducive to weevils flourishing.



A high population of weevils are feeding on the pollen of this hibiscus flower.
Photo: Suzanne Klick, UME

Azalea Lace Bugs

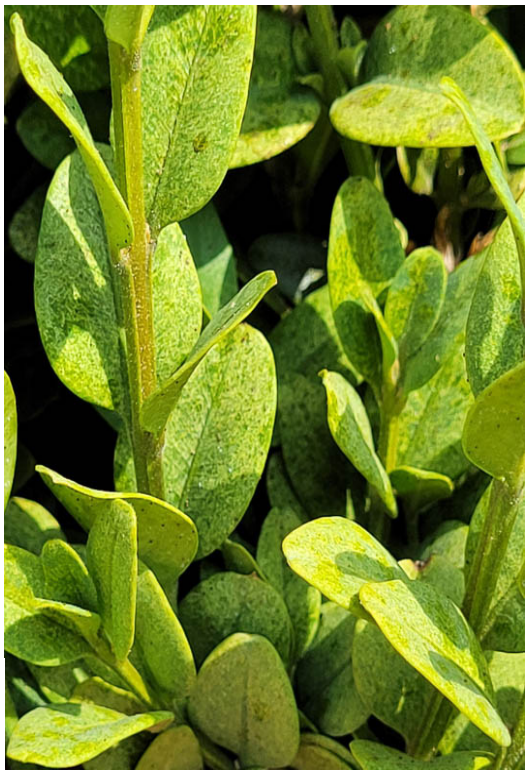
By: Stanton Gill

Samples are being submitted to CMREC labs of azaleas. We are finding lots of the eggs embedded in the undersides of the foliage, usually along the midrib veins. So far, all of the samples have been eggs, with no hatch yet. Watch for the second generation as we move into July. Systemics such as Altus and Mainspring work well on these sucking pests. We have tried Endeavour insecticides, which is translaminar, and it gives good control levels.

If you see stippling on the leaves of azaleas, look on the undersides for fecal spots and various stages of azalea lace bugs.
Photos: David Clement, UME

Boxwood Spider Mites

Marie Rojas, IPM Scout, reported that boxwood spider mites have exploded on boxwood in the past couple of weeks. Marie noted that she is finding high populations on just about every cultivar. Look for the typical yellow stippling damage caused by mites. Boxwood spider mites prefer European, common, and English boxwoods. Control options include insecticidal soap or horticultural oil, Floramite, Kontos, Sanmite, Hexygon, and Forbid.



Heavy infestations can cause foliage to turn yellowish-white and leaves to drop prematurely.
Photos: Marie Rojas, IPM Scout

Bagworms

Marie Rojas IPM Scout, reported, "I was going down a row of recently planted *Carpinus betulus* 'Fastigiata' when I noticed that there were tiny bagworms on multiple trees. I kept walking around, looking at nearby arborvitae and spruce, but no bagworms there. Finally, I found the first tree in the row had ONE large, old bagworm bag. That was the one that hatched out! They congregated on the next tree, ate that to nothing, then kept blowing down the row!" David Lantz if finding early instar larvae along Route 40 in Hagerstown. Bt (Dipel, Caterpillar Attack), Spinosad (Conserve) or Acelepyrn will all give good control of young larvae.

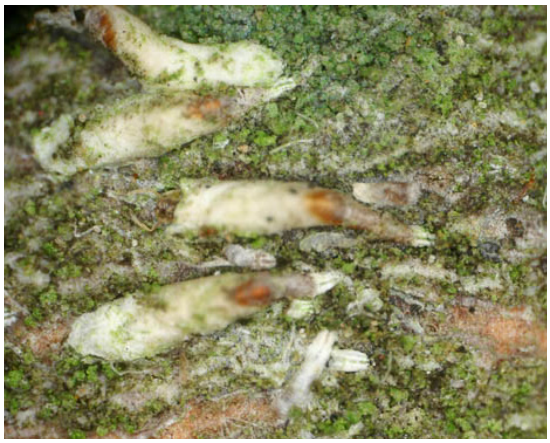
Better control is obtained when treating early instars of bagworms.
Photo: David Lantz

Bagworms are spreading along this row of trees, causing significant damage.
Photo: Marie Rojas, IPM Scout

Japanese Maple Scale

By: Stanton Gill

On Monday, we (Brian Kunkel, Kirk Floyd, Sheena O'Donnell, Suzanne Klick, and I) made applications of low-risk pesticides for Japanese maple scale in a working nursery. The applications were made using a spray drone. This is good time of year to apply materials for the 1st generation of crawlers of Japanese maple scale. So, get your airblast sprayer and pick your day for an application when it is not too hot or rainy.



Female Japanese maple scale photographed under a microscope.
Photo: Suzanne Klick, UME

Galls on Witchhazel

Kevin Wengernuk, KW Landscaping Inc., found the galls caused by witchhazel leaf gall aphids on the foliage of witchhazel this week. Control is not necessary. The alternate host of this aphid is birch. We have had many reports of this aphid on birch this spring as well. Beneficial insects help keep this aphid under control.

These spindle galls are caused by the witchhazel leaf gall aphid.
Photo: Kevin Wengernuk, KW Landscaping, Inc.

Summer Has Begun

By: Stanton Gill

Most people love this time of year when we have nice long days and warm weather. Well, the warm part, with high humidity, does get a bit trying. Anyhow, the rain last week was very welcomed, even if it increased the humidity levels. We can still use a lot more rain, so keep your customers' plants well irrigated as we move into hot, dry July.

If your customers are growing paw paw and peaches, this is a great fruit set and bearing year. Be sure to have thinned the peaches to one fist distance between each peach. Paw paw set 3 – 4 fruit clusters. I would suggest removing 2 of the 4 clusters of fruit to size up the remaining fruit. Peaches and paw paws need huge amounts of water at this time of year if you want to size up the fruit. A slow soaking water application is best, at least once a week until the fruit ripens.

The clearwing moth, day flying, main peach tree borer adults are in full flight this week with a peak number showing up in our baited pheromone traps. The females will lay eggs on stressed peach fruit and ornamental cherry, and fruit and ornamental plums on the main trunk. Keeping these species out of stress at this time of year is key to prevent loss to the larval borer stage of main peachtree borer.

Metarhizium Entomopathogen for Spotted Lanternfly

By: Stanton Gill

Brian Kunkel (Univ of Delaware Extension) and I captured several spotted lanternflies last week thanks to several of you who steered us to booming populations of SLF. We each made applications with *Metarhizium* in a preliminary test. We both got the same result, death of the 2nd and 3rd instar nymphs and we have fuzzy epizootic grow of mycelium coming out the bodies this week. We will plate these on agar petri dishes, so our two University pathologists can determine if it is the fungi that is killing them. We are working with two Maryland nurseries in field evaluations of *Metarhizium* and others with a relatively new systemic insecticide from Bayer Company (EnVu). We will use a standard sprayer at one site and a drone sprayer at the second site.

Exobasidium on Blueberry

By: Karen Rane, UMD Plant Diagnostic Lab

You may be familiar with galls on azalea or camellia caused by the fungus *Exobasidium* (see https://extension.umd.edu/sites/extension.umd.edu/files/2022-05/22May20L.pdf) , but did you know that a different species of this fungus causes spots on leaves and fruits of blueberry as well? We received photos and berry samples from a home gardener with several established blueberry plants. The fungal pathogen (*Exobasidium maculatum*) forms light green leaf spots in the spring (Figure 1)that are slightly thicker than the surrounding leaf tissue. The undersides of the leaf spots develop a layer of fungal tissue that contains spores of the pathogen(Figure 2). Fruit are infected when immature, but the symptoms can easily go unnoticed until the infected berries ripen and develop round, yellow- green or whitish spots (Figure 3). Little is known about the life cycle of this fungus on blueberry; the disease does not occur consistently every year. Infection occurs in the spring but foliage that develops later in the season is not affected. The disease is more common in the southeast US, and is found primarily in lower areas of older plantings where air circulation is limited. Cultivars appear to differ in their susceptibility to Exobasdium leaf and fruit spot. More information on this disease can be found at this link from North Carolina State University: https://content.ces.ncsu.edu/exobasidium-leaf-and-fruit-spot-of-blueberry

We are interested in learning more about the distribution of this disease in our region – if you have seen this disease on blueberries, please send photos of symptomatic plants or fruit along with location information to me at rane@umd.edu.

Figure 1. Exobasidium leaf spot on blueberry. Photo: S. Ballas.

Figure 2. Underside of blueberry leaf with Exobasidium leaf spot. Photo: S. Ballas.

Figure 3. Blueberries with green spots due to Exobasidium. Photo: K. Rane, UMD.

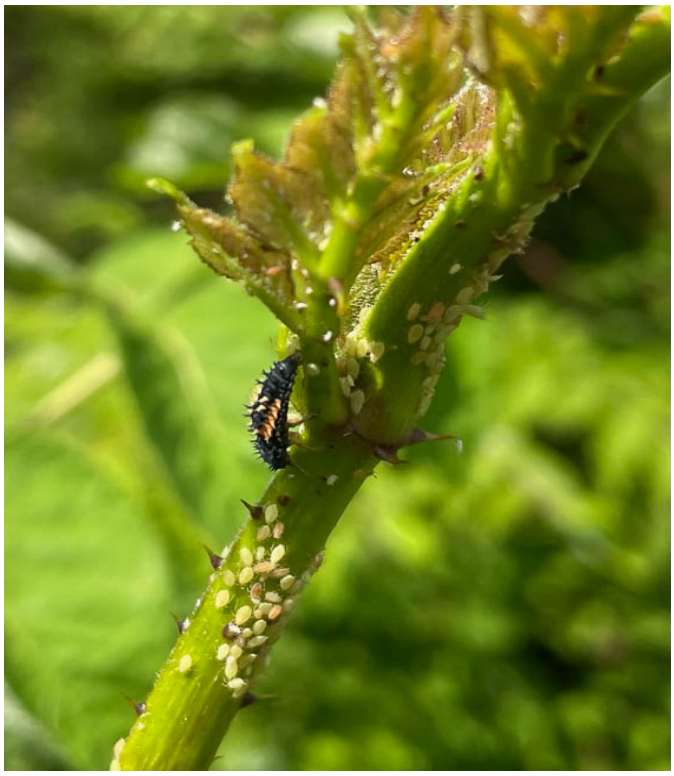
Purplespotted Lily Aphids

Daria Andrejak found purplespotted lily aphids (*Macrosiphum lilii*) on a lily plant this week in Roland Park in Baltimore. Typical in this season of many aphids, there was also a lady beetle larva present. This aphid is one of the more colorful aphids and it is specific to *Lilium*. There have been an increased number of plantings of *Lilium*, so we are seeing this aphid show up more and more.

Purplespotted lily aphids and a lady beetle larva predator on a lily leaf.
Photo: Daria Andrejak

Predators on Aphids

It's helpful to know the different stages of lady beetles. There are eggs, a pupa, and larva on this crapemyrtle leaf (that also has aphids).
Photo: Liam O'Neill



A lady beetle nymph is feeding on aphids that are on a devil's walkingstick tree in Towson.
Photo: Todd Armstrong, The Davey Tree Expert Company

Magnolia Scale

Heather Zindash, The Soulful Gardener, found early instars of magnolia scale today on Magnolia x soulangiana this week. The crawlers of this scale will be active later in the summer. Control measures should be applied when the crawlers are active.

Black early instars of magnolia scale are covering the trunk of this tree.
Photo: Heather Zindash, The Soulful Gardener

Slime Mold on Turf

Todd Armstrong, The Davey Tree Expert Company, found slime mold on turf. Slime mold does not infect the turf, but does look unsightly. Slime molds can appear quickly after periods of rain. Generally, no control is needed. NC State Extension and Ohio State University have more information on slime mold.

Slime mold in a turf area.
Photo: Todd Armstrong, The Davey Tree Expert Company

Thank Goodness We Are Not in Texas

By: Stanton Gill

The rains on Tuesday were very spotty with areas reporting downpours that lasted 15 - 30 minutes. I was driving back from nursery site visits and the rain was so heavy cars were pulling over until visibility got better. It is good to see the rain but certainly not enough water to make a real impact for plant material drought stress.

If you thought it was hot on Monday and Tuesday - the south is really suffering through a major heat spell. A brutal heat wave is expanding across Texas and the South this week, with triple-digit temperatures and extreme humidity that is cranking up the suffering.

Powdery Mildew

As we continue to have a lot of sunny days and cool nights, powdery mildew will be showing up on plants in the area. R. Scott Rupert, UMD, found powdery mildew on crape myrtles in Frederick, MD. He noted that 15 of 16 crapes in a shopping center showed signs of infection and the most affected areas on the trees were at the tips of the branches. Todd Armstrong, The Davey Tree Expert Company, also found a heavy infection of powdery mildew on a crape myrtle in Towson MD this week.

Powdery mildew infections are showing up on crape myrtles a lot this season.
Photo: R. Scott Rupert, UMD

Rosy Maple Moth

Terry West, UME Master Gardener, found this beautiful moth this week on the Eastern Shore. The caterpillar is called the green-striped mapleworm which feeds on maples and oaks. Caterpillars feeds in large groups through the third instar.

Rosy maple moth is a colorful moth that is found in Maryland.
Photo: Terry West, UME Master Gardener

Spotted Lanterfly

From Kenton Sumpter, MDA: In response to a landscaper finding a population of spotted lanternflies, Kenton Sumpter, MDA, said the following: "We are still tracking SLF in Baltimore County and City. You can report them here. Any regulated articles that have potentially been exposed to lanternfly still need to be inspected before they are transported from or within the quarantine. A record of those inspections needs to be maintained."

This week while cleaning up storm damaged ailanthus, a team with The Davey Tree Expert Company found a heavy population of spotted lanternflies in Towson.
Photo: Todd Armstrong, The Davey Tree Expert Company

A wheel bug nymph feeding on a spotted lanternfly in Manchester.
Photo: Matt Wentworth, The Davey Tree Expert Company

A spider feeding on spotted lanternfly in Joppatown.Photo: Ryan Espinoza, The Davey Tree Expert Company

Bald-faced Hornets

Bald-faced hornets are active this week. Pam O'Conner found a nest 'under construction' hanging from the soffet of the house. Bald-faced hornets are not true hornets, but are actually a species of aerial nesting yellowjacket. They are generalist insect feeders that consume many pest insects. They occasionally feed on nectar and have the potential of being minor pollinators. Human contact is often limited to areas around the nest. At the end of the season, the nest will slowly disintegrate.

If control is necessary, use an approved chemical for colony elimination or contact a pest control company.

A bald-faced hornet's nest that is under construction on a home.
Photo: Pam O'Conner

Beneficial of the Week

By: Paula Shrewsbury

Oh my… What big jaws you have – Elephant stag beetle, *Lucanus elaphus*

This week we discuss the giant elephant stag beetle, *Lucanus elaphus* (Lucanidae), discovered by an avid insect and nature lover, Jackie Weaver, in coastal Virginia. The “horns” (mandibles) on the male elephant stag beetle, simply dwarfs mandibular ornamentation of other stag beetles here in the DMV and throughout the United States. The male’s prodigious horns are used for combat with other male stag beetles to secure access to females and their breeding sites in decaying stumps and rotting wood. Stag beetles are relatives of rhinoceros beetles, such as our indigenous Hercules beetle, that also use extraordinary horns on their head to battle competitors for access to females. Amazingly large horns on rhinoceros beetles and impressively giant jaws of stag beetles may confer a selective advantage in winning the favors of female beetles, hence the continued selective pressure for large weaponry. Stag beetles’ dwell in damp forest woodlands where females seek moist decaying stumps or decomposing logs, often in low-lying undisturbed forests. Wet decaying wood serves as the favored habitat for female beetles to deposit eggs. Larvae, known as

With jaws almost as long as its body, the elephant stag beetle (*Lucanus elephus*) is the largest of its kind in the United States.
Photo: M.J. Raupp, UMD

grubs, hatch from these eggs and develop over a period of one to two years as they consume lignified tissues of their woody hosts. Stag beetle larvae house a rich microbial community in their gut. These symbionts release nutrients locked in tough woody tissues, making these nutrients available to support the growth and development of stag beetle grubs. Along with several other species of wood digesting insects, lucanid larvae play a critical role in recycling organic matter in forests around the world. Adult lucanid beetles are reported to feed on fermenting exudates of plants and their fruits, and sweet honeydew excreted by sap-sucking insects. They are also very fond of fruit. In keeping the elephant stag beetle in captivity for a few days, it demonstrated a particular preference for cherries over grapes and bananas. Lucky for us and him that cherries are in season. The important role of these forest recyclers is imperiled as natural forested lands disappear and become housing developments, business parks, or heavily managed landscapes. A close relative of our elephant stag beetle, the charismatic *Lucanus cervus*, has declined dramatically in some parts of Europe.

Armament such as gnarly teeth and forking mandibles help male stag beetles grapple with other males.
Photo: M.J. Raupp, UMD

Other stag beetles with somewhat less impressive mandibles like this reddish-brown stag beetle also help recycle wood here in the DMV and around the nation.
Photo: M.J. Raupp, UMD

Stag beetles are noisy, somewhat clumsy fliers and they create quite a buzz as they zoom though the forest or hone in on your porch light at nighttime. With the amazing beauty and uniqueness of this beetle, you might just want to hold one of these large stag beetles. Worried about those very large jaws? Well, when holding the Elephant stag beetle, it did test his jaws on Mike's index finger and although this resulted in a brief adrenaline rush, his jaws failed to break his skin or inflict any pain. When I held the beetle, it was not the large mandibles that were of concern, it was the hook-like tarsi (claws) at the tips of their legs. Stag beetles have very prickly tarsi at the tips of their feet which enable them to climb trees and grip tightly to human clothes and skin. This was not painful but it was challenging to "unhook" 6 legs when it was time to put the beetle down. According to the Maryland Biodiversity Project, July is an excellent month to spot these fascinating creatures here in the DMV. Head for the forest to catch a glimpse of these giants of the beetle world, and major players as decomposers of wood.

Watch this amazing National Geographic video to see how stag beetles use their supersized jaws to defeat competitors and gain access to mates: https://www.youtube.com/watch?v=-VWFreC4onI

Weed of the Week

By: Cole Chapman, WFD Extension Intern

Yellow foxtail, *Setaria pumila*, is one of the three major foxtail species. It is a summer annual grass that invades low-maintenance lawns, parks, roadsides, and turf operations and pasture operations. Yellow foxtail can persist in many different types of soils and weather conditions. It is best adapted to sunny areas, but it can still survive in partially shaded areas.

Yellow foxtail

Photo Credit: Dwyane Joseph, UME - Kent County.

The name “Yellow Foxtail" comes from the seed head’s color and resemblance to a fox's tail. The seed heads are typically produced from July to September and can generate thousands of seeds. The other two major foxtail species, green foxtail and giant foxtail, have similar seed head structures. It is often difficult to discern if a weed is green or yellow foxtail based solely on color. A key distinguishing feature is long silky hairs at the base of the leaf, while green foxtail has no hairs on the leaf blades or base. Additionally, yellow foxtail has a flattened stem and often exhibits a purplish hue at the base of the plant. Yellow foxtail can also be confused with Timothy (*Phleum pratense*) when seed heads are emerging as well as large crabgrass (*Digitaria sanguinalis*) as both yellow foxtail and large crabgrass have hairy ligules and emerge from the soil at a similar time in the year.

The bristles on the seed head (awns) can cause mechanical injury to grazing animals. The awns can penetrate and stick to animal tissue, causing ulcers in the mouth and digestive tract which persist until the awns are removed.

The seeds released by yellow foxtail are easily dispersed by lawn mowers, shoes, and animal fur, making it difficult to consistently prevent exposure. Cultural control is possible by using soil from sites with no previous history of foxtail infestation. If very few foxtail plants are present, they can be removed by hand pulling. Fertilizing for improved turf density, irrigation, and using well-adapted turfgrasses all help decrease the chance of a foxtail infestation.

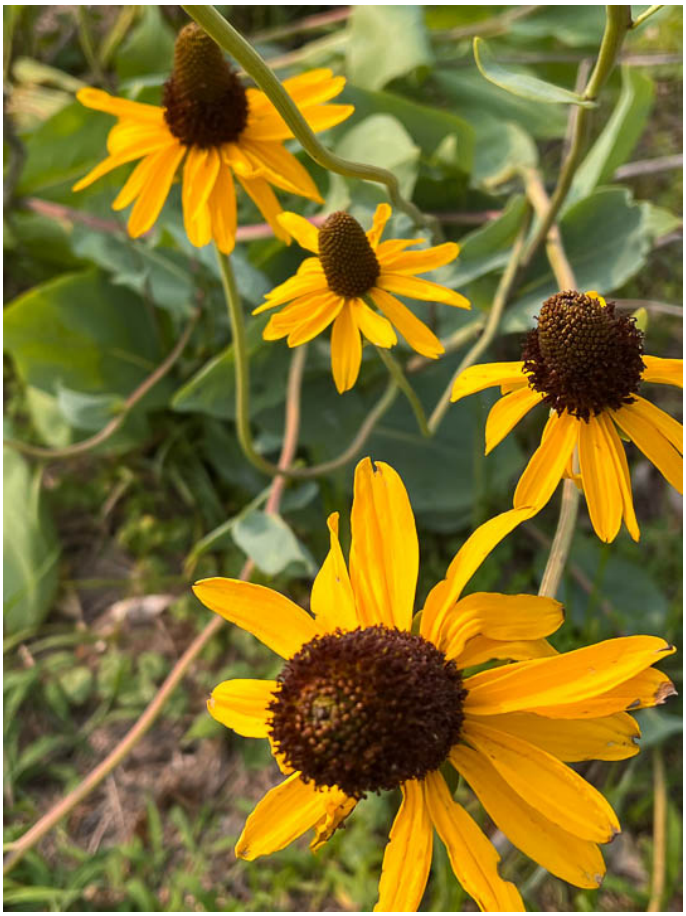
Chemical control is also possible in the form of preemergence herbicides in the spring. Products such as Barricade (prodiamine), Pendulum (pendimethalin), Pre-M (pendimethalin), and Dimension (dithiopyr), have proven effective in controlling both yellow and green foxtail. Always ensure to follow labeled instructions.

Plant of the Week

By: Ginny Rosenkranz

Rudbeckia maxima, giant coneflower or cabbage-leaf coneflower is a native herbaceous perennial that lives up to its name, growing 5-7 feet tall and 3-4 feet wide. Plants thrive in full sun and moist, but well drained, organically rich soils. Once established, *Rudbeckia maxima* can tolerate some flooding, drought, and medium amounts of deer grazing. Giant coneflower starts as a basal clump of huge, green-blue, slightly waxy leaves that expand to 2 feet long and almost a foot wide. In the summer, the flower stalks rise from the center of the leaves with strong tall stems that hold many coneflowers per stem, with bright 2-3 inch golden yellow, slightly drooping ray petals that surround a 2-6-inch-tall dark chocolate brown central cone. Plants can spread by rhizomes or by seeds, or the ones that are left over from the goldfinches and other songbirds that feast on them in the late summer. *Rudbeckia maxima* is cold tolerant in USDA zones 4-9 and attracts many pollinators

including butterflies. Plants can be planted in butterfly or nectar gardens, cottage gardens, low maintenance gardens, native plant gardens, and rain gardens. Although the plants grow up to 7 feet tall, the basal leaves of the plants only grow 1-2 feet tall and the flower stalks have few leaves, allowing the plants behind the giant coneflower to be easily seen. There are no serious insect or disease problems other than a susceptibility to powdery mildew.



***Rudbeckia maxima*, giant coneflower or cabbage-leaf coneflower is a native herbaceous perennial that grows 5-7 feet tall and 3-4 feet wide and attracts many pollinators.**
Photos: Ginny Rosenkranz, UME

Degree Days (as of June 28)

Abingdon (C1620)	1232
Annapolis Naval Academy (KNAK)	1377
Baltimore, MD (KBWI)	1437
College Park (KCGS)	1349
Dulles Airport (KIAD)	1362
Ft. Belvoir, VA (KDA)	1304
Frederick (KFDK)	1267
Gaithersburg (KGAI)	1204
Gambrils (F2488, near Bowie)	1318
Greater Cumberland Reg (KCBE)	1096
Perry Hall (C0608)	1171
Martinsburg, WV (KMRB)	941
Natl Arboretum/Reagan Natl (KDCA)	1648
Salisbury/Ocean City (KSBY)	1381
St. Mary's City (Patuxent NRB KNHK)	1668
Westminster (KDMW)	1425

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 **941 DD** (Martinsburg, WV) to **1668 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.

Winged euonymus scale – egg hatch / crawler **(892 DD)**
European fruit lecanium scale – egg hatch / crawler **(904 DD)**
Cryptomeria scale – egg hatch / crawler **(937 DD)**
Azalea bark scale – egg hatch / crawler **(957 DD)**
Hibiscus sawfly – larva (early instar) **(1015 DD)**
Japanese beetle – adult emergence **(1056 DD)**
Fletcher scale – egg hatch / crawler **(1105 DD)**
Spotted lantern fly – adult flight **(1112 DD)**
Fall webworm – egg hatch (1st gen) **(1142 DD)**
Indian wax scale – egg hatch / crawler **(1145 DD)**
Oriental beetle – adult emergence **(1147 DD)**
Peachtree borer – adult emergence **(1181 DD)**
Green June beetle – adult emergence **(1539 DD)**
Pine needle scale – egg hatch / crawler (2nd gen) **(1561 DD)**
White prunicola scale – egg hatch / crawler (2nd gen) **(1637 DD)**
Obscure scale – egg hatch / crawler **(1774 DD)**
Spotted lanternfly – egg laying **(1825 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.

July 26, 2023 (1 - 3 p.m.)
IPM Scouts' Diagnostic Session
Location: CMREC, Ellicott City, MD

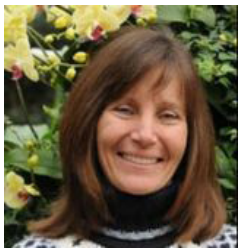
July 27, August 1-3, 2023
Drone School
Locations: CMREC in Ellicott City, MD and Falcon Ridge Farm, Westminster, MD

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

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

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

Thank you to the Maryland Arborist Association, the Landscape Contractors Association of MD, D.C. and VA, the Maryland Nursery, Landscape, and Greenhouse Association, Professional Grounds Management Society, FALCAN and USDA NIFA EIP Award # 20217000635473 for their financial support in making these weekly reports possible.
Photos are by Suzanne Klick or Stanton Gill unless stated otherwise.