UNIVERSITY OF MARYLAND EXTENSION

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

**Commercial Horticulture** **July 15, 2022**

## 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) and David Clement (Extension Specialist)
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)

## IPM Diagnostic Evening Walk

By: Stanton Gill

If you contact the Maryland Arborist Association, you can sign up for the evening IPM Pest Diagnostic Session at Woodmont County Club on July 21 from 5:00 p.m. – dark. Karen Rane, David Clement, Andrew Ristvey, Phil Normandy, and I will be conducting a walk around the grounds of Woodmont County Club to help you improve your IPM diagnostic skills. A dinner is included at the country club which is covered by Davey Tree Company.

Register by phone by contacting Danielle Bauer Farace, Maryland Arborist Association,410-928-4888.

## Drone Training

**July 28, August 4, and August 11, 2022**

**Registration information and links are available on the IPMnet conference page**

## San Jose Scale

By: Stanton Gill

We are receiving samples of crabapples and cultivated apple trees and plums from landscapers who maintain their customers' fruit trees. The second generation of the armored scale commonly called San Jose scale, *Quadraspidiotus perniciosus,* is now being found on the fruit and the stems of infested plants. The first generation was back in May.

**The second generation of San Jose scale is showing up on fruit at this time of year.**

**Control:** You can apply the insect growth regulator (IGR) Buprofezin, sold under the names Buprofezin or Applaud. Buprofezin is effective via contact, ingestion, and vapor activity. In addition to its primary mode of action, it also suppresses egg-laying and causes egg sterilization in infected adults.

## Spotted Lanternfly Update

By: Paula Shrewsbury

Reports throughout MD and in the region are that spotted lanternfly (SLF) are in their 3rd and 4th instars. In the 3rd instars, SLF are black with white spots, when they molt to 4th instar they will be red with white spots and black markings. See the images to know what you should be seeing now (3rd and 4th instars). We should expect to see adult emergence starting in the next few weeks (1,112 DD). Please email me (pshrewsbury@umd.edu) and Stanton Gill (SGill@umd.edu) when you begin to see adult SLF.

**Spotted lanternfly 3rd (black with white spots) and 4th (red with white spots and black markings) instar nymphs.**
**Image from USDA website**

## Ambrosia Beetle Update

By: Stanton Gill

Well, I asked if there was ambrosia beetle activity in last week's IPM alert, and within 2 hours of the release, I had calls with reports of fresh frass emerging from trees.

Sara Jensen, SavATree, sent this email on Monday morning: "I didn't snap any photos but a project I just visited this morning had Six (6)! Tulip Poplars and one (1) White Oak ALL struck by lightning in the last several weeks during the same event. All but one had severe ambrosia beetle activity. Never seen anything like it.

The UMD Home and Garden Ask Extension page received a report last week of ambrosia beetle activity in Calvert County. Frass tubes were covering the trunk of a crape myrtle. This tree had been topped in April.

**This crape myrtle in Calvert County is heavily infested with ambrosia beetles**
**Image from UMD HGIC Ask Extension website**

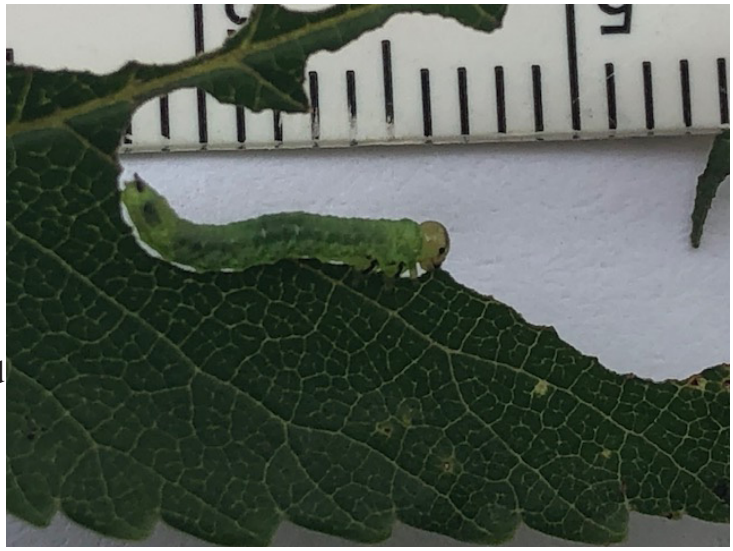
## Zig-Zag Sawflies on Elms

By: Stanton Gill

Ok, another invasive species to worry about on trees – the elm zigzag sawfly, *Aproceros leucopoda.* At least it has a dynamic common name. This member of the sawfly group (Hymenoptera) is showing up in New England and now how has been identified in Maryland. Miri Talabac of Home and Garden Information Center of the University of Maryland Extension received pictures of the zig zag larva feeding on an elm in Monkton, Maryland.

The elm zigzag sawfly is native to Asia and was spotted in Quebec, Canada for the first time in 2020. In the U.S., the insect was also recently confirmed in Virginia in 2021 and 2022.

We really do not have a complete life cycle of this new invasive pest in Maryland yet. If you find customers with zig zag sawfly damage on elms, let us know where it is occurring and on what species of elm it is damaging.



**A zigzag sawfly larva was found feeding on an elm in Monkton.**
**Image from UMD HGIC Ask Extension website**

## Redbud Trees and Frequent Rains

By: Stanton Gill

With the frequent down pours of rain this summer, redbuds are continuing to flush new growth as we move into mid-summer. Much like the birch trees, the higher moisture levels of summer are resulting in these frequent flushes of new growth. This has been a good growing season so far, with the rains showing up at the right times. Recently, we have had some bad storms come through the area.

## Tornadoes Touch Down in Maryland this Week

By: Stanton Gill

Tornadoes touched down in several locations in Maryland this week on July 12th. College Park was slammed with winds of 70 mph. The campus was running on back-up generators and campus was shut down on Wednesday. Large trees fell across Rt. 1 in College Park.

In Westminster on Tuesday, we were visiting Schott's Nursery in Westminster and left at 4:00 p.m. At 4:30 p.m. 90 mph winds blew in with a tornado that ripped from Mayberry Road going several miles to reach Rt. 97. Trees were falling across roadways through upper Carroll County. Power lines were down in Westminster and College Park most of July 13th.

**These photos were in a quarter mile stretch off Corbett Rd in Monkton but Kevin has seen more all over the Phoenix/Monkton area**
**Photos: Kevin Nickle, Scientific Plant Service**

## Thinning Fruit for your Customers

By: Stanton Gill

Mid- July is still a good time to thin apple and pear fruit on your customer's trees. **Why thin fruit in July:**

1. Discourage overbearing & early fruit drop.

2. Improve remaining fruit size, color, & quality.

3. Help to avoid limb damage from a heavy fruit load.

4. Stimulate next year's crop & help avoid biennial bearing. Fruit spurs form in Late July to early August for next year's crop

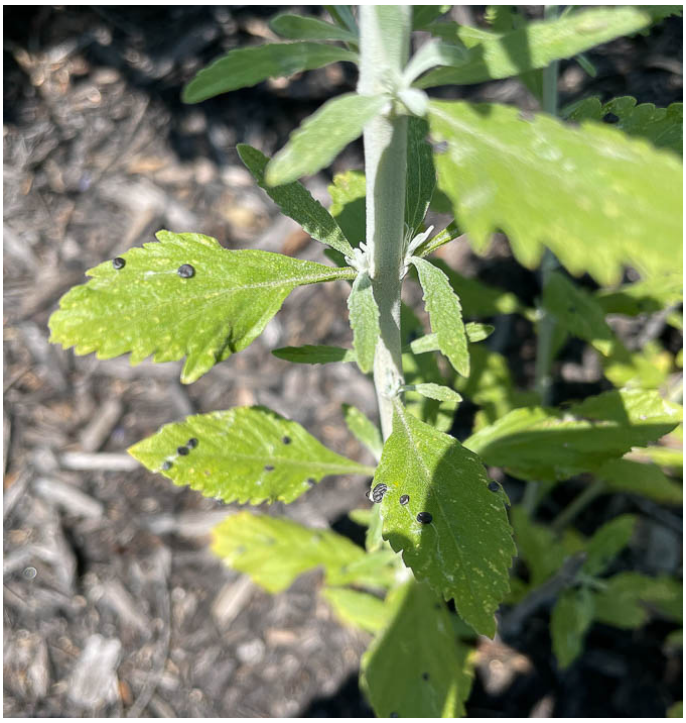
5. Generally, I only leave 20 - 25% of the crop on the tree. If you have a cluster of 4 fruit next to each other thin out 3 of them.

## Spider Mites, Powdery Mildew, and Bagworms

Marie Rojas, IPM Scout, is still seeing high populations of spider mites on boxwood, a lot of powdery mildew on *Cornus florida*, and a few more bagworm hatch-out in Montgomery County.

## Artillery Fungus

Anna Simons, Maxalea Inc., found artillery fungus in Baltimore County this week. Anna noted, "They were all over a wide variety of plants including *Viburnum*, *Calamograstis*, and *Perovskia*, with no visible damage to the plants. They were stuck by a silk substance to the leaves, but when we removed them, they looked the same underneath." Artillery fungus (*Sphaerobolus* spp.) is a wood-decaying fungus responsible for causing unsightly spots on objects located in its immediate vicinity. These spots are often mistaken for tar spots, scale insects, or insect frass. The spots are actually glebal masses (peridioles) that have been forcibly ejected from the tiny cup-like structures of the fungus.



**Artillery fungi has been found on shrubs and perennials in Baltimore County this week. Photos: Anna Simons, Maxalea, Inc.**

## Buyers Beware! A Growing Concern for Unregulated Microbial Products

By: Sheena O'Donnell, Summer Intern, UMD Extension

There has been concern expressed about the safety of using unregulated biopesticides in greenhouse and nursery operations. The ease of online ordering is leading people to use third-party distributors to order standard pesticides, biopesticides, and biocontrols. There is valid cause for concern regarding the quality (and therefore safety) of the product received. Suzanne Wainwright-Evans was able to give a wonderful talk on these issues at the recent Biological Control Conference on June 30, and we would like to pass a summary of her thoughts along to you here.

Quality Control: The general area of concern is the overall quality of the product you are ordering and receiving. Sometimes, the product has been through multiple hands before arriving to your location. Reputable suppliers will take care to follow protocol in packaging and transport to ensure it gets to you quickly and safely. However, in many situations, differing (sometimes not ideal) conditions at these waypoints along with shipping or handling stress increase the chance that the integrity of the product is compromised. It is important to check and open the package immediately upon receipt, and inspect it in whatever way is appropriate for the product you have ordered to rule out potential issues from transport or storage. Pay attention to the amount of time your product has spent in shipping and the state of the cold or heat pack upon arrival (if applicable). Quality issues can also be intrinsic to the product or manufacturer in ways that do not concern shipping, handling, or storage. Choosing a suitable product for your crop: Another area of concern lies particularly in businesses that find it difficult to find EPA registered pesticides for federal reasons, such as medical marijuana. States have approved lists of active ingredients for use in this field but since this industry still has some hoops to jump through to get federal approval, the specific products which contain these active ingredients cannot undergo the strict EPA testing and therefore cannot be registered for use in the industry. The first risk involved with this situation is quality/efficacy of the product. Manufacturers may list certain contents on their label, but if the product is not regulated then growers have no way of knowing if the contents or concentrations are accurate, or whether it was diluted with something else. This puts growers at a double risk: that of financial loss in the case of an ineffective product, and that of unexpected dangerous interactions or ingredients even if they do choose a product on their state curated safe product list. It is difficult, yet still imperative, to determine that the specific product your business uses for biological control is compatible with your crop's intended use. For this reason, those industries that are not federally supported bear a particularly complicated responsibility to do their research. It is best to establish a relationship with a known company that follows good labeling practices and ensures reliable and effective products.

Inaccurate or Sketchy Labeling: The third area of concern, particularly when buying fungal or bacterial biocontrol products, is the possibility that the label on the product is either inaccurately reporting the full array of contents, spore count/ % active ingredient, or not reporting these things at all. You could in theory do a culture test in the case of entomopathogens, but we advise against this for growers since many microbe patterns look similar and you'd have to be a mycologist to be completely sure. EPA-registered products undergo strict regulations during manufacture and packaging, ensuring accurate and complete labeling of the product. If you do not see EPA registration on the label,it is not labelled for use in the United States. For example, the label included in the photo would be a good example of one on which we need to see more information.


**Read a label closely to see if it has an EPA registration number**
**Photo: Neith,Little, UMD Extension**

In conclusion, when ordering biopesticides online, make sure the label has full information on the product and consider it a red flag if the label is short. In order to avoid mislabeled products, products with compromised quality, or those that are incompatible with your current IPM plan the best practice is first to order from a reputable supplier, make sure the label includes all important information before you buy, and then to uphold quality control standards by checking your product when you receive it as well as either using the product immediately or maintaining an appropriate storage area as applicable.

## Crapemyrtle Aphids

Elaine Menegon Good's Tree and Lawn Care, found active aphids on crape myrtles this week in Lancaster, PA. This is not your typical aphid. Most aphid species only produce winged stages (alates) when they want to disseminate the populations or there is environmental stress on the plant on which it is feeding. All adult crapemyrtle aphids have wings so they can take flight whenever they want and spread to a new plant. If populations are heavy, sooty mold will be very noticeable. Black sooty molds are fungi that grow on honeydew produced by the aphids. Black sooty mold can turn the entire plant and unsightly black color detracting from the visual aesthetics of crape myrtle.

Control options include Altus (systemic activity), Endeavor (a translaminar material that can be applied to foliage and will travel to the bottom of the leaf), and horticultural oil (a contact material so be sure to get good coverage of the foliage). Endeavor is a good choice if you want to use a material with limited impact on beneficials. Just relying on predators might not be satisfactory for your customers because these aphids reproduce so quickly and produce a lot of honeydew on which sooty mold grows.


**Crapemyrtle aphids**
**Photo: Jim Baker, North Carolina State University, Bugwood.org**

**Sooty mold can be heavy when crapemyrtle aphid populations are high.**
**Photo: Elaine Menegon, Good's Tree and Lawn Care**

## Root Aphids

By: Stanton Gill

Brian Kunkel, University of Delaware Extension, and I published the summary of control options for root aphid in the December issue of the Journal of Environmental Horticulture. If you would like a copy send me an email at Sgill@umd.edu.

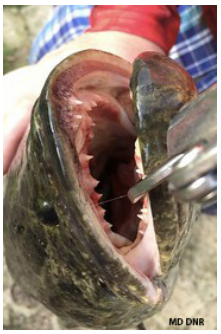
## Non-native and Invasive Fish Alert - Northern Snakehead

By: Andy Lazur, UME Water Quality Specialist

First introduced in Maryland in a private Crofton pond in 2002 after two fish bought as pets outgrew the aquarium, the Northern Snakehead, *Channa argus*, has spread throughout several Maryland waterways including the Blackwater, Patuxent, Potomac, Wicomico rivers and their tributaries. It is suspected that there were multiple releases of live snakeheads. The northern snakehead is native to China and parts of Siberia, and is considered a delicacy and grown for food. Snakeheads are known to tolerate a wide range of habitats and temperatures. It lives primarily in freshwater, but can tolerate low salinity. It has a unique ability to breathe air through a specialized organ, and can live for short periods out of water if kept moist. In addition, it is a highly predatory species and potentially injurious to native fish populations. Several characteristics of snakehead make them especially invasive: they can spawn 2-3 times per year in contract to once per year for native bass species, lay several hundred thousand eggs, and both the male and female guard the nest and young reducing predation by other fish.

**Similar in appearance to the native bowfin, snakehead can reach up to 20 pounds with 6 -10 pound fishare commonly caught.**

Then concern over snakeheads is related to their voracious predatory nature, consuming fish, crustaceans, and amphibians. Because of their feeding habits and preferences, snakehead may outcompete native sport fish species such as largemouth bass, thereby negatively affecting the natural balance of native predator and prey species. Another concern is the risk of introducing and spreading parasites and diseases that could harm native species.




**The large mouth and sharp teeth make snakehead an effective predator.**

Snakehead are listed as an injurious wildlife species by the US Fish and Wildlife Service and It is prohibited from importation to the US. Further, it is illegal to possess live snakehead in Maryland. Maryland Dept. of Natural Resources and the US Fish and Wildlife Service study the fishes' population as well as impact on native species. They have tagged fish to help track its movement and determine ways to control it. Catching snakehead is encouraged, though once caught the fish must be euthanized (See DNR sheet on humane methods): https://dnr.maryland.gov/fisheries/documents/SnakeheadHarvester2.5.pdf. Never move and release live fish thinking it is humane. The damage these fish can cause to native fish and other aquatic species is significant. If you catch a snakehead consider helping fisheries biologist track the species: DNR also has a reporting tool (https://survey123.arcgis.com/share/bf026700cada433296cab48ab2a090b6).

## Pesticide Ban in Baltimore City

Please see the following links for details on the new pesticide ban that went into effect in Baltimore City on July 1, 2022. The application of glyphosate, chlorpyrifos, and neonicotinoids is prohibited on lawns, playgrounds, mulched recreation areas, children's facilities, and playing fields. The information is available at https://www.baltimoresustainability.org/pesticide-control-and-regulation/.

## Beneficial of the Week

By: Paula Shrewsbury

**Slugs - What eats those slimy gastropods?**

We are having some wet weather which makes me think of slugs. Slugs, along with the snails, are in the phylum Mollusca and the class of invertebrates called Gastropoda. Any shell-less mollusc is referred to as a slug, though there are many kinds of slugs.


**Violet ground beetles have been found feeding on slugs Photo: Mary C Legg, Bugwood.org**

Biologically slugs are somewhat interesting organisms. For example, they use muscular contractions for locomotion. It is pretty interesting to watch a slug move. They are also hermaphrodites. Basically, each individual slug has both male and female reproductive parts. However, two individual slugs will exchange sperm with each other and both produce eggs. Slugs are not usually thought of fondly by many. First because they eat and damage plants, followed by the fact that they produce slimy mucus – which can be somewhat disgusting to some. When controlling slugs, the use of baits is the more common tactic. However, it is important to know that other organisms eat slugs and provide some level of biological control. For example, some frogs, toads, snakes, hedgehogs, salamanders, turtles, rats, and birds consume slugs. Some slugs are carnivorous and are predators of other slugs and snails. Carnivorous slugs will follow the slime trail of another slug as part of its hunting strategy. Beneficial nematodes, such as *Phasmarhabditis hermaphrodita*, are commercially available in several European countries and used in biological control programs targeting several common slug species. *Phasmarhabditis hermaphrodita* is not commercially available in North America and its presence has not yet been confirmed. Juvenile stages of the nematodes actively search for slugs. Nematodes enter the slug through its breathing pore (pneumostome) in the slug's mantle (section on the dorsal side of the slug just behind the head). Nematodes release bacteria into the slug, the bacteria attack the slug which stops the slug from feeding and eventually kills it, and the nematodes feed on the bacteria. This is a nice mutualistic relationship that benefits everyone, but the slug. There are a few entomologists conducting research on nematodes as biological controls for slugs. Hopefully, in the near future using nematodes will be viable control option. There are flies known as marsh flies (family Sciomyzidae) whose larvae are active in soil and

**Convergent lady beetles will feed on on slugs**

are predators or parasites of snails, snail eggs, and slugs. The larvae of some species of ground beetles (family Carabidae), rove beetles (family Staphylinidae), and lightening bugs (Lampyridae) are carnivorous and actively hunt slugs, worms and other insects. These beetles are frequently found under logs or stones, in soil, and other habitats that also favor slugs. Lady beetles have also been seen feeding on slugs. As we discuss repeatedly in IPM, biodiversity at all levels of the food chain is important for healthy and functioning ecosystems. Encourage these predators by providing favorable habitat, combined with other non-chemical tactics such as sanitation, handpicking, traps, barriers, and baits for slug control.

Click here for a YouTube of a ground beetle eating a slug.

### Weed of the Week

By: Kelly Nichols

Annual bluegrass, *Poa annua*, is a common weed in the Mid-Atlantic States and the United States in general. This weed is mostly noted in the spring and appears as a bluegrass but with a slightly different color. Annual bluegrass is an annual, usually classified as a winter annual, though the location of the site can change this in some regions. With our mild winters, this weed in many cases germinates in the early fall. Therefore, pre-emergent products should be applied in August or September.

**Annual bluegrass**
**Figures 1 & 2. Photos: Chuck Schuster, UME Ag Agent, Emeritus**

Annual bluegrass stands out in a lawn; its different color and texture make it noticeable. Most winter annuals will die soon after seed production in the spring, but on warmer protected sites it may continue to grow much like a perennial (Figure 1). Annual bluegrass is noticed as it grows in an erect or small clump (Photo 2). It does tolerate close mowing heights, but can reach heights of nearly one foot in landscapes and unmanaged turf. Its ability to adapt to close mowing takes away one method of cultural control. One distinctive characteristic is the "boat-shaped" tip that the leaf blades form. The blades of this grass are without hairs and are narrow, but long. Blade dimensions can reach four inches in length and one eighth inch in width. Annual bluegrass prefers a moist to wet soil. If the scattered thunderstorms that we've seen in some areas this year continue into late summer, that may increase the change of its establishment.

No single method of control works on annual bluegrass. Annual bluegrass control starts with moisture control as one of the cultural methods used to prevent this weed. Preventing areas of the turf from being overly wet is the objective. Moving downspout splash blocks to prevent puddling is useful, but sometimes difficult. Using irrigation water carefully can help manage this grass, especially in shady areas. Compaction is another condition that creates the ideal site for annual bluegrass. It is recommended not to aerate during the germination period for annual bluegrass (fall germinating). While collecting clippings is not usually recommended, if you have an area with a substantial stand of annual bluegrass, consider collecting the clippings during seed production periods to reduce the seed bank for the following fall.

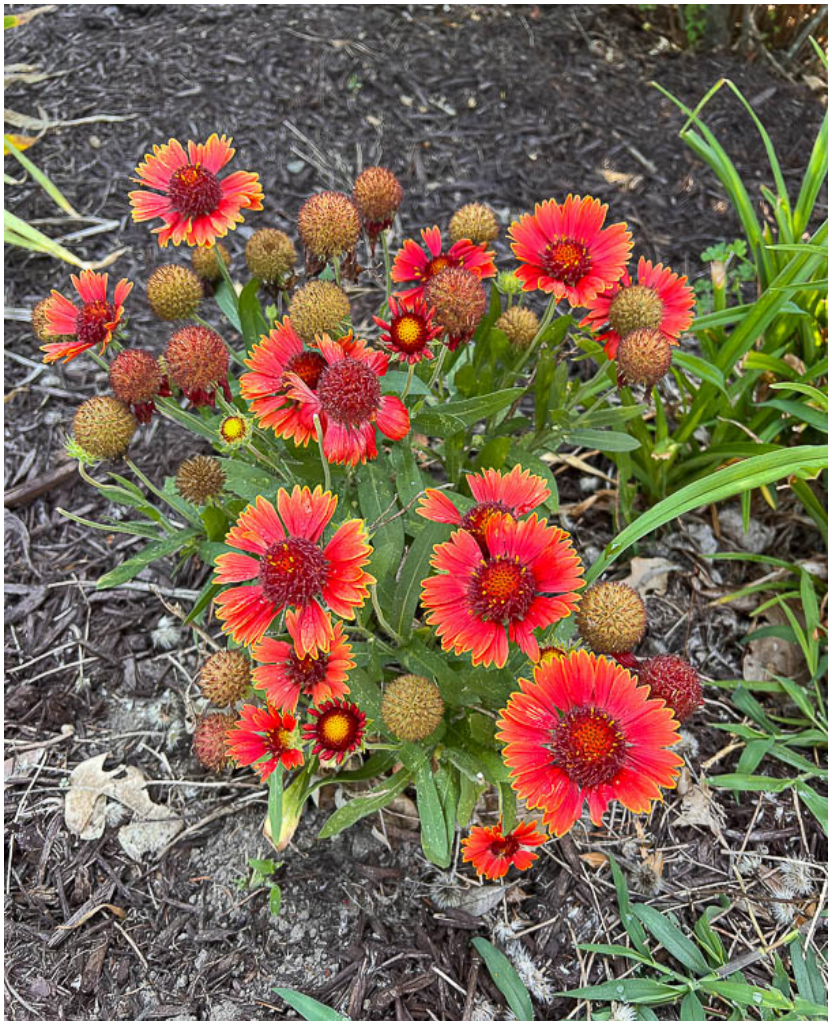
Prevention is always the best method of control. Mulches in landscape settings using a weed barrier beneath, and in turf setting, prevention of seed movement to a site on mowers by cleaning is very useful. Early detection and elimination is the next line of defense. Rogue out when possible. Chemical control in landscape settings includes prodiamine (Factor, Barricade), oxadiazon (Ronstar), benefin/oryzalin (XL), benefin/ trifluralin (Team), and Surflan as pre-emergent products. In turf, monitor soil temperatures and when the daytime high drops to 75° F for four consecutive days, consider applying a pre-emergent product. It is early to be considering this method with the current temperatures in the 80s to 90s, but planning is important.

Pre-emergent herbicides can lead to some resistance issues in the same manner as post emergent products. When considering your product of choice, it should be noted to not use the same type of herbicide each season. There are two different mode of action groups of pre-emergent herbicides for residential lawns: group 1 (these are called dinitroaniline herbicides) and the second group of products will be from the group that is a cellulose biosynthesis inhibitor class and will include products that contain indaziflam. It might be suggested that your two application program include products from group 1 in one application and the indaziflam group in the second application. Non-selective post emergent control can be easily obtained using glufosinate (Finale) and glyphosate products. Remember that pre-emergent failures are often the fault of improper application timing (late). Again, it's important to apply pre-emergent products for this winter annual in the August and September timeframe.

## Plant of the Week

By: Ginny Rosenkranz

*Gaillardia* 'SpinTop Yellow Touch' is an herbaceous perennial of the cultivar of *Gaillardia pulchella*, that will thrive in the sunny landscape. It is a wonderful and colorful addition to the landscape with its bright red-orange petals, highlighted by bright yellow tips. The plants are a part of the SpinTop Series that feature a great branching habit that produces multiple buds on every stem. The plants are compact and uniform in size and bloom with large daisy-like flowers that blanket the plants from spring through the first frost. The petals are notched edged and surround a dark red-orange button. The foliage is green-gray, growing 8-10 inches tall and wide. Cold hardy in USDA zones 3-9, the plants thrive in full sun and dry to medium, well-drained soils, preferring sandy soils if possible. They are very heat, humidity, and drought tolerant, and deer and rabbits have not bothered the plants even with heavy deer pressure. Pollinators like butterflies love the large daisy-like flowers that are also good cut flowers. Plants can brighten up sunny pollinator gardens, cottage gardens, borders, and pathways. Pests can occasionally include aster yellows, fungal leaf spots, and powdery mildew, while insect pests could include aphids and leaf miners.



***Gaillardia* 'SpinTop Yellow Touch' has a great branching habit**
**Photo: Ginny Rosenkranz, UME**

### Degree Days (as of July 13)

| | |
|---|---|
| Aberdeen (KAPG) | 1618 |
| Annapolis Naval Academy (KNAK) | 1833 |
| Baltimore, MD (KBWI) | 1902 |
| College Park (KCGS) | 1759 |
| Dulles Airport (KIAD) | 1813 |
| Ft. Belvoir, VA (KDA) | 1816 |
| Frederick (KFDK) | 1665 |
| Gaithersburg (KGAI) | 1692 |
| Gambrils (F2488, near Bowie) | 1794 |
| Greater Cumberland Reg (KCBE) | 1657 |
| Martinsburg, WV (KMRB) | 1582 |
| Natl Arboretum/Reagan Natl (KDCA) | 2109 |
| Salisbury/Ocean City (KSBY) | 1906 |
| St. Mary's City (Patuxent NRB KNHK) | 2134 |
| Westminster (KDMW) | 1992 |

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 **1582 DD** (Martinsburg, WV) to **2134 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.

- Green June beetle – adult emergence (**1539 DD**)
- Pine needle scale – egg hatch / crawlers (2nd gen) (**1561 DD**)
- White prunicola scale – egg hatch / crawlers (2nd gen) (**1637 DD**)
- Obscure scale – egg hatch / crawlers (**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**)
- Euonymous scale – egg hatch / crawler (2nd gen) (**2235 DD**)
- Mimosa webworm – larva, early instar (2nd gen) (**2260 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

**July 28, August 4, and August 11, 2022**
**Drone Training Program**
Registration information and links are available on the IPMnet conference page

**July 21, 2022**
**MAA and UMD Extension Pest and IPM Diagnostic Walk**
Location: Woodmont Country Club
At this point, you can register by phone by contacting Danielle Bauer Farace, Maryland Arborist Association, 410-928-4888

**Urban Tree Summit**
**Dates: September 7, 8, 14 and 15, 2022**
Montgomery Parks and Casey Trees, Washington D.C., present the eleventh annual conference — Urban Tree Summit. Presentations will focus on the health and welfare of trees in our increasingly developed landscapes. Learn from some of the world's leading experts about innovative efforts to plant, protect and preserve trees in urban and suburban settings.
Registration Link: https://montgomeryparks.org/about/divisions/arboriculture/urban-tree-summit/

## Fall Horticulture Classes at CCBC

You can find out about fall horticulture classes at CCBC by going to their website.

## Fall Environmental Horticulture and Sustainable Agribusiness Classes at Montgomery College

You can find out about fall horticulture classes at Montgomery College by going to their program website. Courses include:

**HORT 215 Integrated Pest Management and Entomology:** Hone your pest management skills with Stanton Gill. Explore the identification of key pests, their life cycles and control methods, with emphasis on integrated pest management strategies.

**HORT 222 Sustainable Turfgrass Management**: Discover the proper way to manage turfgrass by using the newest and most adaptable turfgrass varieties for minimum insect and disease problems. Organic lawn care and alternative groundcovers will be discussed.

**HORT 215 and HORT 222 and other select courses in the Program, have been approved by the MD Department of Agriculture to prepare Greens Industry professionals for pesticide application certification in Category III.

**Commercial Ornamental IPM Information**
**extension.umd.edu/ipm**

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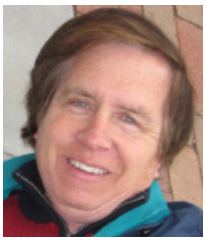
## CONTRIBUTORS:

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



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, and FALCAN for your financial support in making these weekly reports possible.

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