

Commercial Horticulture

August 26, 2022

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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

Coordinator Weekly IPM Report:

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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)

White Prunicola Scale, Tuliptree Scale, Fern Scale, and San Jose Scale: All Moving Into Crawler Stage

By: Stanton Gill

We are moving into the 3,000 plus degree day range for most of Maryland this week. With this white prunicola scale, tuliptree scale, fern scale (on *Liriope*) and San Jose scale (on mainly fruit trees) should be monitored for crawler activity and treatment made. Marie Rojas, IPM Scout, is reporting that tuliptree scale are bulking up on *Liriodendron tulipifera*. One of the plant indicators, and one of my favorite trees, the seven son tree is coming into bloom, and is a good phenological indicator. The IGRs Talus and Distance work well on crawler stages.



Look for crawlers of tuliptree scale as we move into September.
Photo: Marie Rojas, IPM Scout

Spotted Lanternfly Comments

By: Stanton Gill

Comments from John Akehurst:

“I was just reading last week’s issue of the IPM Report. I have been following along with the Spotted Lanternfly updates.

I live in Harford County right along Rocks State Park. This year I have witnessed a huge increase in the Spotted Lanternfly around my house throughout the summer (way more than last summer), They are in my pool skimmers (Everyday), on the exterior walls of the house, and about two weeks ago, I started seeing the adult flying versions of them. (Hopefully I don’t get these little jumpers inside the house like I had with the brown marmorated stink bugs a few years back because they will be much harder to catch with the jumping capabilities.)

So I saw your update that Suzanne sent out last week and wanted to comment. The past 2 weeks, I have witnessed a huge increase in wheel bugs around my house. Now I have not observed any of them feeding on the lanternfly but I am anxious to look for that when I get home this evening. But literally this weekend as I sat pool side, I saw numerous wheel bugs, and thought to myself ... I’ve been seeing a lot more of these then I usually do around here, I wonder why? Guess they have increased their presence around the home because of the spotted lanternfly? Of course, I don’t have scientific research to prove this ... just an observation and as I said above, I will do a little more investigating this week when I am home in the yard.”

Sometimes you got to have a sense of humor about spotted lanternfly

SLF adults are flying about in late August and alighting on all sorts of objects. You have to laugh when you see this picture of where a SLF adult chose to land. Shawn Walker sent in this picture of an adult spotted lanternfly that landed on the nose of a somewhat angry wood statue at Marty’s Mystical Woods in Hagerstown.



A spotted lanternfly landed on the nose of this sculpture at Marty’s Mystical Woods in Hagerstown.

Photo: Shawn Walker

Many Caterpillars Are Active This Week

Connie Bowers, Garden Makeover Company, found a very heavy infestation of fall webworms on a Forest Pansy redbud this week. She noted that it has never been hit by them until recently. Marie Rojas, IPM Scout, also found second generation fall webworms on *Liquidambar*.



Fall webworms are heavily infesting this Forest Pansy redbud.
Photo: Connie Bowers, Garden Maekover Company



Fall webworms are also feeding on *Liquidambar*.
Photo: Marie Rojas, IPM Scout



Asimina webworm caterpillars are feeding within the folded leaves of paw paws.
Photo: Marie Rojas, IPM Scout

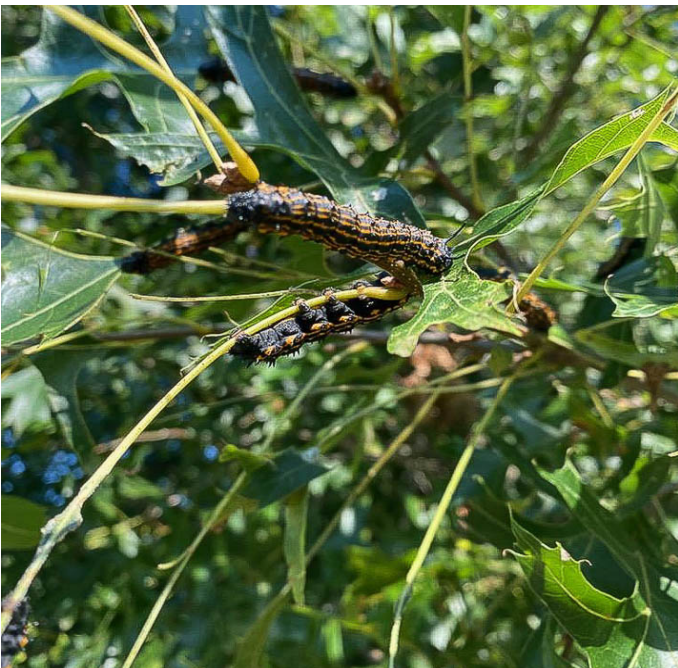
Azalea caterpillars, *Datana major*, are also active at this time of year. They feed on various plants, but azaleas are their primary host.



These azalea caterpillars were active in Greene County, Virginia this week. You can also find them in is area. Caterpillars change coloring as they molt. Mature larvae have black and yellow stripes.

Photo: Dick Franklin

Orange-striped oakworm: Bob Good, Good's Tree and Lawn Care, found active orange-striped oakworms in Dillsburg, PA last week. Ernie Stephenson, Naturalawn of America, found some mature orange-striped oakworms in Timonium. As they mature, you will find them crossing parking lots and sidewalks looking for a place to pupate.



Orange-striped oakworms

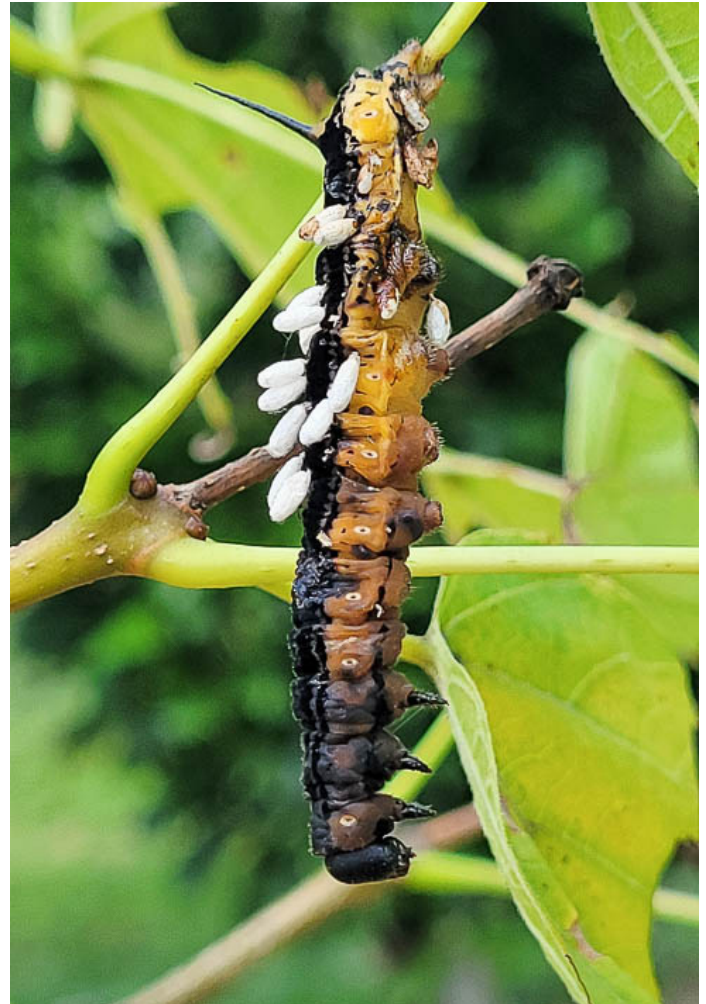
Photo: Ernie Stephenson, Naturalawn of America



Orange-striped oakworms

Photo: Bob Good, Good's Tree and Lawn Care

Control of Caterpillars: Control is best when caterpillars are in the early instar stage. Control options include Bt, Spinosad, Acelepryn, and Mainspring. Often, control of these caterpillars is not feasible or necessary. There are many parasitoids and predators that feed on caterpillars.



Marie Rojas found parasitized catalpa sphinx moth caterpillars. She pointed out that the one pic has a tiny parasitic wasp in situ (left photo - middle).

Marie Rojas, IPM Scout

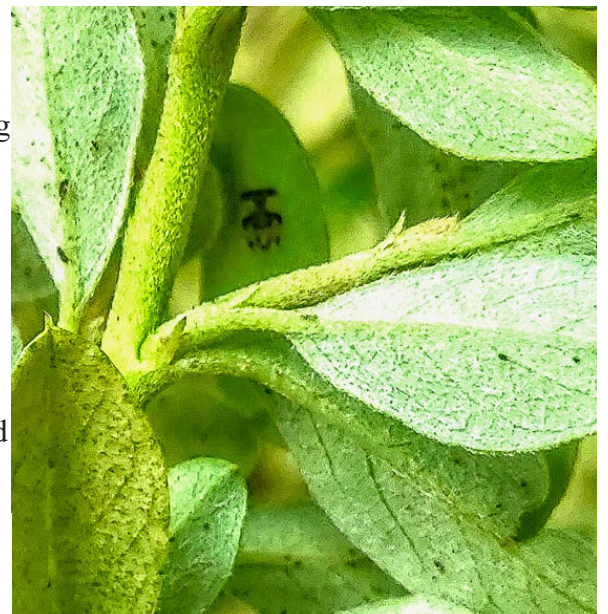
Hawthorn Lace Bugs

Nicolas Tardif, Ruppert Landscape, found hawthorn lace bugs on cotoneaster in D.C. on August 15. Lace bugs cause white stippling on the upper side of the foliage and leave black fecal spots on the undersides. There are several generations a year.

Control: Look for signs of newly stippled leaves and nymphs on host plants growing particularly in sunny, dry sites. If infestations are high and controls are warranted use properly labeled chemicals. Treatment materials such as Acelypryn or Mainspring, acetamiprid (Tristar), or products with acephate are systemic. Non-systemic products such as horticultural oil should be directed so that the underside of foliage is thoroughly covered.

Look on the undersides of the leaves of cotoneaster for lace bugs if stippling damage is visible from above.

Photo: Nicolas Tardif, Ruppert Landscape



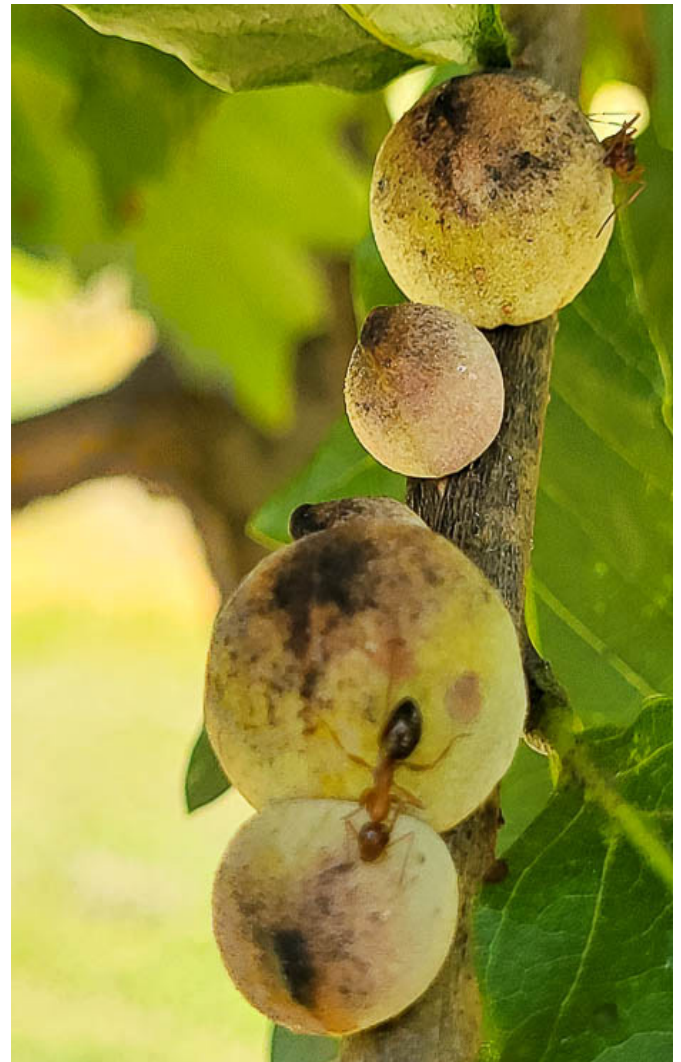
Galls on Oaks

Marie Rojas, IPM Scout, found pine cone gall and rough oak galls. The rough oak galls were being visited by ants and hornets. These galls are caused by small wasps. No control is necessary.



Pine cone oak galls start out pink to red and then turns this tannish color.

Photo: Marie Rojas, IPM Scout



The rough oak gall produces honeydew that attracts wasps and bees.

Photo: Marie Rojas, IPM Scout

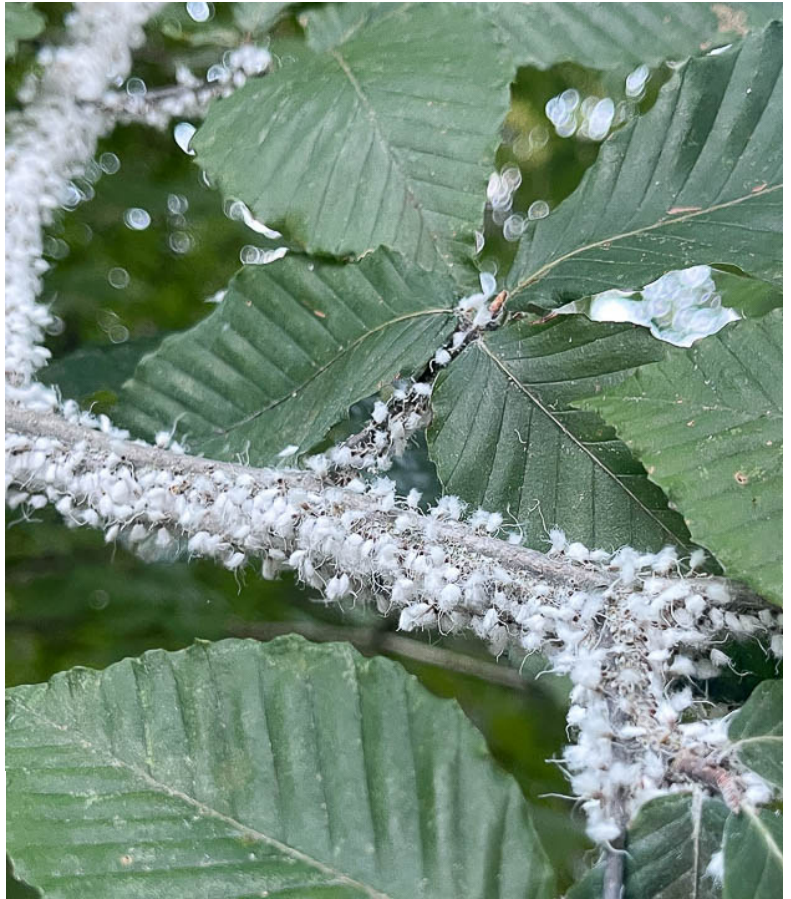
Saving Energy in the Horticulture World

By: Stanton Gill

With the passage of the Inflation Fighting and Energy Bill, signed into law in mid-August, alternatives is moving forward. The horticulture industry needs to look into way to reduce your cost of energy. Air conditioning is one of the big challenges of climate change, and one of the most difficult technological problems to fix. Transaera, cofounded by MIT energy professor Mircea Dincă, is attempting to significantly improve efficiency by tackling the humidity in air as a separate step. As the planet warms, more people want air conditioning. According to the International Energy Agency, a Paris-based intergovernmental organization, the demand for AC could triple by 2050, driven largely by consumers in China, India, and Indonesia. And cooling technologies like AC and electric fans account for about 20 percent of the energy consumption in buildings, the IEA notes. That produces more carbon dioxide emissions, which accelerate warming, which spurs more demand for cooling. It's quite the negative feedback loop. Transaera, and a handful of other startups, is working to design air conditioners that require dramatically less energy.

Beech Blight Aphids

Jim McWilliams, Maxalea, Inc., found these beech blight aphids on an American beech in Northern Baltimore County. They have the nickname of boogie-woogie aphids because they look like they are dancing about in unison when disturbed. They can completely cover stems on beech trees. Because of the copious amounts of honeydew produced by this aphid, the production of sooty mold can become severe. Control is usually not needed.



Beech blight aphids move in unison when disturbed to try and ward off predators.

Photos: Jim McWilliams, Maxalea, Inc.

Boxwood Leafminer

We received an inquiry about whether it is time to treat for boxwood leafminer larvae. We checked plants here at the research center in Ellicott City and the larvae are coming out of diapause and are starting to feed again. You can use systemic or translaminar insecticides at this time.

Interesting Eggs on Basil Foliage

By: Stanton Gill

Ria Malloy, UME-HGIC brought a damaged basil leaf to CMREC for ID. On the undersides of the foliage were eggs lined up next to each other. Matt Bertone of NC State University Diagnostic Lab identified these eggs as a leafhopper, likely one of the sharpshooter species.



These are eggs from a leafhopper, likely a sharpshooter.

Photo: Stanton Gill

Elm Leaf Beetle Makes a Comeback

By: Stanton Gill

With several of the nurseries growing hybrid elms, such as Princeton and Jefferson, we are seeing a rather alarming increase in elm leaf beetle damage. An arborist was reporting damage from elm leaf beetles in Washington, D.C and Maryland. Chinese elms appear to be fairly resistant with arborists reporting Chinese elms growing next to hybrid elms with damage on hybrid elms and none on the Chinese elms. The last time I saw a major problem of elm leaf beetles was on zelkova and it was 25 years ago.

I asked fellow entomologists on a listserv the following: Are others finding elm leaf beetle marking a comeback in their respective states? If so, have anyone tested any systemics for control as either spray or basal trunk spray or drench?

Jacqueline Buenrostro responded:

"Elm leaf beetle has been prevalent and defoliating elms in Colorado in recent years. I have seen damage primarily on Siberian elms along the front range of northern Colorado, from Boulder to Fort Collins (although this is undoubtedly happening elsewhere in the state). The beetle appeared to leave other elm varieties relatively untouched until the Siberian elms were entirely defoliated by the end of summer."

I received this comment for North Carolina:

"I have received a few pictures of totally defoliated hybrid elms from Augusta, GA. I was in the Research Triangle area of North Carolina two weeks ago and saw defoliated trees (native elms and planted hybrid elms) caused by the larger elm leaf beetle – both larvae and adults were present."

Blueberry Plant that Bears Fruit Twice a Year

By: Stanton Gill

One of the participants in the 3-day drone school, Ryan Overdeest, Overdeest Nursery in New Jersey, brought me a blueberry plant that was in flower and had a berry crop maturing in mid-August. It was the blueberry, 'Perpetua' (*Vaccinium* x 'Perpetua'), which you might also see sold as BrazzleBerry™, Bushel and Berry™ Perpetua® (the new name) or ORUS-61.

In 1963, a fall-fruiting blueberry, later named CVAC 45, was found in the wild in Monmouth, Maine and sent to the USDA-ARS National Clone Germplasm Repository in Corvallis, Oregon. Since it was intermediate in size between a highbush blueberry (*V. corymbosum*) and a lowbush blueberry (*V. angustifolia*), bore small fruits like lowbush blueberry, and since both grow wild in the same area, it has long been presumed to be a natural hybrid between the two species: what is known as a half-high blueberry. In culture, it reliably produced two crops each year, one in mid-summer, one from late summer well into fall, without needing any cold treatment for the second crop.

Hybridizer Chad E. Finn, a research geneticist and small fruit breeder with the Horticultural Research Unit in Corvallis, Oregon, harvested and grew open-pollinated seeds from CVAC 45 in 2000, resulting in a wide range of plants, many with the same second autumn-ripening crop. The best of these plants was released under the name 'Perpetua', a plant that combined two heavy crops with outstanding ornamental characteristics and excellent winter hardiness.

'Perpetua' is a moderately vigorous, upright, somewhat vase-shaped shrub about 2 ½ feet (75 cm) tall and 2 feet (60 cm) wide with shiny, dark green, disease-resistant leaves. It bears a first bloom of small white urn-shaped flowers in early spring followed by fruit in June or July, depending on local conditions. Shortly after fruiting, new flowers appear from new growth and it begins bearing fruit a second time starting

from August/September well into October, only stopping with hard frost. The foliage remains dark green until fairly late in the fall, finally turning purplish red. The name 'Perpetua' comes not only from the plant's nearly perpetual flowering and fruiting, but also honors Cape Perpetua along Oregon's Pacific Coast.

This might be an interesting plant for nursery and Garden Center Sales.

Basil Downy Mildew – Late Summertime Sadness

By: Sheena O'Donnell, UMe

So many summer snacks are best served fresh from the garden, and basil is no exception to this rule. To serve alongside fresh tomatoes, to grind into a pesto with other fresh herbs, or to muddle into a lemonade on a pool day, reasons abound to grow fresh basil in your home garden. Then mid-summer hits, and your plant starts to show some yellowing leaves at the base. You add some fertilizer because it looks like a nutrient issue, but closer inspection will reveal the gray/black fuzz on the lower leaf surfaces, and that's when your summer fun takes a downturn – it's downy mildew.

Downy mildew, *Peronospora belbahrii*, is a slow but sure death note for the basil plant. A type of water mold, downy mildew first shows as chlorosis in lower leaves and progresses to gray fuzzy sporulation before causing defoliation of the entire plant, withering of stems and then eventually death. Currently, *P. belbahrii* has only one mating type in the US, and does not typically overwinter in Maryland. It is spread by winds (airborne) and infected plant material (including seeds). Typically, the disease arrives yearly in Maryland from infected plants grown in southern states by mid-summer. Disease management can be achieved by thorough inspection and removal of infected plant material, and ensuring proper plant spacing for better airflow. However, these steps do not remove the disease pressure entirely. New infections continue to occur as more windblown spores arrive. Growers should strongly consider planting resistant cultivars for profitable harvests.



Basil plot at CMREC - From top (back) to bottom (front): Amazel basil, Emerald Towers, Aroma, Thunderstruck, Devotion, Passion, Obsession
Photo: Sheena O'Donnell, UME

New cultivars have been developed for resistance to this disease, and we were able to get our hands on some last year as well as this year. We have established disease trials at the Central Maryland and Research Education Center (CMREC), and MacBride and Gill Falcon Ridge Farm this summer. Resistant basil cultivars Passion, Obsession, Devotion, Thunderstruck, Emerald Towers, and Amazel were planted at CMREC. The susceptible cultivar Aroma was planted as our control at both locations. We did our first harvest last week at CMREC to gather some data on productivity and disease resistance. At CMREC so far, the only cultivar that has shown symptoms is Emerald Towers. Falcon Ridge planted Prospera, Aroma, Emerald Towers and Devotion. No basil cultivars have shown disease symptoms at the Falcon Ridge location. Prospera has been harvested times, and the other three cultivars which were planted 3 weeks later, will be harvested next week. Last year all cultivars, but Prospera showed disease symptoms by the end of the summer, with some cultivars producing no harvestable yield by the end of the trial. We will be collecting data on each of the cultivars again this year.

Beneficial of the Week

By: Paula Shrewsbury

Spiders are jumping for food.

When observing plants and the insects, mites, and spiders that are active on them I frequently find jumping spiders (family Salticidae) of all sizes and colors. These spiders' range in size from 3 to 12 mm, and vary in colors that camouflage against tree bark to bright metallic colors. The diversity and number of jumping spiders that are active at any given time is quite impressive and makes me appreciate that they provide biological control throughout the season.

Salticidae is the largest family of spiders with over 6,000 species of jumping spiders worldwide and more than 300 species found in the U.S. These spiders gain their name because not only do they crawl or run quickly but they often move by making short jumps from one location to another, jumping as far as 10 – 50 times their body length. Jumping spiders are recognized by their somewhat rectangular or box-like cephalothorax (the head and thorax areas that are fused together) which has 1 row of 4 very distinct dark eyes along the front facing edge of the cephalothorax with the center 2 eyes being quite large compared to the others, and 2 more pairs of eyes along the top facing edge of the cephalothorax (=8 eyes total).

Jumping spiders have some very interesting behaviors. Male jumping spiders differ from females in that they may have plumose hairs, colored or iridescent hairs, front leg fringes, structures on other legs, and other modifications used in “courting” females. In many species the male performs complex courtship displays or “dances” in which he moves his body up and down or in zig zag patterns and waves his front legs in a highly specific manner to impress a female. There are also specific sound effects (ex. drumming on the substrate with his legs or abdomen) that the male makes associated with this courtship behavior. If the female “likes” or



Close up of an Emerald jumping spider showing its diagnostic front row of eyes with two large eyes in the middle and a smaller eye on either side of the large. Also note the metallic green colors.

Photo: Jim Moore, Maryland Biodiversity Project



A jumping spider enjoying its newly captured caterpillar meal.

Photo: M. Raupp, UMD

accepts the male they will then mate. To see a fun and entertaining video of some of these interesting mating behaviors go to: https://youtu.be/HPh_Gi7PCqs. After mating, the female lays her eggs in shelters (under stones or bark) lined with silk or on the surface of plants. The female will often guard the eggs and the newly hatched spiderlings until they are old enough to forage for food on their own.



A magnolia green jumper (Salticidae) guarding her newly hatched spiderlings.

Photo: Bob Cammarata, Maryland Biodiversity Project

Jumping spiders are not web builders. They actively hunt for their prey by foraging on the leaves and branches of plants. They usually hunt during daylight and have very good eyesight. Jumping spiders sneak up to within a few body lengths of their prey, crouch, crawl slowly forward, and

then lift their front legs and pounce on their prey to capture it. Once captured the spider immobilizes its prey by injecting them with venom and release proteolytic enzymes into or onto the prey which liquefies the tissue allowing the spider to slurp up its food. To see a salticid spider capturing its caterpillar prey go to: https://youtu.be/py_V2lqWpb4 or another [preying on a mosquito](#). Most jumping spiders are considered to be generalist predators, meaning they will feed on a broad diet of different types of insects. Jumping spiders have been seen eating stink bugs, lace bugs, flies (including mosquitoes), caterpillars, beetles, moths, and other mobile insects. Some salticid species are also known to include nectar as a food resource. Spiders make up a significant part of the natural enemy assemblage in our ornamental and turfgrass systems helping to prevent plant feeding insects from reaching population levels that cause economic or aesthetic damage. Be sure to look for these jumping spiders in your landscapes and nurseries and appreciate the benefit they provide.

Weed of the Week: Small Carpetgrass

By: Kelly Nichols

Poison ivy (*Toxicodendron radicans*) is a perennial plant that is native to the United States and Canada. In wooded areas, its growth can be classified as a vine as it grows up trees. Mature vines will be thick and look very hairy; these “hairs” are actually adventitious roots. In full sun areas, poison ivy’s growth will be more like a shrub. As its name suggests, all parts of the plant contain an irritating oil called urushiol, which can cause a rash on the skin.

“Leaves of three, let them be!” is an easy way to remember not to touch poison ivy, as there are three leaves at the end of each petiole (the little stem that connects the leaves with the main stem of the plant). Individual leaves are oblong, often shiny, pointed at the end. Leaf margins vary and can be smooth, lobed, or toothed. Leaves turn a bright red or orange color in the fall, making them easy to spot. Small flowers which can be white, yellow, orange, or green, appear in summer. White, waxy fruits develop in late summer or fall. Poison ivy spreads by seeds and by rhizomes.

When working with poison ivy, cover any exposed skin, and wash that clothing in a separate load. If you suspect that your skin has touched poison ivy, wash your skin immediately or as soon as possible. Several

control tactics can be implemented. In the spring, scout for small plants and pull them out. If poison ivy is growing up trees, cut the stem at the base of the ground. After the stem is cut, a systemic herbicide such as glyphosate or triclopyr can be applied to the cut end that is still attached to the roots. Glyphosate and triclopyr can also be applied to the foliage; the best time to apply is in early to mid-summer during when the poison ivy is actively growing.



Figure 1. Poison ivy growing in an unmanaged area.
Photo: Kelly Nichols, UME Montgomery County



Figure 2. Poison ivy can be remembered by the adage, “Leaves of three, let them be!”.
Photo: Kelly Nichols, UME Montgomery County

Plant of the Week

By: Ginny Rosenkranz

Lobelia cardinalis or cardinal flower is a native herbaceous perennial that grows in USDA zones 3-9, from southeast Canada into the northern parts of Florida, and from the East Coast to the West coast, only avoiding the top northwestern states after Wisconsin. The cardinal flower thrives in full sun to partial shade and prefers rich, moist to wet soils. The plants can live in water up to 3 inches deep through the summers, and prefer a light covering of mulch to the roots during the winter months. In the wild, the plants grow in freshwater marshes, on the banks of ponds and streams. The plants grow in an upright fashion, starting as a rosette of lance-shaped bright green leaves with a lightly toothed margin. As the plant grows, the leaves attach alternately to the stems. The 2-inch long flowers begin their brilliant show in late August into September. The bright scarlet petals are united to create a deep tube with 3 long thin delicate lobes on the bottom lip and 2 long delicate lobes on the top. The flowers begin to bloom from the bottom of the flower spike and continue upwards slowly to extend the blooming season. Hummingbirds are the major pollinator for the cardinal flower, adding color and motion into the late summer and fall gardens. There are a few cultivars including ‘Pink Flame’, which blooms with bright pink flowers, ‘Pink



Flamingo' which has larger soft rose-pink flowers, and 'Queen Victoria', a hybrid cultivar that had dark burgundy foliage and dark blood red flowers. Cardinal flower can be planted in beds, native plant gardens, butterfly gardens, rain gardens, bog gardens, and cottage gardens. The flowers are magnets for hummingbirds but also attract butterflies and other pollinators. Deer and rabbits are usually not nibblers of *Lobelia cardinalis*, and no serious pests were listed.



Cardinal flower
Photos: Ginny Rosenkranz

Degree Days (as of August 24)

Aberdeen (KAPG)	2794
Annapolis Naval Academy (KNAK)	3081
Baltimore, MD (KBWI)	3157
College Park (KCGS)	2925
Dulles Airport (KIAD)	2978
Ft. Belvoir, VA (KDA)	2984
Frederick (KFDK)	2797
Gaithersburg (KGAI)	2832
Gambrils (F2488, near Bowie)	3004
Greater Cumberland Reg (KCBE)	2717
Martinsburg, WV (KMRB)	2648
Natl Arboretum/Reagan Natl (KDCA)	3404
Salisbury/Ocean City (KSBY)	3151
St. Mary's City (Patuxent NRB KNHK)	3440
Westminster (KDMW)	3259

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

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 **2648 DD** (Martinsburg, WV) to **3440 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.

- Japanese maple scale – egg hatch / crawler (2nd gen) (**2508 DD**)
- Fern scale – egg hatch / crawler (2nd gen) (**2813 DD**)
- White prunicola scale – egg hatch / crawler (3rd gen) (**3238 DD**)
- Banded ash clearwing borer – adult emergence (**3357 DD**)
- Tuliptree scale – egg hatch / crawler (**3519 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

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.

Registration Link: <https://montgomeryparks.org/about/divisions/arboriculture/urban-tree-summit/>

September 7, 2022

MNLGA Nursery Field Day

Location: Longwood Gardens

[Registration](#)

September 27, 2022

Cut Flower Tour

Location: Zekiah Ridge Farm, La Plata, MD, and second site TBD

Details coming next week

September 29, 2022

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

Thursday, September 29th, 2022

9:00 AM to 3:30 PM

Location: Wye Research and Education Center, 124 Wye Narrows Drive, Queenstown, MD 21658

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