

Commercial Horticulture

April 21, 2023

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IPMnet  
Integrated Pest  
Management for  
Commercial Horticulture  
[extension.umd.edu/ipm](http://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](mailto:sgill@umd.edu)

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Weed of the Week: Chuck Schuster (Retired Extension Educator) and Kelly Nichols (Extension Educator, Montgomery County)

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### Diagnostic IPM Session – May 10, 2023

By: Stanton Gill

The Maryland Arborist Association and the University of Maryland Extension are working together to offer a diagnostic evening session to be held at the Howard Community College, Columbia, Maryland from 5:00 p.m. until dark.

Karen Rane, Andrew Ristvey, and Stanton Gill will walk you through diagnosing plant disease, nutrient, water, and insect and mite problems on plant material. Steve Dubik will cover the ID of some of the plant material on the campus.

A catered dinner will be served for all attendees.

Go to <https://hccpestwalk23.eventbrite.com>  
to register for this pest walk.

## Virus Symptoms

By: Karen Rane, UMD

Have you seen “artistic” line patterns on leaves of herbaceous perennials, such as ajuga and bleeding heart lately? Although somewhat attractive in appearance, these patterns are diagnostic for a virus disease. Several plant viruses can cause line patterns and ringspots on foliage but in this case, the culprit is most likely Tobacco Rattle Virus (TRV). TRV is a common pathogen of perennials such as anemone, hosta, and peony, as well as ajuga and bleeding heart. This virus is most commonly spread through asexual propagation (divisions) of infected stock plants. The virus can also be spread by certain species of soil inhabiting plant parasitic nematodes. TRV has a wide host range, including numerous weed species, field crops, and vegetables as well as ornamentals. Symptoms can vary depending on host, but in herbaceous ornamentals, symptoms include chlorotic mottling, ring spots, and line patterns on foliage (Figures 1 and 2). At first glance, the line patterns may resemble damage from leaf miner insects, but the lines due to virus infection do not appear semi-transparent when the leaf is backlit, unlike leafminer damage. Virus infected plants may decline over time and produce fewer flowers. Symptom expression is most common when temperatures are moderate, and plants may seem to “recover” and symptoms diminish during hot summer weather. The only management option for infected plants is to remove them – as with most virus diseases, the plants are systemically infected so removal of symptomatic leaves does not cure the plant. As for ajuga, this virus infection is another reason to remove or avoid planting this often-invasive groundcover.



**Figure 1. Yellow line patterns typical of Tobacco Rattle Virus infection in ajuga.**  
Photo: Karen Rane, UMD



**Figure 2. Closeup of chlorotic ring spots on ajuga due to TRV infection.**  
Photo: Karen Rane, UMD

## Trust me, you don't want to be a tick magnet: backyard deer considerations

By: Jennifer M. Mullinax, Department of Environmental Science and Technology, University of Maryland

I hope I am writing this in just the tick of time with information from the A-SWEL (Applied, Spatial Wildlife Ecology Lab) at UMD. It is spring - soon to be summer, and the ticks are upon us. I have been getting a lot of questions about what homeowners and professionals should consider when thinking about landscaping, ticks, and tickicides. Questions like:

*“What can I do to reduce ticks in my backyard?”*

*“What can we do to design landscapes that naturally reduce ticks coming into contact with hikers or gardeners, etc?”*

Leaving all silly puns aside, A-SWEL has been studying some very interesting things in the world of ticks—mostly their hosts: deer, mice, squirrels, chipmunks, and other small creatures. For this first article, let's talk backyards, neighborhoods, and deer.

In our most recently completed study, we captured and collared 51 deer from five parks located in the metropolitan area of Howard County, MD. The highly suburban area included residential neighborhoods, schools, businesses, and small county parks. We found that deer in suburban environments often bed down and spend the night within 50 meters of residential properties, especially female deer. Generally, those deer tended to avoid residential areas during the day, but moved into residential areas nightly, especially in winter, often sleeping near the wooded edges of lawns of houses and apartment buildings.

Now, everyone knows that deer are in and around neighborhoods in Maryland, but we had no idea just how much they were living in the neighborhoods. On average, one female's core home range encompassed **71** different homes! So, a big takeaway from that study was that neighborhoods ARE the home of urban and suburban white-tailed deer. This is important because we used to think people mostly got tick exposure when they worked/hiked in the woods, but recent studies have shown they're getting significant exposure in their own backyards.

### **What does that mean?**

- Urban and suburban wildlife agencies monitoring and estimating urban and suburban deer populations may be missing a huge part of the population if they focus their monitoring efforts only on deer in wooded parks.
- Urban and suburban communities might consider the implications of an abundance of deer in residential areas. Those deer potentially increase the number of tick larvae hatching there in spring and summer around edges of yards.
- Along with clearing bushy edges of yards, reducing deer's use of neighborhoods by eliminating bait piles or other human food sources as well as using tickicide in areas where deer routinely bed down, could help reduce tick populations.

Next up, we will talk about how you can stay squeaky-clean of ticks with the smaller hosts: mice.

### **Eastern Tent Caterpillars**

Sightings and reports of eastern tent caterpillars seem to be down this spring. Marie Rojas, IPM Scout, found some eastern tent caterpillars on crabapples at a nursery in Gaithersburg. Marie noted that they are the first ones she has seen anywhere. Casey Bartoe, Bartlett Tree Experts, is seeing tent caterpillars in trees along the roadside on 32 and 97. (Casey also noted that this is also the time to be on the lookout for mimosa webworm on cherry trees in the landscape.)

**Control:** Mechanical control works well. Reach into the tent, tear it open, pull out the caterpillars, and toss them in a bag and dispose of them. If necessary, you can also spray foliage with Bt or Conserve which give good control with minimal impact on beneficials.



**Late instar eastern tent caterpillars are active in Gaithersburg this week.  
Photo: Marie Rojas, IPM Scout**

## Spotted Lanternfly Update

By: Kenton Sumpter, MDA

As of April 18th, the Dept. of Agriculture has confirmed the beginning of emergence of spotted lanternfly. The insects are still very small right now, and can be difficult to detect. They will be small (~ 3 mm in diameter), black with white dots, and spidery.

Over the course of the next three months they will molt several times, eventually arriving at the 4th instar. At this point they will develop red patterns on their bodies and be approximately a half inch in diameter.

In its nymphal stage, spotted lanternfly is much more susceptible to chemical controls such as horticultural oils, neem oils, and insecticidal soaps. Sticky bands applied to the base of infested trees can also be effective in destroying nymphs. Nymphs are poor climbers, and will repeatedly fall to the ground and have to climb back up into their host tree. Adhesive bands applied around the base of an infested tree can catch these climbers before they get high into the canopy. Be sure to check your sticky bands daily to see if any unintended bycatch has wound up stuck to the band. It is highly recommended to use a product such as Bug Barrier to reduce your bycatch.

Marylanders are encouraged to report sightings of spotted lanternfly nymphs to our survey at [mda.maryland.gov/spottedlanternfly](http://mda.maryland.gov/spottedlanternfly). Please reserve the email, [dontbug.md@maryland.gov](mailto:dontbug.md@maryland.gov), for complaints and questions. We receive too many reports through our survey to be able to reply to them.

Businesses need to be aware that the spotted lanternfly quarantine now covers 18 counties. Any business that transports regulated articles from or within the quarantine must acquire a permit and inspect their regulated articles prior to transport. Inspection records need to be maintained for two years. Examples of regulated articles can be found in the quarantine order document on our website. Be aware, vehicles owned and operated by a business are classified as "conveyances" in the order. Conveyances are considered regulated articles. The link to the permit training course can be found on our website at [mda.maryland.gov/spottedlanternfly](http://mda.maryland.gov/spottedlanternfly). Only



**At this stage they will quickly move from their host trees and begin looking for food sources. They tend to eat the widest variety of foods at this point and will readily feed on roses, garden plants (i.e., cucumber, tomato, beans, squash, etc.), ornamental trees, and forest trees. They can often be found sunning themselves on lawn furniture, eastern building facades, and decking.**

**Photo: Eric R. Day, Virginia Polytechnic Institute and State University, Bugwood.org**



**Spotted lanternfly nymphs are more susceptible to controls such as insecticidal soaps, horticultural oils, and neem oils. Photo: Dr. Alejandro Calixto, Cornell University, College of Agriculture and Life Sciences**

a single business representative needs to receive the training. They will be the designated point of contact should the state need to reach out. This person is then expected to train their coworkers on spotted lanternfly management. There is no cost associated with permitting. No recertification is needed. If the designated spotted lanternfly person leaves their position, then a new person should apply for a permit. Permits need to be displayed at every business location, and a copy needs to be placed in every vehicle a business owns and operates. Please, do not hesitate to contact the Dept. of Agriculture with any questions that you may have regarding the quarantine and permitting.

Thank you, and good hunting lanternfly this year!

**UME Note:** So far, we have received reports of egg hatch in Howard County MD (April 18, 2023) Baltimore City, MD (April 19, 2023) and Southern and Central NJ (April 17, 2023).

### **2023 Disease Update: Scab and Fire Blight Infections Forecasted for April 22–23**

By: Kari Peter, Penn State University Experiment Station, Biglersville, PA

Growers must closely monitor weather conditions this weekend, April 22–23, 2023. Many trees are in full bloom this week, and protection is critical at this time. Rain is in the forecast for Saturday, causing the leaf wetness to extend through early Sunday, most likely. Combined with the current warm temperatures this week, this will trigger a significant infection event for both apple scab and fire blight. Trees will need to be protected prior to the weekend to prevent disease.

### **Ambrosia Beetle Activity**

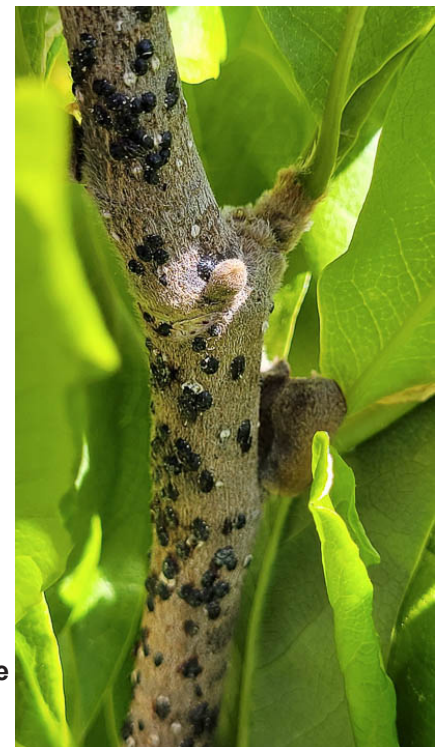
By: Stanton Gill

There were three *Xylosandrus germanus* ambrosia beetles in our trap here at the research center in Ellicott City on April 21. Marie Rojas, IPM Scout, noted that she did not see any beetle activity on trees and the trap still had low numbers at a site in Beallsville. The numbers are relatively low compared to other years. It might be tied to the dry weather. Let's see if it changes if we get rain soon.

### **Tuliptree Scale**

Marie Rojas, IPM Scouts, found black immatures of tuliptree scale on *Magnolia stellata* 'Royal Star' in Beallsville on April 19.

**Control:** Talus or Distance can be used on these second instar scale at this time. Treatments can also be applied to crawlers that are active later in the summer.



**Tuliptree scale are in the second instar stage at this time of year.**

**Photo: Marie Rojas, IPM Scout**

## Scale Insects on Arborvitae

Heather Zindash, The Soulful Gardener, found Maskell scale and minute cypress scale this week in Bethesda. Look for the first generation of Maskell scale crawlers in May. Look for crawlers of minute cypress scale in June.



There are three generations of Maskell scale in Maryland.  
Photo: Heather Zindash, The Soulful Gardener

## Crapemyrtle Bark Scale

We checked plants with crapemyrtle bark scale here at the research center in Ellicott City on April 21. We are not seeing crawlers yet. If you see crawlers, please let us know the date and location. Send an email to Stanton Gill at [sgill@umd.edu](mailto:sgill@umd.edu). We are working on determining the life cycle of this scale in Maryland.



**We would like to hear from you when you see crapemyrtle bark scale crawlers active this summer.**

## Peachtree Clearwing Borer Damage

Casey Bartoe, Bartlett Tree Experts, is reporting that cherry laurels that looked great last year quickly declined this spring in the Annapolis area. Casey found damage from peachtree clearwing borers. We will be monitoring for flight activity that occurs in June to determine the timing of protective sprays.

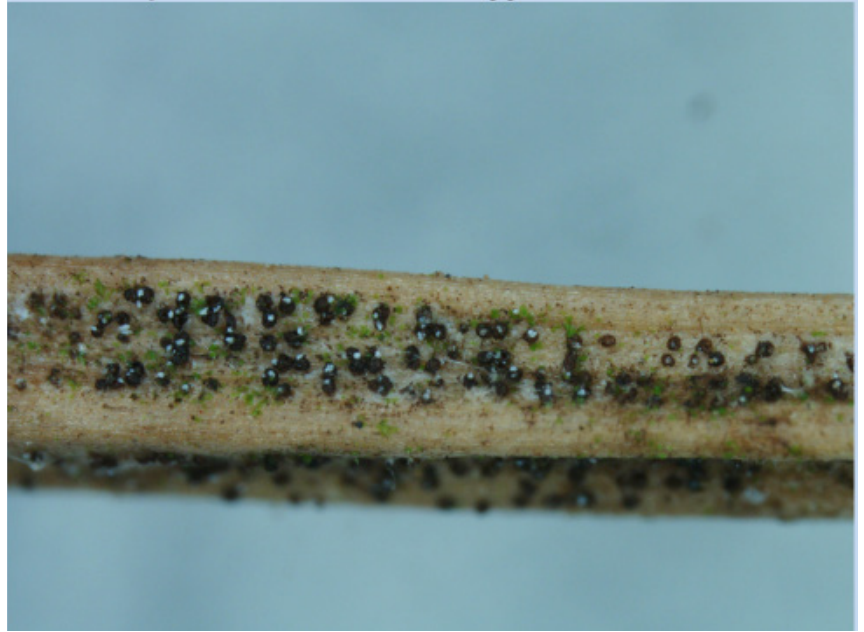
## Needle Diseases of Blue Spruce and Douglas Fir

D.L. Clement

Douglas fir and blue spruce are very common landscape evergreens in Maryland landscapes. However, they are very susceptible to needle diseases in the spring. Bud break is the most critical time for management of needle diseases. Douglas fir and blue spruce needle diseases start with spore release during rainy periods in the spring. Since you can't really tell when spore release has occurred you should assume that spores will be releasing about the time buds are breaking and take management action by following when bud break occurs.

To determine if your trees warrant disease management, look for signs of the fungal fruiting bodies on the needles. These fruiting bodies are producing the spores that will infect the new needles as they break bud. With a hand lens, scan the discolored needles. For Rhabdocline on Douglas fir, look for needles with elongated brown splotches and on the bottom side of the needle, look for areas where the outer portion of the needle's epidermis appears raised. For Swiss needle cast on Douglas fir and Rhizosphaeria needle cast on blue spruce examine the two-year-old needles for rows of dark fruiting bodies within the rows of needle stomates.

**Management:** Select labeled fungicides and apply at bud break to one-inch green, followed by two more applications that will extend into mid-May.



Rhizosphaeria on blue spruce; Swiss needle cast (*Phaeocryptopus*) looks similar on Douglas fir.

Photo: David L. Clement, Maryland Extension



Symptoms of Rhabdocline on Douglas fir

Photo: John W. Schwandt, US Forest Service, Bugwood.org

## Giant Willow Aphids

Austin Nelligan, Montgomery Parks, reported giant willow aphids active on willow in Montgomery County. These aphids overwinter as eggs on twigs. They hatch in spring and are usually most abundant later in the summer. They can produce a lot of honeydew, but are not a problem for the overall health of a tree. Control is usually not necessary. Predators and parasitoids keep this aphid under control.



**Giant willow aphids**  
Photo: Austin Nelligan, Montgomery Parks

## Euonymus Leaf-notcher Caterpillar

Adria C. Bordas, Virginia Cooperative Extension, received an email this week about activity of the euonymus leaf-notcher caterpillar around the Springfield Area of Fairfax County, VA. This caterpillar feeds early in the season and has one generation.

**Control:** Euonymus can produce new growth rapidly, so control is not always necessary. Bt and spinosad are two control options if needed. At this point in the season, the damage has been done and plants will produce new growth to cover the damage.



Euonymus leaf-notcher caterpillars will be finishing up their feeding for the season soon.

Photo: Eric R. Day, Virginia Polytechnic Institute and State University, Bugwood.org



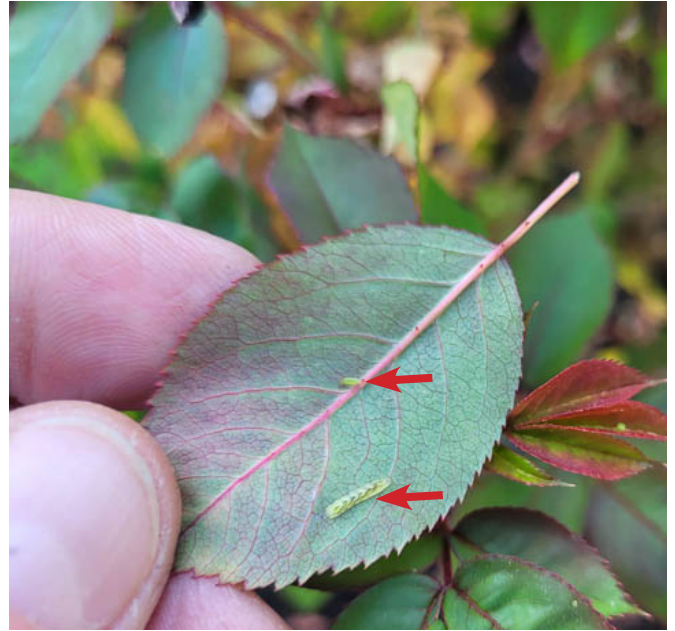
## Insects on Roses

Luke Gustafson, The Davey Tree Expert Company, found aphids and sawflies on roses on April 20 in Catonsville. There is a syrphid fly larva on the rose with the aphid in one of his photos. Monitor plants with aphid populations closely to see if predators and parasitoids are present to keep them under control. Several rose slug sawfly species continually cause problems on roses throughout the season.



Roseslug sawflies feed on rose foliage throughout the season.

Photo: Luke Gustafson, The Davey Tree Expert Company



The top arrow points to the aphid and the lower arrow points to the syrphid fly larva - a predator.

Photo: Luke Gustafson, The Davey Tree Expert Company

## Problem on Holly

Marty Adams, Bartlett Tree Experts, sent in a photo of this holly that was planted in the early 1990's and abruptly started declining recently. Marty noted that the "the nylon twine was never removed at planting and finally caught up to it".



Nylon twine that was never removed years ago is finally having an impact on this holly tree.

Photo: Marty Adams, Bartlett Tree Experts

## Reports of Predators

Marie Rojas, IPM Scout, reports that assassin bugs were starting to hatch out in Beallsville this week. Nicolas Tardif, Ruppert Landscape, found many lady beetles on a tree in Georgetown, Washington, D.C. on April 17. Both are generalist predators.



Lady bird beetle larva.  
Photo: Nicolas Tardif, Ruppert Landscapes



Assassin bugs just hatching out.  
Photo: Marie Rojas, IPM Scout

## Beneficial of the Week

By: Paula Shrewsbury

### Mummies aren't just popular at Halloween.

Reports of aphid activity on various plants are starting to come in. The up side of aphid infestations is that in many situations chemical controls are not needed due to suite of natural enemies that ultimately reduce, and often eliminate, aphid populations. The aphid natural enemy complex includes various species of lady beetles, predatory flies such as syrphid (flower) flies and *Aphidoletes* midges, lace wing predators, and parasitic wasps. Today I would like to discuss the parasitic wasps (Family: Braconidae) since I often observe aphid populations, usually at pretty low levels, that have been attacked by these parasitoids. The tell-tale sign of tiny wasps killing aphids is the presence of **aphid mummies**. These wasps locate plants infested with aphids, the female wasp will then “sting” (lay her egg in) an aphid. [Click here to watch as a wasp aggressively attack ill-fated aphids](#) (video by M.J. Raupp, UMD). Aphids do their

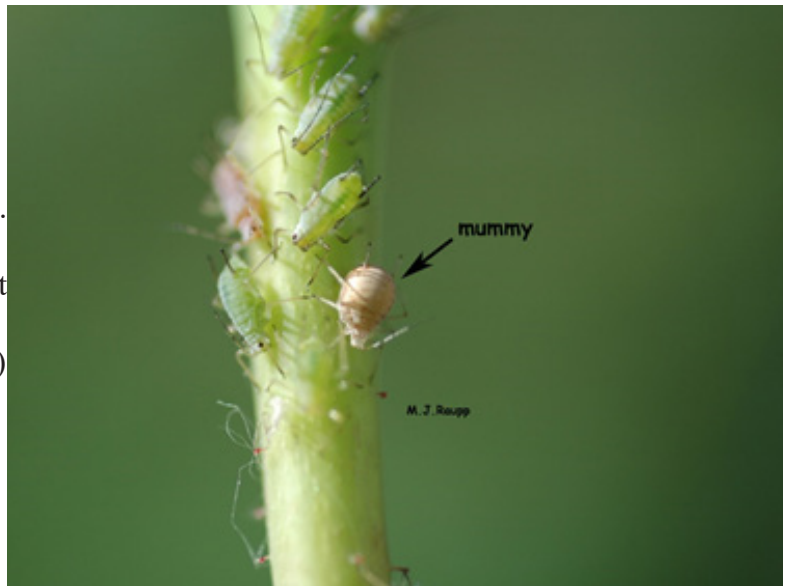


An *Aphidius* female wasp stinging (inserting an egg) into a live aphid.

Photo: Peter Bryant, from BugGuide.net

best to kick and push the female wasp away but the wasps are aggressive and often win the battle. The wasp's abdomen is articulated and highly mobile allowing her abdomen to curl beneath her body providing a frontal assault on the aphid. At the tip of her abdomen is an ovipositor and as she “stings” the aphid, her egg is inserted

into the aphid's body. The egg hatches and the wasp larva feed on the insides of the aphid. During this process the aphid's body becomes swollen or bloated looking, and the exoskeleton turns from its natural color to tan and has the look of a papery shell – hence the name aphid mummy (see images). Not surprisingly this results in the death of the aphid. As the wasp larva completes its development it pupates within the aphid. When the adult is formed it chews a discrete circular hole (see image) in the exoskeleton of the aphid and emerges from the mummy. At this point the female wasps can move on to parasitize other aphids. Each female wasp can kill up to 400 aphids in its lifetime. In addition to these tan aphid mummies parasitized by *Aphidius* wasps, there is another genus of parasitic wasp, *Aphelinus*, which similarly attacks and ultimately kills aphids. However, the bloated bodies of *Aphelinus* parasitized aphids turn to shiny black mummies rather than tan. As you are out scouting your plants and watching the lady beetles and flower flies devouring your aphids, be sure to look for those aphid mummies! Aphid parasitoids can have a tremendous impact in reducing aphid populations and are a major player in the natural enemy complex attacking aphids on herbaceous and woody ornamental plants. When aphids are on your plants, remember you usually don't have to do anything but wait and let the natural enemies do their thing.



**Tan aphid mummy image – Rose aphid mummy with a parasitic wasp in the genera *Aphidius* developing within it. (image by M.J. Raupp, UMD)**



**Black aphid mummy image – Oleander aphid (orange color) colony showing black aphid mummies which were parasitized by a wasp in the genera *Aphelinus*. Photo: M.J. Raupp, UMD**



**Tan aphid mummy with exit hole image – Rose aphid mummy showing the circular hole formed when the adult parasitic wasp emerges. Photo: M.J. Raupp, UMD**

## Weed of the Week

By: Kelly Nichols

### Crabgrass

For the last two weeks, I've been checking my pre-emergence herbicide plots near College Park for crabgrass emergence. On Tuesday, I finally noticed the little seedlings coming up. The first leaf to appear will be wide and short in length. As the seedlings grow, the membranous ligule and hairs on the leaves and stems will become more evident. Turf sites that have not received the first application of a pre-emergent for crabgrass will need

to consider switching to a product that has at least some capacity to provide early post-emergent abilities. Cooler weather is also forecasted for next week, which may slow down weed emergence. If a pre-emergent has not been applied yet, doing so now may still catch the next flush of crabgrass emergence. Hopefully we will also get some rain this weekend to help water in any PREs!

Products containing dithiopyr (Dimension) proflamifen (Barricade), and pendimethalin (Pre-M) prevent shoot and root development. All of these products can be used on established turf, but not sites that is will be seeded with new seed. Dithiopyr is an early post-emergent product that provides control of crabgrass and other grasses (except Japanese stiltgrass). Consider utilizing dithiopyr (not at full season rate) if no other applications have occurred this year. A follow-up in a second application can either be another application of dithiopyr or proflamifen. Siduron (Tupersan) is the only product that can be used in a turf setting when overseeding after application is considered. Post-emergent products for crabgrass control into late May and June include quinclorac (Drive), mesotrione (Tenacity), and combinations of quinclorac plus carfentrazone (SquareOne) or sulfentrazone (Solitaire).

Control of crabgrass is not only achieved through herbicide applications; good soil fertility, proper mowing height, and proper pH are other components in a crabgrass management plan that should not be overlooked. Build a strong turf that is dense. This prevents sunlight from reaching the soil to allow germination of crabgrass.

### Corn Gluten Trial

The pre-emergence herbicide trial I mentioned earlier is focused on the use of corn gluten for crabgrass control. Treatments include an untreated check, nitrogen only, corn gluten at two rates (3 and 5 lbs/1000 sq ft) and dithiopyr. The corn gluten product we are using is 10% total nitrogen. Plots are located at the Paint Branch Turfgrass Facility near College Park, MD. This is the first part of our organic turf herbicide trials, with a POST trial to also be put out this summer. Stay tuned for the results! I would love to hear your feedback on organic products, rates, and application timings that you have used. Please feel free to email me at [kellyn@umd.edu](mailto:kellyn@umd.edu).

**Crabgrass is getting going in D.C. this week, too.**  
**Photo: Nicolas Tardif, Ruppert Landscape**



**Crabgrass seedlings are emerging. Photo taken on April 18 near College Park, MD.  
Photo: Kelly Nichols, UME**



## Plant of the Week

By: Ginny Rosenkranz

*Phlox divaricata* 'Blue Moon', also known as the woodland phlox or wild sweet William, thrives in full to part shade and needs moist, organically rich, well-drained soils. The lance shaped medium to dark green glossy foliage emerges in early spring, growing 12 -15 inches tall and wide and stays green all summer long into the autumn. By late April, the bright blue 5-petal fragrant flowers begin to bloom in open clusters or panicles and dance above the foliage. These lovely native plants are cold hardy from USDA zones 3-8, and spread into a carpet by slowly creeping rhizomes. Woodland phlox also spreads by sterile stems that bend to the ground, forming roots at each node. The stems of the Woodland phlox are green to purple-green, with sticky glandular hairs. As a native plant, it provides nectar for butterflies, moths, and humming birds. Swallowtail butterflies and hummingbird moths are very attracted to this phlox. The plants are tolerant of deer, dry soil after establishment and occasional droughts. Good air circulation helps to prevent powdery mildew, and plants can be trimmed back after blooming to encourage new growth and flowers. Plants should be located near pathways or along woodland borders to be able to enjoy the fragrant flowers and the winged pollinators. They can also be planted with early blooming spring blooming daffodils, tulips or hyacinth so the fading foliage of the bulbs can be overlooked. Some cultivars include 'Clouds of Perfume' with very fragrant blue flowers, 'Chattahoochee' with lavender-blue flowers and a dark lavender center, 'May Breeze' with pale blue flowers, and 'Montrose Tricolor' with white and green variegated foliage and lavender blue flowers. Pests include spider mites in hot dry weather and powdery mildew in damp weather.



*Phlox divaricata* (woodland phlox) 'Blue Moon'.  
Photo: Ginny Rosenkranz, UME

## Degree Days (as of April 19)

Abingdon (C1620)	225
Annapolis Naval Academy (KNAK)	280
Baltimore, MD (KBWI)	331
College Park (KCGS)	308
Dulles Airport (KIAD)	317
Ft. Belvoir, VA (KDA)	292
Frederick (KFDK)	258
Gaithersburg (KGAI)	277
Gambrils (F2488, near Bowie)	304
Greater Cumberland Reg (KCBE)	208
Perry Hall (C0608)	220
Martinsburg, WV (KMRB)	182
Natl Arboretum/Reagan Natl (KDCA)	397
Salisbury/Ocean City (KSBY)	320
St. Mary's City (Patuxent NRB KNHK)	423
Westminster (KDMW)	308

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 **182 DD** (Martinsburg, WV) to **423 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.

Spruce spider mite – egg hatch (**179 DD**)  
Boxwood psyllid – egg hatch (**184 DD**)  
Tea scale – egg hatch / crawler (1<sup>st</sup> gen) (**195 DD**)  
Viburnum leaf beetle – first egg hatch (**210 DD**)  
Azalea lace bug – egg hatch (1<sup>st</sup> gen) (**214 DD**)  
Birch leafminer – adult emergence (**215 DD**)  
Elm leafminer – adult emergence (**219 DD**)  
Roseslug sawfly – egg hatch / early instar (**230 DD**)  
Honeylocust plant bug – egg hatch (**230 DD**)  
Elongate hemlock scale – egg hatch / crawler (1<sup>st</sup> gen) (**232 DD**)  
Hemlock woolly adelgid – egg hatch (1<sup>st</sup> gen) (**235 DD**)  
Boxwood leafminer – adult emergence (**249 DD**)  
Hawthorn lace bug – first adult activity (**265 DD**)  
Spotted lanternfly – egg hatch (**270 DD**)  
Bristly roseslug sawfly – larva, early instar (**284 DD**)  
Imported willow leaf beetle – adult emergence (**290 DD**)  
Hawthorn leafminer – adult emergence (**292 DD**)  
Andromeda lace bug – egg hatch (**305 DD**)  
Pine needle scale – egg hatch / crawler (**307 DD**)  
Cooley spruce gall adelgid – egg hatch (**308 DD**)  
Eastern spruce gall adelgid – egg hatch (**308 DD**)  
Spirea aphid – adult/nymph (**326 DD**)  
Lilac borer – adult emergence (**350 DD**)  
Spongy moth (formerly gypsy moth) – egg hatch (**373 DD**)  
Holly leafminer – adult emergence (**375 DD**)  
Hemlock woolly adelgid – egg hatch 2<sup>nd</sup> gen (**411 DD**)  
Basswood lace bug – 1<sup>st</sup> adult activity (**415 DD**)  
Emerald ash borer – adult emergence (**421 DD**)  
Locust leafminer – adult emergence (**429 DD**)  
Honeylocust plant bug – egg hatch, early instar (**433 DD**)  
Fourlined plant bug – egg hatch, early instar (**435 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.**

**May 10, 2023**

[MAA Arborist Walk](#)

Contact: [Danielle Bauer Farace](#)

**June 16, 2023**

[Montgomery County Procrastinator's Conference](#)

Location: Montgomery County Extension Office

**June 20, 2023**

Cut Flower Program

Location: Castlebridge Farm, Ellicott City, MD

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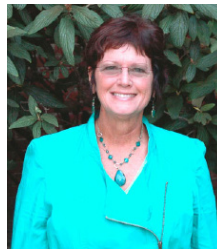
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