

Commercial Horticulture

April 14, 2023

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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), David Clement (Extension Specialist) and Fereshteh Shahoveisi (Turf Pathologist)

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

Cultural Information: Ginny Rosenkranz (Extension Educator, Wicomico/Worcester/Somerset Counties)

Fertility Management: Andrew Ristvey (Extension Specialist, Wye Research & Education Center)

Design, Layout and Editing: Suzanne Klick (Technician, CMREC)

We Need Rain

By: Stanton Gill

We were setting up field trials for scale insects this week. While visiting different nurseries, I was seeing very dry ground. We had a thick coating of dust covering our vehicles when driving the nursery rows. We are in a mini drought condition in April. Hopefully, the rains predicted for this Saturday and Monday come about. We really need soaking rains to replenish the soil moisture levels. Meanwhile, for those landscapers transplanting trees and shrubs, be sure to provide irrigation until this dry condition is past.

Ambrosia Beetle Activity

By: Stanton Gill

We checked our traps at CMREC on Friday and we have two *Xylosandrus crassiusculus* and five *X. germanus*. Ginny Rosenkranz sent in samples from her trap in Salisbury. There were three *X. germanus* beetles and one camphor beetle. Marie Rojas, IPM Scout, is reporting that so far, there is no ambrosia beetle activity on bolts at a site in Laytonsville.

Cherry Laurel and Clearwing Moth Borers

By: Stanton Gill

Bernie Mihm, Fine Earth Landscaping Company, sent in these great pictures of declining cherry laurel. The larvae were extracted from the cambial tissue this week. This is the later instar larval stage of peachtree borer, *Synanthedon exitiosa* (Say). Cherry laurel plantings are highly susceptible to this clearwing moth borer's damage.

The adult female peachtree borer lays between 400 and 900 eggs on the trunk at the soil-line or on weeds and surrounding leaf litter around the base of the trunk. Peachtree borers have an extremely high rate of fertility with about a 97% to 100% peachtree borer egg hatch. The hatched larva bore into the trunk, large roots, or stems. The larva only feed on live cambium and their feeding creates tunnels in the cambium. According to work done in New York, there are seven instar stages in the development of the peachtree borer.



**Cherry laurel with dieback due to peachtree borer feeding
Photo: Bernie Mihm, Fine Earth Landscaping**

We will be placing out baited pheromone traps at CMREC and will let you know when flight activity of the adults starts, which is usually in Mid to late June.

Control is applications of permethrin or bifenthrin to the trunk and base of the plant. Mainspring has a label for clearwing moth borer, but we have not trialed this material for peachtree borer.



**Damage at base of cherry laurel from peachtree borer larvae feeding and the extracted larva.
Photos: Bernie Mihm, Fine Earth Landscaping**

Locations Needed with High Numbers of Spotted Lanternfly Egg (SLF) Masses for Research
(email Paula Shrewsbury at pshrewsbury@umd.edu).

I am conducting research to examine the effect of treating SLF egg masses on trees with mycoinsecticides (fungus that kill insects) to reduce early nymphal SLF. These could be urban sites or wooded edges but they need to have several trees with high numbers of egg masses that are in accessible (i.e. not too high up the tree), and we need to be able to get on the property to treat with commercially available mycoinsecticides. We are trying to find OMRI listed, reduced risk alternatives for SLF suppression. *Email me if you think you might have sites that could work (pshrewsbury@umd.edu).*

THANKS!



Boxwood Leafminer

Nicolas Tardif, Ruppert Landscape, reported that boxwood leafminer adults were active in D.C on April 13. He noted that the flies were swarming around the shrubs. Heather Zindash, The Soulful Gardener, also found boxwood leafminer adults flying in Washington DC on April 11. Both Nicolas and Heather found quite a few adult leafminers caught in spider webs. Here at the research center in Ellicott City, there are no adults. Larvae and pupae can be found within the leaves. Avid is a translaminar material that can be used when this year's larvae are active next month.



White pupal cases persist on the leaf after boxwood adult emergence.
Photo: Heather Zindash, The Soulful Gardener



Spiders are active on boxwood shrubs that have a boxwood leafminer infestation.
Photo: Nicolas Tardif, Ruppert Landscape

Calico Scale

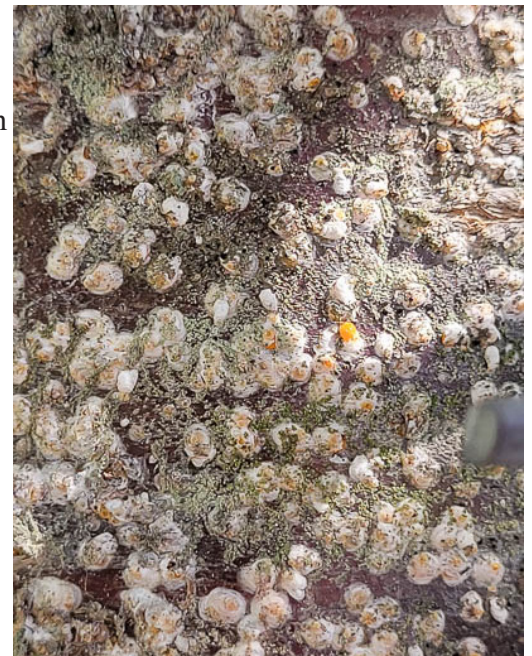
Marie Rojas, IPM Scout, found ants feeding on honeydew of a soft scale on the trunk of *Carpinus caroliniana*. Calico scale gives off high amounts of honeydew just before egg hatch which is around 765 degree days. Wait for the controls to apply Talus or Distance.



**Ants protect calico scale when the scale are producing honeydew.
Photo: Marie Rojas, IPM Scout**

White Prunicola Scale and Japanese Maple Scale

Other scale insects that Marie Rojas, IPM Scout, is finding are white prunicola scale on a variety of *Prunus* species and a lot of Japanese maple scale. White prunicola scale produces first generation crawlers in this area at around 513 degree days. Japanese scale crawlers are active later at about 819 degree days (about mid June).



**White prunicola scale is coating the trunk of this *Prunus* sp.
Photo: Marie Rojas, IPM Scout**

Aphids

Nicolas Tardif, Ruppert Landscape, found aphids on roses in D.C. this week. Look for aphids on new foliage and trees as shrubs leaf out this month. Keep an eye out for predator activity and whether aphid populations increase. Often, control is not necessary early in the season.



**With the recent warm weather, look for aphids to be active on plants in the landscape.
Photo: Nicolas Tardif, Ruppert Landscape**

IPM Involves Plant Resistance

By: Stanton Gill

Florida has been a leader in citrus production for years and has been called the ‘Citrus State’. We have been losing citrus for the last 18 years and the Florida Department of Agriculture was looking for substitute crops such as blueberry and figs. Many people do not seem to be aware that the orange crop reached its lowest level since world war II. The problem is a disease called citrus greening spread by the glassy eyed leafhopper. The causative agents are motile bacteria, *Liberibacter* spp. The disease was first described in 1929 and first reported in China in 1943. The African variation was first reported in 1947 in South Africa, where it is still widespread. Eventually, it affected the United States, reaching Florida in 2005. Within three years, it had spread to the majority of citrus farms in Florida, then showed up in Texas and California.

USDA announced in mid-March of 2023 that they discovered an orange cultivar called ‘Donaldson’ at the USDA Whitmore Farm in Florida that despite being infected with the citrus greening disease, appears to be healthy. ‘Donaldson’ citrus has good size, quality, and hardiness and is providing what is being described as “a beacon of light”. As part of an Integrated Pest management approach to this disease problem, the USDA is working with the Florida Department of Agriculture and Consumer Services Division to take budwood from the ‘Donaldson’ citrus tree and start making it available to citrus nurseries to get this plant into the hands of citrus growers. It will take 4 -5 years for these budded trees to come into production.

This demonstrate an integral part of IPM – use of resistant plant material.

Woolly Elm Aphids

Marie Rojas, IPM Scout, found woolly elm aphids on *Ulmus americana* in Laytonsville this week. Look for these aphids that produce a waxy secretion that can be a deterrent to predators. These woolly elm aphids are found on the undersides of leaves of distorted tip growth. Natural predators like lacewings, lady beetles, hover flies, and parasitic wasps feed on these aphids. If necessary to reduce large infestations, insecticidal oil or soap sprays in the spring can be used.



Look within the curled, distorted new leaves of elm for woolly elm aphids.
Photos: Marie Rojas, IPM Scout

Insect Growth Regulator for Scale Insects

By: Stanton Gill

During our 4-day IPM scout training, one of the attendees from Pennsylvania mentioned they were using a new insect growth regulator for scale insects. The material is called Proxite. This is a brand name for pyriproxyfen, which we have been recommending for the last 16 years for crawler stages of armored and soft scale. The brand name we have used is Distance and Proxite is the same chemical compound.

I wanted to see if entomologists in other states were consistently finding this material is working well in their trials. Here are some of the answers I received:

From Carlos Quessada, Assistant professor and Extension Specialist, WSU Extension: “Cliff Sadof and I observed that pyriproxyfen kills calico scale (soft scale), striped pine scale (soft scale), pine needle scale (armored scale) and oleander scales (armored scale). We also reported its effect on natural enemies. I added links below for more information:”

<https://journals.ashs.org/horttech/view/journals/horttech/28/3/article-p267.xml>

<https://www.sciencedirect.com/science/article/abs/pii/S1049964419300271>

Dan Gilrein from Cornell University Extension comments:

“I have recommended it for white prunicola scale on peach and on privet. If timed well, for crawlers, it can work extremely well. I don’t have actual data but have seen/heard enough cases to be very convinced. We also checked performance at a couple of orchards and confirmed nymphs were dead following treatment (no controls in either case but it was pretty obvious).”

Carlos Bogran: “All, Just in case you are not aware a few years ago OHP launched a new formulation of Pyriproxyfen. It contains the same concentration as Distance but without any petroleum distillates which reduces the intense smell, especially indoors/greenhouse. We have collaborated with several on this listserv to evaluate the efficacy and crop safety of Fulcrum with great results. I recommend it for the management of whitefly (eggs and nymphs), hard scales, and some soft scales (nymphs and female fertility), and fungus gnats and thrips pupae in the soil. It is not as good on aphids and some soft scales, depending on the species. I suggest looking into Arthropod Management Tests for published reports.”

Eastern Tent Caterpillars

Shawn Walker, found eastern tent caterpillars and their tents in Martinsburg, WV this week. John Hochmuth, Jr. is also reporting eastern tent caterpillar activity. Numbers are down in central Maryland. Is anyone see egg hatch in Maryland? How are the population numbers? Let us know at sgill@umd.edu.



**Eastern tent caterpillars have produced tents at a site in Martinsburg, WV.
Photo: Shawn Walker**

Spiny Witchhazel Gall Aphids

Marie Rojas, IPM Scout, found spiny witch-hazel gall aphids on newly-expanded birch leaves in Frederick County on April 11. These aphids cause rippled and distorted leaves on birch. Often, predators such as lady beetles are found feeding on these aphids. The alternate host is witchhazel where spindle galls are produced on the foliage.



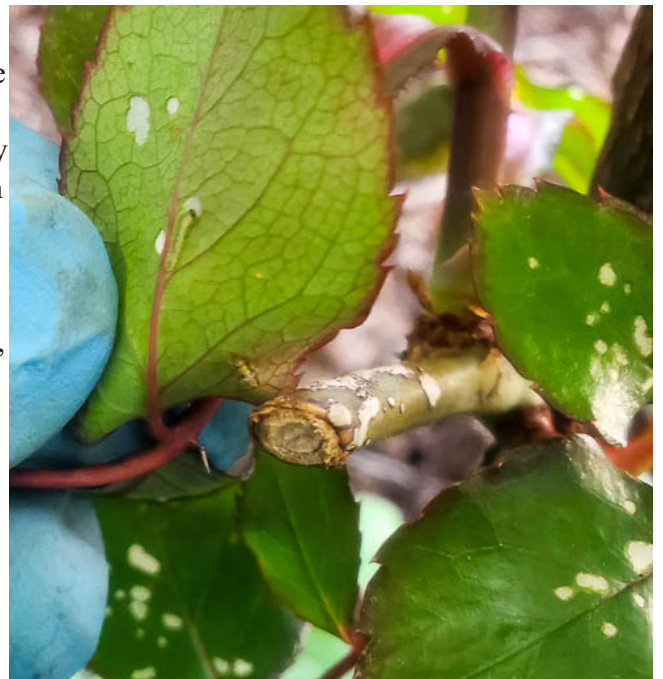
When you see rippled foliage on birch foliage, look on the undersides for spiny witchhazel gall aphids.

Photos: Marie Rojas, IPM Scout

Rose Sawfly

Nicolas Tardif, Ruppert Landscape, found a rose sawfly larva feeding on rose leaves in D.C. this week. He noted that it is the first one he has seen this season. Roseslug sawfly is a species with one generation early in the season. Bristly roseslug sawfly and curled roseslug sawfly are the two species in this area with multiple generations per season. They can be found in high numbers and cause extensive damage.

If control is warranted, horticultural oil, Spinosad, Mainspring, and Acelepyrn all work very well on this pest.



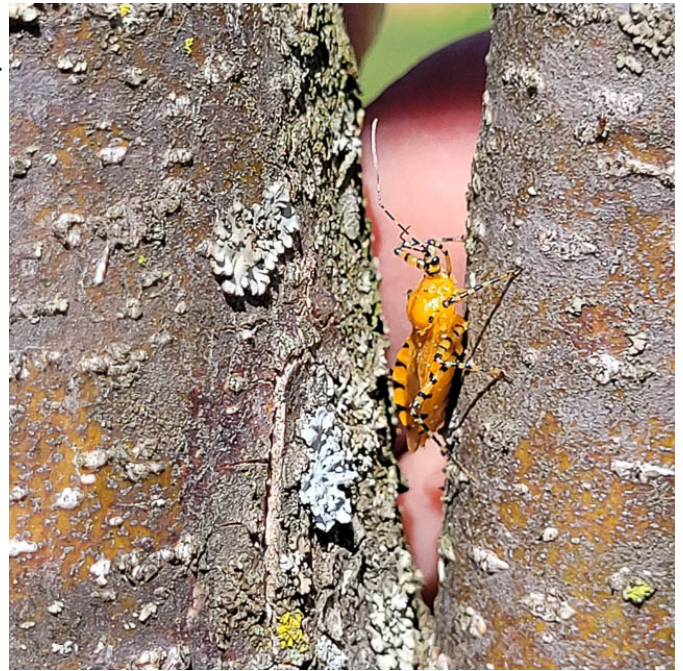
With roses leafing out at this time of year, several species of roseslug sawflies are already active.
Photo: Nicolas Tardif, Ruppert Landscape

Orange Assassin Bug

Marie Rojas, IPM Scout, found this brightly colored predator, the orange assassin bug, in Laytonsville this week. It is a general predator. They overwinter as adults.

Paula Shrewsbury wrote about this predator in the [October 29, 2021 IPM Report](#).

**The orange assassin bug is one of many predators active in landscapes and nurseries.
Photos: Marie Rojas, IPM Scout**



Weed of the Week

By: Chuck Schuster

Very dry conditions prevail over much of Maryland, with total rainfall being 3 to 5+ inches in deficit. This lack of moisture may have an effect on pre-emergent herbicides applied this spring. Turf and weeds are growing, but many lack the normal growth rates seen for this time of year. Soil temperatures lack a consistent increase and many rural areas have not seen the needed temperatures to allow crabgrass germination. Other weeds have taken hold this spring in spite of the challenges with the weather.

Garlic Mustard is actively growing and getting tall currently with the warmer temperatures we recorded last week and currently. This weed is very aggressive and will take over any open spots in the landscape. Garlic Mustard, *Alliaria petiolata*, an invasive weed found throughout much of the east coast of the United States. This weed is a cool season biennial that produces a heart shaped coarsely toothed leaf (photo 1) which will appear on a stalked stem that will grow to 3.5 feet tall (photo 4). The leaves will give off a garlic odor when crushed. During the winter the plant will have a green rosette that will remain very close to the ground, yet will be growing when temperatures are above freezing. Flowers will be produced with four petals that form a cross (photo 2).

This weed will produce thousands of seeds per plant that can be dispersed several feet from the plant. This is an invasive weed that likes shaded understory conditions, slightly acidic soils, and soils that are moist. This is a self-pollinating plant in many cases, and will shade out other plants quickly. Removal by pulling will only be successful the complete root system is pulled (photo 3). As a cool season herb, garlic mustard will grow when temperatures exceed freezing. An opportunity to gain some control of this weed can be when selective treatment of garlic mustard is done while other plants are dormant, other plants have not yet appeared (spring) or have died for the year (late fall).

Control of Garlic Mustard in a landscape can be obtained using non-selective post emergent products including glyphosate, Prizefighter, and Burnout, with the latter two products taking more than 1 application. Glyphosate will provide control even during the winter months when temperatures are at 32 degrees F or higher. Glyphosate is a non-selective herbicide meaning that it will kill or damage most plants it comes into contact with (including

woody plants). Use extreme caution using glyphosate around woody plants, as it will be absorbed through the bark and does cause bark splitting and loss of many desirable plants. While Garlic Mustard will not appear on the label if the site is labeled then Maryland applicators can use glyphosate. In areas that have restrictions on the use of glyphosate consider Prizefighter, Burnout or other non-selective herbicides. A somewhat selective product, Bentazon (Basagran) may be an acceptable substitute, though less effective on garlic mustard, but with reduced risk to some non-targets particularly annual and perennial grasses. It can be applied in landscape areas, but does have some warnings when used near certain plants including Sycamore and rhododendrons. Apply at 5 teaspoons per 1-2 gallons of water. Use methylated seed oil (MSO) or crop oil concentrate (COC) with Basagran T/O. This weed has seed that will remain viable in the soil for up to five years, so control is a long-term commitment. This weed can be found in many settings, so everyone must be aware of it. Early detection and control is important with this weed.



Photo 1



Photo 2



Photo 3



Photo 4

Photos: Chuck Schuster, UME-Retired

Plant of the Week

By: Ginny Rosenkranz

Viburnum carlesii is also known as the Koreanspice viburnum, growing 4-5 feet tall, 4-8 feet wide with dense upright and spreading branches. The dark green leaves are held opposite each other on the light brown stems, and grow 1-4 inches long and $\frac{3}{4}$ to $2\frac{1}{2}$ inches wide with irregularly toothed margins. The flower buds start dark pink to red but open to pure white very fragrant 5-petal star-shaped flowers that are held in a 2-3-inch, semicircular bouquet or cymes, which is flat-topped with the central flowers opening first. The flowers are in full bloom when the foliage emerges, so the dark green leaves showcase the pink and white display. Plants

prefer to grow in USDA zones 4-8, in moist, but well drained slightly acidic soils in full sun to partial shade. Some of the cultivars of merit include Spice Island™ which has red-pink buds that open to pure white spicy scented flowers and satiny dark green foliage, Spiced Bouquet™, a compact shrub which has dark rose pink buds that open to fragrant soft pink flowers and glossy green leaves, and Sugar ‘n’ Spice™, which produces a profusion of smaller bouquets of fragrant flowers and deep green foliage that turns wine red in autumn.



**Koreanspice viburnum produces very fragrant flowers.
Photos: Ginny Rosenkranz, UME**

Degree Days (as of April 12)

Abingdon (C1620)	128
Annapolis Naval Academy (KNAK)	181
Baltimore, MD (KBWI)	219
College Park (KCGS)	206
Dulles Airport (KIAD)	217
Ft. Belvoir, VA (KDA)	204
Frederick (KFDK)	163
Gaithersburg (KGAI)	182
Gambrills (F2488, near Bowie)	203
Greater Cumberland Reg (KCBE)	132
Perry Hall (C0608)	130
Martinsburg, WV (KMRB)	114
Natl Arboretum/Reagan Natl (KDCA)	279
Salisbury/Ocean City (KSBY)	218
St. Mary’s City (Patuxent NRB KNHK)	315
Westminster (KDMW)	224

Important Note: We are using the [Online Phenology and Degree-Day Models](https://www.umd.edu/phenology/) 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 **114 DD** (Martinsburg, WV) to **315 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.

Boxwood spider mite – egg hatch (**141 DD**)
European pine sawfly – larva, early instar (**154 DD**)
Woolly elm aphid – egg hatch (**163 DD**)
Inkberry holly leafminer – adult emergence (**165 DD**)
Spiny witchhazel gall aphid – adult/nymph (**171 DD**)
Spruce spider mite – egg hatch (**179 DD**)
Boxwood psyllid – egg hatch (**184 DD**)
Tea scale – egg hatch / crawler (1st gen) (**195 DD**)
Viburnum leaf beetle – first egg hatch (**210 DD**)
Azalea lace bug – egg hatch (1st 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 (1st gen) (**232 DD**)
Hemlock woolly adelgid – egg hatch (1st 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**)

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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