

Commercial Horticulture

April 8, 2022

### In This Issue...

- [Ambrosia beetles](#)
- [Diseases](#)
- [Arizona cypress](#)
- [Apple scab](#)
- [Eriophyid mites](#)
- [Spotted lanternfly](#)
- [Scale insects](#)
- [Mining bees](#)
- [Report correction](#)
- [Plum curculio](#)
- [Squirrel damage](#)

[Beneficial of the Week:](#) Lady beetles as predators of scale

[Weed of the Week:](#) Lesser celandine

[Plant of the Week:](#)  
*Epimedium x versicolor*  
'Sulphureum'

**Degree Days**

**Pest Predictions**

**Phenology**

**Conferences**

[Pest Predictive Calendar](#)

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)

### Coordinator Weekly IPM Report:

Stanton Gill, Extension Specialist, IPM and Entomology for Nursery, Greenhouse and Managed Landscapes, [sgill@umd.edu](mailto: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)

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)

### Ambrosia Beetle Activity: Down to nothing this week

By: Stanton Gill

Good news – the cold weather followed by several days of rain resulted in nothing showing up in the alcohol baited Lindgren traps across the state.

This may change rapidly next week since the temperatures move into the mid 60s (°F) on Monday and soar to 70 °F by Wednesday. **We will put out an announcement if we see flight activity of ambrosia beetles.**

### Perfect Week for Disease

By: Stanton Gill

Hopefully, you got your fungicide application on over the weekend or at least on Monday when the weather was clear. The rains that came in Tuesday and stayed through the week and made perfect conditions for scab and rust infection.

### Arizona Cypress

By: Stanton Gill

We are still getting feedback on planting Arizona cypress in Maryland. A summary of responses will be in the next week IPM report.

## Scab Active This Week: Time to take action

By: Kari Peter, Penn State University Extension

Despite cooler temperatures, apple scab spores continue to mature. A significant apple scab infection event is forecasted April 5 to 7, 2022. For those with green tissue present on their apple trees, protection is necessary for this event.

Depending on variety, the apple trees are at some stage of green tip and tight cluster is not far behind. The maturity of apple scab spores from overwintering leaves continues to soldier on and we have a significant apple scab infection event that spans three days this week, April 5, 6, and 7. Although the average temperatures are on the cooler side, plenty of leaf wetness hours from this forecasted rain event will satisfy the conditions to cause apple scab infection if spores and green tissue are present.

Tight cluster begins powdery mildew control. During 2021, we experienced many dry days during the early season and powdery mildew caught some people off-guard. Although dry weather favors low apple scab disease pressure, this is not the case for powdery mildew. Please do not forget about powdery mildew during those dry days.

### Management options:

If dormant copper applications have been recent, this will have protected your apple trees through this apple scab infection period.

- Mancozeb can be used alone at 3 lb/A.
- Tank mixing with Syllit (1.5 pt/A).
- Sulfur (8 – 10 lb/A)
- Potassium bicarbonate (3 lb/A)

As I have been advocating for a few years, green tip through first cover should include a rainfast mancozeb (Manzate Pro-Stick, Roper Rainshield, etc.). The rainfast quality of the mancozeb gives better disease control since it can persist longer during rainy, wet periods. Any non-rainfast mancozeb can be made rainfast by adding a spreader sticker (4 fl oz/100 gal). In some cases, mancozeb could be extended to second cover; however, be mindful of the 77-day PHI for early cultivars.

### Eriophyid Mites

Heather Zindash, The Soulful Gardener, found a large number of eriophyid mites on Douglas fir and Norway spruce. Heather noted that she first noticed stippled needles and cast skins and needed high magnification to find the mites.

**Control:** Use horticultural oil for these mites. Do not apply oil to blue spruce.

**Eriophyid mites and eggs**  
Photo: Heather Zindash, The Soulful Gardener



## Spotted Lanternfly

By: Paula Shrewsbury

Although you may not be seeing any spotted lanternfly yet, either because it is too early in the season and they are still in their overwintering egg stage (Stanton Gill showed images in last weeks IPM Alert) and /or you don't live in area where the spotted lanternfly has invaded yet. But yet is the operative word here. It is highly likely it is just a matter of time before spotted lanternfly invades your area. This is the time to learn about spotted lanternfly and come up with a plan as to what you might do to prepare for it and hopefully reduce its impact. To help with this, here I present a table of common host plants (this is not an exclusive list) that spotted lanternfly feed on as nymphs and then adults over the season (Table 1). This table will help you know when to start monitoring for activity of nymphs and adults and on what host plants you are likely to find them on. As the table indicates, spotted lanternfly changes the types of plants it feeds on as it matures through the season. The early instar nymphs begin activity in May, and mid to late instar nymphs are active in June and July. In early May, start monitoring for spotted lanternfly egg hatch / early instar nymphs (see image).

The other information I provide today are web links to additional resources that you should review and be familiar with to help you develop your monitoring and management plan for spotted lanternfly. See the below weblinks and their descriptions.

*Web resources with relevant spotted lanternfly (SLF) information:*

- From Penn State University- A comprehensive SLF management guide that include information on SLF

HOST	NYMPHS			ADULTS		
	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER
Rose (cultivated, multiflora, etc.)						
Perennials						
Grape (wild and cultivated)						
Tree-of-heaven						
Black walnut, butternut						
River birch						
Willow						
Sumac						
Red/silver maple						

**Table 1. Common plant hosts for spotted lanternfly feeding throughout the season. Information in this table is based on observations in Eastern Pennsylvania and may vary based on local conditions. This is not an inclusive list. From: <https://extension.psu.edu/spotted-lanternfly-management-guide>**

identification and life cycle; feeding patterns; permit regulations and sites to get permitted; host plant range and damage; monitoring and decision making; and an integrated management approach including the removal of tree of heaven or egg masses, traps, biological control, and chemical.

<https://extension.psu.edu/spotted-lanternfly-management-guide>



Close up of an early (1st – 3rd) instar nymph of spotted lanternfly. They start at a few mm in size as first instars to about ~ 6 mm as 3rd instars. Note the black color with white specks. These colors change to red and black in later instar nymphs. Photo: NJ Dept. Agriculture

From the Penn Dept. of Agriculture – Information on quarantines and permitting, and other general SLF information. [http://www.agriculture.pa.gov/Plants\\_Land\\_Water/PlantIndustry/Entomology/spotted\\_lanternfly/Pages/default.aspx](http://www.agriculture.pa.gov/Plants_Land_Water/PlantIndustry/Entomology/spotted_lanternfly/Pages/default.aspx)

- From the MD Dept. of Agriculture – Information on reporting SLF; quarantine zones, regulations, and permitting; images; host plants; and more.

<https://mda.maryland.gov/plants-pests/Pages/spotted-lantern-fly.aspx>

- From the NJ Dept of Agriculture – Good images of the different life stages; images of look-a-like insects; general information.

<https://www.nj.gov/agriculture/divisions/pi/prog/pests-diseases/spotted-lanternfly/>

- From USDA APHIS – General information; images of life stages.

<https://www.aphis.usda.gov/aphis/resources/pests-diseases/hungry-pests/the-threat/spotted-lanternfly/spotted-lanternfly>

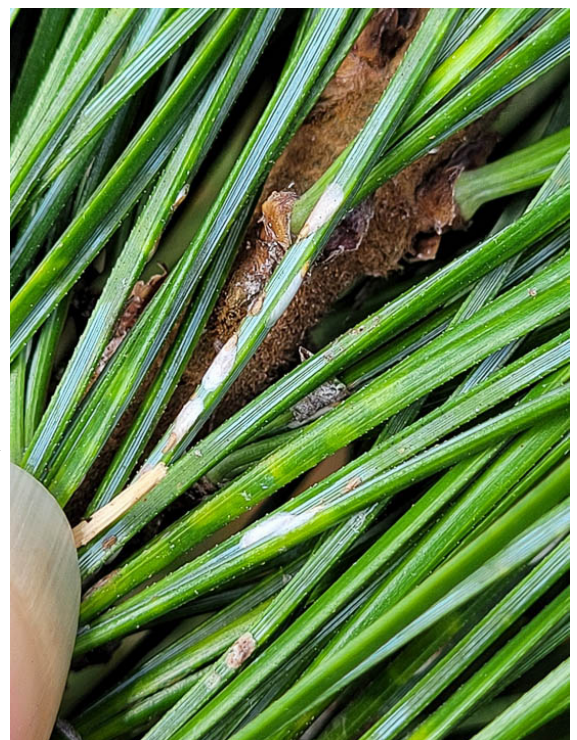
## Scale Activity

Marie Rojas, IPM Scout, found several scale insects in Frederick County on April 4.

Pine needle scale on *Pinus cembra* 'Chalet' (pic) - they are eggs under covers right now. Predators like lady beetles help keep this pest under control. Wait until crawlers are active in May to apply control measures.

Maskell scale on *Chamaecyparis* n. 'Pendula'. Look for the first generation of crawlers in May.

Indian wax scale on *Styrax japonicus* and *Acer buergerianum*. Look for crawlers in June.



Pine needle scale on *Pinus cembra* 'Chalet'  
Photo: Marie Rojas, IPM Scout

## Mining Bees Active in Waldorf This Week

By: Stanton Gill

Bill McGee, Outdoor Creations, sent in these pictures from a residential landscape in Waldorf. These are the mining bees, which we have reported on for the last two years, as one of the native and beneficial pollinators found early in the season. This is one incredible population that Bill photographed and someone seeing this sort of population in their landscape may feel they have to do something about it. The mining bees are usually active for 6 – 8 weeks in the spring and they are not aggressive. The benefit of these pollinators outweighs the need to eliminate them in a home lawn.



Mining bees are active this month  
Photos: Bill McGee, Outdoor Creations

## Correction to Tea Scale Photo in April 1, 2022 IPM Report

Lorraine Graney, Bartlett Labs, pointed out that in last week's photo of tea scale, there were both tea scales (small brown scales) and a *Lepidosaphes* species of scale (larger oyster shell shape).



Tea scale and a *Lepidosaphes* species of scale

## Plum Curculio Flight Starting

By: Stanton Gill

If you have customers with apples, pears, plums, or quince, you need to be aware that plum curculio is active in spring. The adult plum curculio overwinters in leaf litter. It is a native pest with one generation per year. The damage shows up later in the season with a crescent-shaped wound on the fruit. The larva bores into the flesh and damages the seed causing a cat-facing malformation of the fruit with crescent-shaped scar tissue on the fruit skin.

This afternoon, we're putting traps out so we can let you know next week if we are seeing flight activity. I suspect the warmer temperatures next Wednesday will generate activity.



Cat-facing damage caused by plum curculio feeding

After about five days, the larvae will hatch and burrow into the fruit. The larva is a legless grayish white grub with a brown head. Its length will be about 1/3 inch when full grown. When the larvae are fully developed, they will leave the fruit through clean exit holes. No frass or webbing will be evident. Frass is usually found around the calyx end on codling moth damaged fruit.

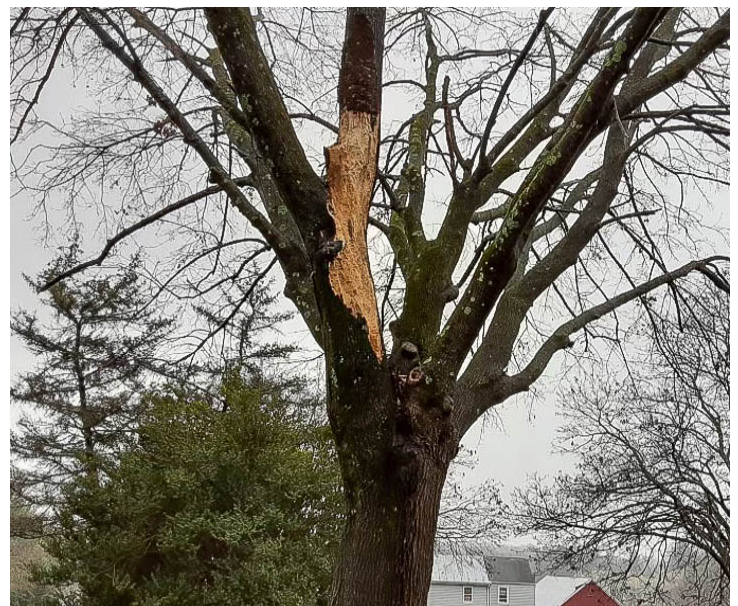
While presenting at national entomological meetings in Denver back in November, I read a poster on plum curculio and assessing new controls. One thing noted in the poster was adults come up from the leaf litter when blooms are in the white-tip stage and they fly under the canopy of the tree. When the fruit trees come into bloom, they are found mainly flying up among the blooming branches. As the flower petals drop, they immediately start laying eggs on the newly forming fruit.

Timing is everything with this pest. Just as the lower petals are dropping, apply your preventative insecticides. Avaunt insecticide has worked well for us in the past two years of trials.

## Squirrel Damage on Trees

By: Stanton Gill

Debby Sykes sent this picture of a tree with bark stripped off the trunk. We see this damage most years in April. It is caused by squirrels stripping off the bark of trees. There are not many ways to prevent this damage.



Squirrel damage on tree trunks  
Photo: Debby Sykes

## Beneficial of the Week

By: Paula Shrewsbury

### Some lady beetles are impressive scale predators.

Last week, Marie Rojas (IPM Scout, Borders & Butterflies) reported Japanese maple scale, *Lopholeucaspis japonica* (Diaspididae), on a variety of trees. But most excitingly, she reported seeing the native twice-stabbed lady beetle, *Chilocorus stigma* (Coccinellidae), associated with the scale.

There are seven species of *Chilocorus* lady beetles that are native and occur in the U.S., and most of them are predacious and prefer to feed on armored scale insects, although some will also feed on aphids, adelgids, mites and other small soft bodied insects or eggs. The twice-stabbed lady beetle is the most common lady beetle that feeds on scales. One of the first lady beetles of the season to be active is the twice-stabbed lady beetle. In past years, I have often seen it feeding on overwintering Japanese maple scale on the bark of infested trees as early as March. When you look at the adult twice-stabbed lady beetle, you can see where the name “twice-stabbed” comes from. Adults are relatively small (~ ¼”) and appear shiny black with two large red spots, one in the center of each elytron (front wing). It gives the appearance that it is bleeding. A narrow ridge or lip extends out from the bottom edge of the elytra. Larvae are black or grey and spiny in appearance. The larvae are often over looked on plants because they work their way down under scale covers where they feed on eggs or scale bodies. Eggs are small (~1.1 mm), orange and laid either singly or in small groups. There are two generations of twice-stabbed lady beetles in the northern U.S. and more in warmer states. They overwinter as adults, which begin foraging for food as soon as temperatures begin to warm up. Female adults have two forms of defense to deter predators who want to eat them. They emit a noxious substance from their legs when threatened and they taste bad to predators. The twice-stabbed lady beetle is a native predator found throughout most of the U.S. except it does not occur west of the Sierra Nevada. It has also been introduced into Hawaii. Twice-stabbed lady beetles are arboreal insects. They provide biological control of scales on trees in landscapes, nurseries, urban and natural forests, and orchards.



A twice-stabbed lady beetle, *Chilocorus stigma*, adult commonly found feeding on Japanese maple scale and other armored scale species.

Photo: Troy Bartlett, Bugguide.net



Larvae of the twice-stabbed lady beetle, *Chilocorus stigma*, are grey and black with spines. Note the pupal stage in the upper center of the image.

Photo: Carl B. Barrantine, Bugguide.net

Both the adult and larval stages feed on scales. We frequently see twice-stabbed lady beetles on trees infested with Japanese maple scale, and sometimes in great abundance. I often find both larvae and adults voraciously feeding on Japanese maple scale on the trunks of trees throughout the season. This is interesting since Japanese maple scale is an exotic insect from Asia and twice-stabbed lady beetle is native. As the weather warms, hopefully, we will see additional predators and parasitoids joining in the fight against scales, one of the most common pest groups of ornamental plants. If natural enemies are active on your scale infestations and you are considering the use of pesticides, be sure to select ones that have low impact on natural enemies.

## Weed of the Week

By: Chuck Schuster

Many started the week with very dry conditions and now are feeling much better about the available moisture in the soil. Rainfall varied during the week, in one event the Howard County area received about 1.25 inches, but in northern Carroll County they received less than .2 inches. Soils are warming, with Mark Schlossberg sending in a photo of soil temperatures in Clarksville of 56 °F. Not far from Clarksville, soil temperatures were 48 °F. As soil temperatures warm into and through the 50 °F range, the germination of annual weeds will start.

The turf and woodland borders are blooming with lesser celandine, *Ficaria verna* L.. Other areas have seen this herbaceous perennial already having completed its bloom cycle for the year. Lesser celandine is also known as fig buttercup and pilewort. This herbaceous perennial is flowering currently in many of the warmer soil locations. This spring ephemeral arises early in the season, often near forest fringe areas and creates a dense carpet thus preventing native ephemerals that include bloodroot, wild ginger, and others from surviving. The dense growing pattern makes this plant an invasive weed that competes and eliminates native understory plant species. It is also a plant that competes in turf areas, if allowed, causing the turf to become very thin. When lesser celandine dies back later in the spring, it provides openings in the turf that allows for summer germinating weeds to move in.

This plant has a basal rosette of dark green and shiny stalked leaves that are heart to kidney-shaped. The flowers arise above the leaves on a delicate stalk, are yellow in color, and occur with eight petals (rarely more). The center of the flower will be slightly darker in color. Most flowering occurs in this region from early March through May. The plant has pale cream-colored bulblets that occur along the stem axils that will become noticeable with close observation after the flowering period is complete. These bulblets make mechanical removal difficult. Lesser celandine spreads primarily by vegetative means through abundant tubers and bulblets (Photo 1). It is considered invasive in many areas. It should be noted that this plant may be misidentified as marsh marigold *Caltha palustris*, which does not produce the tuber as found on lesser celandine.



**Photo 1: Lesser celandine produces tubers and bulblets**



**Lesser celandine in flower**  
**Photo 2: Ginny Rosenkranz – UME**

Control of lesser celandine is difficult. Cultural methods for control of this plant is limited to mechanical removal only. Manual methods can achieve success with small patches, but will take careful removal of all



bulbets and removal from the site to either a landfill or other means of destruction. This will be extremely difficult in larger turf areas. When doing manual removal reseed the area to prevent the germination of the summer grassy weeds in these bare spots. Chemical control can be achieved using glyphosate (Rodeo from Corteva and Roundup Custom from Bayer are labeled for wetland areas) products early in the season, Mid-February to early April, as long as the air temperature is 50 degrees Fahrenheit and no rain is anticipated within 12 hours. Waiting beyond this period of time may cause damage to many native wildflowers that share some sites. In this area it is recommended to wait until half the plants are in bloom to start control.



**Photo 3- Chuck Schuster- UME Retired**

In turf/lawn settings, products containing at least two of these herbicides have been found effective. The herbicides to look for are MCPA, triclopyr, dicamba, that will remove many broadleaf weeds. Use caution with these products near ornamentals and the potential for volatilization does exist in warmer temperatures. These are not products that should be considered near delicate landscapes or vegetable gardens. Glyphosate products are non-selective and will destroy desired plant species. Some Glyphosate will take seven to fourteen days, adequate soil moisture and air temperatures for noticeable plant changes to occur. Prizefighter, and Burnout will suppress Lesser celandine but are not effective in actual control.

## **Plant of the Week**

By: Ginny Rosenkranz

*Epimedium x versicolor* 'Sulphureum' has 3 common names, bicolored epimedium, bicolored barrenwort, and bishops hat. The green heart-shaped foliage is reddish in the early spring and again in the autumn. The medium green leaves are compound, with heart-shaped leaflets on wiry stems that form mounds 8-12 inches tall. Bishops hat prefers to grow in light dappled shade to moderate shade with organically rich soil, but will tolerate average to dry soils. The bicolored flowers have pale yellow sepals and bright yellow petals with deep yellow spurs and are gathered in clusters on thin wiry stems that dance above the foliage. Cold hardy in USDA zones 5-9, these dainty plants are tolerant of drought, heavy shade, rabbits, deer, and dry or rocky soils. They are viewed best if planted along shady pathways or borders. Cut back the foliage in late fall to allow the new growth to emerge without competition.



***Epimedium x versicolor* 'Sulphureum' prefers light shade to moderate shade  
Photo: Ginny Rosenkranz, UME**

## Degree Days (as of March 30)

Aberdeen (KAPG)	67
Annapolis Naval Academy (KNAK)	117
Baltimore, MD (KBWI)	132
College Park (KCGS)	107
Dulles Airport (KIAD)	133
Ft. Belvoir, VA (KDA)	161
Frederick (KFDK)	85
Gaithersburg (KGAI)	99
Gambrils (F2488, near Bowie)	120
Greater Cumberland Reg (KCBE)	74
Martinsburg, WV (KMRB)	78
Natl Arboretum/Reagan Natl (KDCA)	191
Salisbury/Ocean City (KSBY)	212
St. Mary's City (Patuxent NRB KNHK)	226
Westminster (KDMW)	118

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

## Conferences

**Links for more information and to register will be provided when available.**

### May 17, 2022

MAA Pest Walk

### June 10, 2022

Montgomery County Annual Procrastinator's Conference

The 27th Annual Procrastinator's Pesticide and Urban Nutrient Management Conference will be held on Friday, June 10. This in person meeting will take place at the Montgomery County Extension Office in Derwood. Registration information will be posted on the IPMnet Conference webpage once details are finalized.

### June 17, 2022 (Virtual)

Contact: Ginny Rosenkranz, [rosenkranz@umd.edu](mailto:rosenkranz@umd.edu)

### June 24, 2022 (Virtual)

Turf Program

Contact: Mark Carroll

### June 30, 2022

Greenhouse Biological Control Conference

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

Drone Training Program

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

---

**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.

Photos are by Suzanne Klick or Stanton Gill unless stated otherwise.

The information given herein is supplied with the understanding that no discrimination is intended and no endorsement by University of Maryland Extension is implied.

University programs, activities, and facilities are available to all without regard to race, color, sex, gender identity or expression, sexual orientation, marital status, age, national origin, political affiliation, physical or mental disability, religion, protected veteran status, genetic information, personal appearance, or any other legally protected class.