

Commercial Horticulture

June 11, 2021

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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

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Ambrosia Beetles and Sapsuckers

By: Stanton Gill

It is interesting that we experienced one of the coolest springs in decades and saw several spikes in ambrosia beetle activity over the last 2.5 months with the high temperatures between the cool periods. Several nursery owners in PA, NJ, and MD are reporting some of their highest losses from ambrosia beetles this spring. One nursery owner reported that the sapsuckers, many of which overwintered in Maryland with the mild winter, were hitting sugar maples, hornbeams, and red maples in the nursery causing a large number of trees to be heavily damaged. The ambrosia beetles then attacked the trees that were damaged by the sapsuckers.

Our counts at CMREC this week are: 2 *Xylosandrus germanus* and 5 *Xylosandrus crassiusculus*

2021 MDA Pesticide Container Recycling Program

See the [brochure](#) for dates and locations

Cicadas This Week

By: Stanton Gill

I called nursery owners in Baltimore County, Carroll County, Howard County, Frederick County, and Harford County this week to see if cicadas were causing damage in their field grown nursery plants. Many of these nurseries were established on land that in prior years had been in field crops. In these cases, many of the nurseries are reporting very little, if any, adult cicada activity in the nursery. For the nurseries that are surrounded by woods and have plants growing close to the woods, cicada females are showing up on stems of dogwoods, *Ilex verticillata*, and maples to oviposit into the branches. The nurseries seeing this activity comment that the females only fly into a couple of rows from the woods, hitting the plants near the edges. The damage on 3 – 4 year old trees is mainly on tip branches which the nursery owners plan to prune out later in the summer. Most of the nursery owners reported that they hear the cicadas in adjacent woods. The cicadas are very loud, but not really causing significant damage in most nurseries.

Paul Wolfe, Integrated Plant Care, claims he is seeing 21 lb birds in the Bethesda area. He attributes these overweight birds to the rich cicada populations in the area. My orchard in Westminster is surrounded by woods, and we have lots of cicada activity in the woods, but have only seen a couple of cicadas wander into the 17 acres of fruit plantings.

As we move through June and the heat causes branches to dieback, your customers will be upset about the amount of tip damage that shows up. Their only real course of action is to cut off damaged branches they can reach from the ground. They really do not need or can do much else. You can refer homeowners to the Home and Garden information Center (extension.umd.edu/hgic) to obtain information on a course of action. Do not refer them to us at any of the Research and Education Centers.

Do Cicadas Pee?

Christa Corrigan, UME-HGIC, pointed out to us that the cicadas in her Rockville neighborhood were excreting honeydew pee all over their landscape, and it was starting to ferment and smell bad. I found this quote on the web: "Cicadas buzz, eat, mate, lay eggs and die over the period of a month to six weeks. And, they also pee. A lot. Yes, adult cicadas do feed, and they excrete waste liquid — called, euphemistically, 'honeydew'," said John Cooley, an entomologist and Brood X cicada expert at the University of Connecticut.

Theresa Dellinger, Insect ID lab, of Virginia Tech commented, “observed heavy amounts of honeydew in elms with many cicadas (mainly *M. cassinii*) in the canopy and on the surrounding vegetation in Fredericksburg, Virginia, yesterday. I would say the honeydew was mainly from the cicadas as the spotted lanternfly population has crashed at that particular site and we did not observe numerous other aphids or scales on the tree.”

So what is happening in the landscape with this excrement product? Aphids are plentiful at this time of year in tree and shrub canopies and excreting large quantities of sugary, sticky honeydew. Soft scales, such as lecanium scale, are also excreting large quantities of honeydew. Both aphids and soft scales feed in the phloem tissue of the plant. There is plenty of sugar and protein in this phloem tissue. The aphids and scale excrete the sugary honeydew out of their rear ends and leave a sticky, tacky substance on everything below the infested plant. Cicadas feed on xylem vascular tissue. These vascular tubes contain water and nutrients (soluble salts) from the root system that is being transferred to the foliage to be made into sugars and proteins by the foliage through photosynthesis. Early in the year, there is some transfer of sugars to the newly emerging foliage, but after this short period, it is mainly water and nutrient soluble salts in the xylem tissue.

Female cicadas use their stylet mouthparts to pierce into the xylem and extract water and soluble nutrient salts. This is excreted by the cicadas onto the surfaces below the plants on which they are feeding. It is not the same

sugary substance that aphids and soft scales excrete. Honeydew is not a well defined technical term, so people call this excretion from cicadas honeydew, but it is different from the honeydew that most people know. Much of what many people are seeing is this cicada excrement and probably honeydew from aphids and soft scales.

Cicada Reports

Tony Murdock, Fine Pruning, reports that he has yet to see a single cicada in Frederick. He did note that the first time he heard them was at the landfill which is about 6 miles southeast of Frederick City.

Annette Cormany, UME-Washington County, reports that she has been hearing and seeing plenty of cicadas in Washington County for 2-3 weeks. Annette notes that they are particularly abundant in the woods and meadows of Antietam Battlefield's hiking trails.



Jay Nixon, American Pest, found a female cicada and oviposition damage on a maple in Clarksville on June 7.
Photo: Jay Nixon



Mike McWilliams, Maxalea, Inc. found damage on an *Acer rubrum* on June 9 in the Seminary Springs development (Zip code 21093). Mike also found more tree damage on *Cercidiphyllum japonicum* (Katsura tree) in Towson as shown in the photo.
Photo: Mike McWilliams



Ron Muir, First Energy, reports that cicadas have been very active this week in Martinsburg, WV. He reported seeing them lay eggs in his oak tree and red maple and that numerous spent bodies are being found on the ground and porch. The photo of the oak shows oviposition damage along the stem.
Photo: Ron Muir



Oviposition damage on an oak (left) and the flagging that it causes (right)
Photos: Bob Mead, Mead Tree and Turf



We are also getting reports of cicada flagging damage on dogwood
Photo: Kevin Nickle, Scientific Plant Service



Steve Sullivan, Land Care, is finding damage on many trees along the side of the road such as on this black locust on Route 32. He is also seeing damage on pin oak, red oak, and willow oak and a lot of damage on 95 north of beltway that is just beginning to turn.
Photo: Steve Sullivan, Land Care



Karen Rane, UMD, is seeing dieback due to cicada oviposition on oaks on the UMD campus already. Karen found this damage on June 10.

Photos: Karen Rane, UME

Mite Activity

By: Stanton Gill

Harry Kenny, Nutrien Company, noted his customers are seeing a lot of damage from spruce spider mites on cryptomerias and arborvitaes. Marie Rojas, IPM Scout, found spider mites on *Cryptomeria japonica* at both a private landscape and a nursery in Beallsville on 'Green Giant' Arborvitae and on *Quercus phellos* at a nursery in Frederick County. The previous two weeks of cool nights and cooler than normal temperatures combined with little rain in May made it perfect for spruce spider mite activity. Steve Clancy mentioned he is seeing a lot of damage on Alberta spruce from spruce spider mites this season. Now that we have moved into hot and humid weather, we have perfect weather conditions for southern red mites to be very active on plants such as Chinese and Japanese hollies. Monitor these plants closely this week.



During the hot weather, look for southern red mites
Photo: Chazz Hesselein, Alabama Cooperative
Extension System, Bugwood.org

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Bagworm Activity Continues

Heather Zindash, The Soulful Gardener, found just hatched bagworms in Dickerson on June 5. Check infested trees for egg hatch before treating. Monitor plants such as arborvitae, spruce, and Leyland cypress. Bagworms are also found on deciduous trees and herbaceous plants, but the damage is usually less evident. Bt (Dipel, Caterpillar Attack), Spinosad (Conserve) or Acelepyrn will all give good control of young larvae.



Control measures are more effective when caterpillars are still small

Photo: Heather Zindash, The Soulful Gardener

Cryptomeria Scale – Crawlers Active

By: Stanton Gill

Now is the time to check for activity of cryptomeria scale. Heather Zindash, The Soulful Gardner, found cryptomeria scale crawlers under covers in Dickerson on June 5. Cryptomeria scale, *Aspidiotus cryptomeriae* Kuwana, is an armored scale that is especially difficult to detect because of the translucent waxy cover. All stages of cryptomeria scale are found on the underside of needles. The crawlers and males are the only stages capable of moving. Damage includes needle discoloration and injury. Look for this pest on cryptomerias, spruces, and firs.

By late July or early August, eggs of the second generation are present. The second-generation crawlers begin to emerge around mid-August, but some crawlers may be present into October. Two generations occur, but not all individuals mature at the same time, so the generations are not as distinct as some other multiple-generation pests.

Since this scale is in the crawler stage right now, it is a good time to apply an insect growth regulator such as Distance or Talus.



Look under the translucent female covers (left) to see if crawlers are active yet (right)

Photos: Heather Zindash, The Soulful Gardener

Cottony Cushion Camellia/Taxus Scale (*Pulvinaria floccifera*)

By: Stanton Gill

In the last issue of the IPM Alert, Nancy Harding and Paula Shrewsbury covered the life cycle of *Pulvinaria floccifera* scale. We have seen a major increase in populations of this scale showing up in landscapes in 2021. Paul Wolfe, Integrated Plant Care, reported some of the heaviest populations he has seen in his career on Japanese holly and *Taxus* plantings. Heather Zindash, The Soulful Gardener, sent in photos of the scale activity this week in central Maryland. She found crawlers in Rockville on June 8. The interesting thing that is being noted about this scale this year is the length of the crawler period. It is normally about 10 -14 days in length. Due to the cool nights over the last two weeks, the scale has shown a bit of a delayed and lengthy crawler period in 2021. Because of this situation, control with growth regulators, such as Talus and Distance, are still possible at this time of the year.



**Cottony Camellia/Taxus scale is in the crawler stage in Rockville this week. Note the psocid in the photo as well.
Photo: Heather Zindash, The Soulful Gardener**

Japanese Maple Scale

Heather Zindash, The Soulful Gardener, found first generation Japanese maple scale in the crawler stage (egg hatch) in Rockville on June 8. Applications of 0.5 - 1% horticultural oil and pyriproxyfen (Distance) or buprofezin (Talus) should be made when crawlers and settled crawlers are active. This treatment should have about 2 - 3 week residual activity.

For more information:

[UMD Japanese Maple Scale Fact Sheet](#)

[UMD Fact Sheet on Hosts of Japanese Maple Scale](#)



Monitor Japanese maple scale populations for egg hatch this week.

Photo: Heather Zindash, The Soulful Gardner

Gypsy Moths

Ginny Rosenkranz, UME, has seen and received reports of gypsy moth outbreaks on the Eastern Shore in areas of oak woods in Worcester and Wicomico Counties (Parsonsborg, Pitsville, Powellville so far). Ginny noted that the infestation is not widespread. MDA does spray for the young caterpillars in May, but these have shown up outside of their spray area.



Late instar gypsy moth caterpillar that is close to pupating
Photo: Eric Senkbeil



Pupal stage of the gypsy moth
Photo: Eric Senkbeil

Fall Webworms

Marie Rojas, IPM Scout, found the first generation of fall webworms active this week. Fall webworms have a wide woody plant host range. They feed within the webbing which is around the tips of branches and not in the crotches like eastern tent caterpillars which are active much earlier in the season. There are two generations per season. Usually, the generation in late summer to fall is more abundant. There are two color forms of the caterpillar: one that is yellowish white with a black head and one that is brown with a red head.

Control: If possible, prune out webbed terminals. Bt, horticultural oil, or insecticidal soap can be used for early instars. There are many predators and parasites that help keep this native pest at manageable levels.



Fall webworms are damaging *Malus* 'Goldrush'
Photo: Marie Rojas, IPM Scout

Galls on Elms

Marty Adams, Bartlett Tree Experts, found an American elm heavily infested with galls this week in Westminster. Marie Rojas, IPM Scout, found cockscomb galls on *Ulmus americana* cultivars this week. Both of these galls are caused by different species of aphids. Control is not necessary. For more information on these galls, [see the article](#) by Joe Boggs, The Ohio State University.



Many galls infesting *Ulmus americana*
Photo: Marty Adams, Bartlett Tree Experts



Elm cockscomb galls, caused by aphids, on *Ulmus americana*
Photo: Marie Rojas, IPM Scout

Virus Problems in Garlic

By: Jerry Brust, UME

If you have garlic growing in your garden, you may be noticing symptoms of a virus infection that show up as yellowing tips on many leaves with some that are completely yellow (fig 1). If you look closely at the yellow leaves you will see mottling or striping on the leaves (fig 2). These symptoms are usually more pronounced on young leaves. Infected plants are stunted and bulb size can be reduced. Garlic crops infected with viruses are usually more susceptible to weather conditions like extreme heat, and do not keep well post-harvest.



Fig. 1 Garlic plants showing symptoms of infection with virus complex
Photo: G. Brust, UME

What is usually called a ‘garlic virus’ is caused by several different viruses that can be grouped under the name “Potyvirus”; all symptomatic garlic that we tested was positive for Potyvirus. Some people lump these viruses under the name “garlic mosaic”. In this case garlic mosaic is thought of as a disease caused by one or more viruses that include onion yellow dwarf virus, leek yellow stripe virus, and others. These viruses can be transmitted through the planting stock or by aphids and it is thought because garlic is clonally propagated much of the planting



Fig. 2 Streaking, striping on leaves of garlic infected with virus complex
Photo: G. Brust, UME

stock could be infected with some type of virus. These viruses are usually mild and do not seriously affect yield. The problem comes in when the plants are infected with several different Potyviruses, and then there can be moderate to severe yield reductions. We may have had more aphid movement earlier this year, which may have increased additional virus infections in garlic plantings. You cannot reduce virus transmission by spraying pesticides. Any garlic with symptoms should be watched and possibly harvested early or rouged out if yellowing and decline increase in the coming weeks.

Watch for Thrips and Mites in Vegetables

By: Jerry Brust, UME

The hotter temperatures we have had have caused thrips and to a lesser extent two spotted spider mite, TSSM (*Tetranychus urticae*) populations to rapidly increase in some vegetables. These pests feed by puncturing the outer layer of plant tissue and sucking out the cell contents, which results in stippling, discolored flecking, or silvering of the leaf surface (fig.1). We will talk mostly about thrips this time as I covered TSSMs in an earlier article. Thrips feeding is usually accompanied by black flecks of frass (thrips poop) (fig. 1a), while mite poop is white or clear. These two pests can discolor and scar leaf, flower, and fruit surfaces, and distort plant parts and in the case of thrips vector plant pathogens. There are several species of vegetable thrips with the most common being the Eastern flower thrips, *Frankliniella tritici*, Tobacco thrips *Frankliniella fusca*, Western flower thrips, *F. occidentalis* and Onion thrips *Thrips tabaci*. The last three species are the ones most likely to transmit tomato spotted wilt virus, TSWV. Thrips feeding produces various tissue responses, including scar formation and distorted growth (fig. 2). Females of most plant-feeding species lay their kidney-shaped eggs on or into plant tissue (this latter placement makes it practically impossible to find thrips eggs on plants). Thrips hatch from an



Fig. 1 Thrips feeding on tomato leaf, black specks are thrips feces (top photo) and feeding damage by mites (bottom photo)
Photos: G. Brust, UME

egg and develop into two larval stages and then the 'prepupa and pupa' stages, before becoming an adult. The prepupae and pupae of most species drop to the soil or leaf litter to pupate. Thrips have several generations (up to eight) a year. When the weather is warm, the life cycle may be as short as 2 weeks.

Thrips thresholds for vegetables are: flowers of tomato, pepper or watermelon can tolerate 5 thrips/flower with no fruit developmental problems. Squash and pumpkin flowers can tolerate 5-10 thrips/

flower with no effect on fruit quality. One or two applications of a pyrethroid or neonics or spinosad (see 2020/2021 Mid-Atlantic Commercial Vegetable Production Recommendation guide) applied with enough water (50-70 gal/a, you have to have thorough coverage) should control most thrips infestations. For two spotted spider mites Agri-Mek has shown very good results even when spray coverage was inadequate. There are several other miticides such as Acramite that also will give good control of TSSM and can be found in the recommendations guide. Be sure to apply any pesticides when bees will not be active in the field.

Some of the populations of thrips and mites in the field now are probably the result of transplants that were lightly infested with these pests. These infestations usually consist of immatures, which are hard to spot or eggs that are just about impossible to find if they laid inside leaf tissue (thrips) or there are only a few of them on the underside of the leaf in crevices (mites). Studies I have conducted show that if you treat your transplants (especially tomatoes) with 2 applications of a horticultural oil spray (0.5-1% by volume) with the first application coming 7-10 days before transplanting and the 2nd coming 1-2 days (or per label instructions) before you go to the field, you can almost eliminate any thrips or two spotted spider mite problems that started from your transplants. During the season spraying more than 3-4 times for thrips or two spotted spider mites in the field over a 4-5-week period with little control will lead to an even worse problem. This is because the sprays will greatly reduce all of the pests' natural enemies, but not the thrips or TSSM that may have developed resistance to the applied pesticides. Once you apply an insecticide or miticide you need to evaluate how well it worked by scouting the field again a few days after the application. If the pests are still very active you need to reevaluate what was applied and how it was applied.

Beneficial of the Week

By: Paula Shrewsbury, UMD

More lady beetles to love

Most of the seven species of *Chilocorus* lady beetles that occur in the U.S. are predacious and feed on scale insects, although some will feed on aphids and adelgids. The twice-stabbed lady beetle, *Chilocorus stigma*, 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. I often see it feeding on Japanese maple scale, *Lopholeucaspis japonica*, as early as March. You can see where the name "twice-stabbed" comes from with this predator. Adults appear shiny black with a large red spot in the center of each elytron (front wing) looking like it is bleeding. A narrow ridge or lip extends from the bottom edge of the elytra. Adult beetles average 1/4" in length. Larvae are black or grey and spiny in appearance. The larvae are often overlooked on plants because larvae hunker down under scale covers to feed on eggs or scale bodies. There are two generations of twice-stabbed lady beetles in the northern



Fig. 2 Pepper leaf distortions due to thrips feeding
Photo: G. Brust, UME

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 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. Twice-stabbed lady beetles are arboreal insects. They provide biological control of scales on trees in landscapes, nurseries, urban and natural forests, and orchards.

There have been reports in the IPM Newsletter in the past few weeks of adult twice-stabbed lady beetles in nurseries. This is timely since Japanese maple scale crawlers should be hatching any time now. We often think of lady beetles as being generalist predators feeding on a diverse array of prey items, as do many species of lady beetles. Interestingly, nearly all lady beetle species in the genus *Chilocorus* are predaceous on scale insects, although some will feed on aphids or other insects too, but armored scales (Diaspididae) are their preferred food. Both the adult and larval stages feed on scales. We commonly see twice-stabbed lady beetles on trees infested with Japanese maple scale, and sometimes in great abundance. I frequently 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 insects of ornamental plants. If natural enemies are active on your scale infestations, if pesticides are used be sure to select ones that have low impact on natural enemies.



A twice-stabbed lady beetle, *Chilocorus stigma*, adult commonly found feeding on Japanese maple scale and other 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 part of the image.
Photo: Carl B. Barrantine, Bugguide.net

Plant of the Week

By: Ginny Rosenkranz

Agastache Kudos™ Yellow is also known as hyssop or hummingbird mint. *Agastache Kudos*™ series comes in many colors including red, yellow, coral, ambrosia, gold, and Mandarin and are more compact and bushy than most other *Agastache*. Flowers usually bloom from July to September, and deadheading is often recommended. The series is also said to be more cold hardy and better adapted to hot and humid weather that is common in Maryland. The short mounded plants grow 1 foot tall and 2 feet wide, thrive in full sun with medium moisture but well drained soils, and are cold tolerant from USDA zones 6-10. The flowers are small 2-lipped tubular flowers that line up on slender square stems, attracting both butterflies and hummingbirds. The soft green serrated leaves are also fragrant, smelling like licorice and are arranged opposite of each other. The plants are said to be resistant to deer browsing and there are no serious insect or diseases. If planted in heavy soils

they may develop root or crown rot, and sometimes rust, but the Kudos™ series shows excellent resistance to powdery mildew.



Agastache Kudos™ Yellow has leaves that smell like licorice

Photos: Ginny Rosenkranz, UME

Pest Predictive Calendar “Predictions”

By: Nancy Harding and Paula Shrewsbury

In the Maryland area, the accumulated growing degree days (DD) this week range from about **738 DD** (Cumberland) to **1136 DD** (Reagan National Airport). 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.

- Calico scale – egg hatch / crawlers (765 DD)
- Oak lecanium scale – egg hatch / crawlers (789 DD)
- Japanese maple scale – egg hatch / crawlers (829 DD)
- European elm scale – egg hatch / crawlers (831 DD)
- Cottony maple scale – egg hatch / crawlers (872 DD)
- European fruit lecanium scale – egg hatch / crawlers (904 DD)
- Mimosa webworm – egg hatch 1st gen (1002 DD)
- Japanese beetle – adult emergence (1056 DD)
- Cryptomeria scale – egg hatch / crawlers (1101 DD)
- Fletcher scale – egg hatch / crawlers (1105 DD)
- Indian wax scale – egg hatch / crawlers (1145 DD)
- Oriental beetle – adult emergence (1147 DD)
- Fall webworm – egg hatch 1st gen (1173 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.

Degree Days (as of June 8)

Aberdeen (KAPG)	743
Annapolis Naval Academy (KNAK)	942
Baltimore, MD (KBWI)	983
Bowie, MD	1002
College Park (KCGS)	859
Dulles Airport (KIAD)	915
Ft. Belvoir, VA (KDA)	926
Frederick (KFDK)	876
Gaithersburg (KGAI)	861
Greater Cumberland Reg (KCBE)	738
Martinsburg, WV (KMRB)	755
Natl Arboretum/Reagan Natl (KDCA)	1136
Salisbury/Ocean City (KSBY)	973
St. Mary's City (Patuxent NRB KNHK)	1052
Westminster (KDMW)	1021

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

Greenhouse Program

July 8, 2021

Location: Catoctin Mountain Growers, Keymar, MD

IPMnet
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