

Commercial Horticulture

May 21, 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

Coordinator Weekly IPM Report:

Stanton Gill, Extension Specialist, IPM and Entomology for Nursery, Greenhouse and Managed Landscapes, 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)

Bagworms

By: Stanton Gill

Thanks to all of you who generously responded with bagworms for our drone pesticide application trial this summer. I received 14 emails with people volunteering their bagworms. I think we have plenty for the study at this point. We will be conducting the trial in June and will let you know the results later in the season



Look for bagworm hatch in June

2021 MDA Pesticide Container Recycling Program

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

What are Brood X Periodical Cicadas doing this week... more cicadas and males chorusing!

By: Paula Shrewsbury, UMD

Over the last few weeks, cicada emergence has been slow and patchy as to where cicadas were emerging, even within the same neighborhood. This was likely due to the cool weather and variation in micro-climates, even between yards in the same neighborhood (ex. trees in a sunny spot have cicadas emerging before trees in a shady locations). Once a cicada nymph emerges, it quickly heads for a vertical structure, preferably a tree, but it could be lower vegetation, structures, or even you if you stand still long enough. Relatively quickly, the cicada starts to molt to an adult. Many of them successfully become adults but it is always surprising how many cicadas fail to molt successfully from their nymphal skins. They appear to get stuck in their exoskeleton and die, or they are not able to successfully spread their wings. The occurrence of what seems to be higher than normal unsuccessful molts may be due in part to night temperatures dropping pretty low and low humidity. Humidity is important to molting insects.



Sadly after 17 years underground, this cicada did not make it to adulthood.

Photo: M.J. Raupp, UMD

This week we are having several days of warm weather and many more cicadas are emerging in more areas. but still not everywhere (at the time I am writing this). I believe we are very close to peak emergence in College Park and Columbia. For example, a large oak in my neighbor's yard has had many cicadas emerging for the past 4-5 nights to the point where I thought the cicadas must be mostly emerged. Well last night (Wednesday) I went out to check out the cicadas and there were literally tens of thousands coming out of the ground and climbing the tree (and me). For an entomologist this was cicada-topia! I hope that all of you will get to enjoy this "only a few times in a lifetime" experience.

This week I also started to hear the male cicadas chorusing in the trees in a few locations! When a cicada first molts (sheds its nymphal skin) into an adult, it is white. This is because its exoskeleton (skin) has not hardened off (sclerotized) yet. At this stage, the cicada adults are very susceptible to predators, and "soft-shelled cicadas" are good to eat. After an hour or so, the cicada hardens off. The body will turn black and the venation in the wings will turn orange. However, it still will take about 6-8 days for the cicada to harden off to the point where the males can sing (to attract females) and the males and females can mate. The chorusing by the males is just beginning. I heard reports of chorusing near Wolf Trap VA, and in Columbia MD I am hearing a few areas where chorusing is taking place. So exciting... the party in the treetops is starting!



Tens of thousands of cicadas emerged last night from below this oak tree and are making their way to the top.

Photo: P.M. Shrewsbury, UMD

Get ready... the cicada-palooza is ready to go! Go outside, enjoy and learn from this amazing event happening in your own yard.

Remember as you see cicadas, please upload pictures and *help us track Brood X periodical cicadas with the [Cicada Safari App!](#)*

If you see and / or have images of birds eating cicadas, please [report birds feeding on cicadas at this link](#).

For more information on Periodical Cicadas see:

- [Cicada Crew UMD website](#) - answers questions about Periodical Cicadas and will help everyone learn more about these amazing insects.
- YouTube on “How to net a small tree to exclude cicadas” can be found at: <https://www.youtube.com/watch?v=X4vjvdfnMM>
- *Cicada mania* is a great source of accurate information on periodical cicadas, along with having some fun cicada activities. <https://www.cicadamania.com/cicadas/all-the-cicada-faqs/>
- The *Cicada Safari* website has information and kid activities relating to cicadas in addition to links to download their Cicada Safari tracking app. <http://cicadasafari.org/>



Newly emerged teneral adult. The “soft-shelled” cicadas are a desired stage of many predators.
Photo: P.M. Shrewsbury, UMD

Cicada Update

By: Stanton Gill

Stephanie Dudek sent in pictures of cicada missing their abdomen. We suspect this is birds grabbing the abdomen and since males have a hollow abdomen they continue to live. Later in the season, we should see a number of cicada adults infested with an entomopathogenic fungi called *Massospora cicadine*. As we move into later June, you will find cicadas dying with a white abdomen. This is the fungi mycelium growing out of their body.

SOIL TEMPERATURES (From Chuck Schuster and Rachel Ross)

	Glenwood	Stevensville	Gaithersburg
May 15	48		51
May 16	50		53
May 17	51	64	53
May 18	50		
May 19	52	66	
May 20	55	68	59

Fifth instar cicadas emerge when the soil temperature is at 64 °F.

Cicada Vacuuming Dogs

By: Stanton Gill

Last week, we mentioned Paul Wolfe had two dogs who vacuum up cicada nymphs like candy. Paul's wife sent in this picture of the now-famous dogs named Ferguson and Fargo. They are dressed for cicada vacuuming action this week.



Paul Wolfe's dogs, Fargo and Ferguson, spend some of their time vacuuming up cicadas when out for walks
Photo: Ellen Wolfe

Brood X Periodical Cicada Reports

Donna Despres found periodical cicadas emerging on May 15 in Sykesville. sent pic

On May 16, Sonja Overeem in Gaithersburg saw quite a number of adult cicadas on her forthysia bushes. There were a small number of nymphs.

Joe Smith, Briarpatch Landscaping LLC, in Elkton made his first sighting on May 17.

The periodical cicadas have been slow to emerge right here at the research center in Ellicott City. There was one seen on May 19, 10-12 on May 20, and none on May 21. Within a few miles of the research center, there are sites with high numbers.



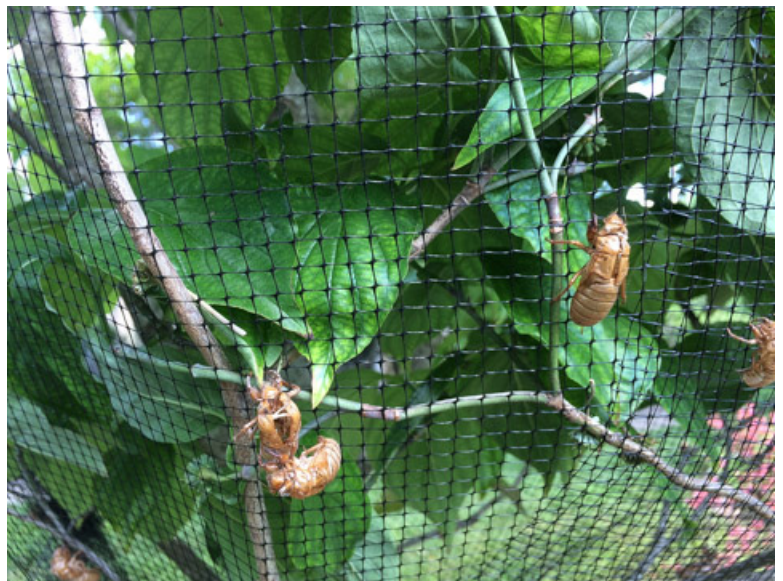
A brood X periodical cicada emerging on May 15 in Sykesville
Photo: Donna Despres

Steve Sullivan, LandCare, reported that he noticed the damage in the photos the following spring in 2005. Steve noted that this is typical of some evergreens when limbs are damaged to not leaf out the following year.



Damage on American holly (left) and inkberry (right) in 2005, a year after Brood X periodical cicada emergence in 2004
Photos: Steve Sullivan, LandCare

Netting Trees



When the netting is sealed at the base, the cicadas cling to the netting on the outside and are not able to get to the small branches to lay eggs
Photo: Dave Keane, Howard County Recreation and Parks

To be effective, you need t make sure the netting is sealed at the base
Photo: Joy Rafey, UME

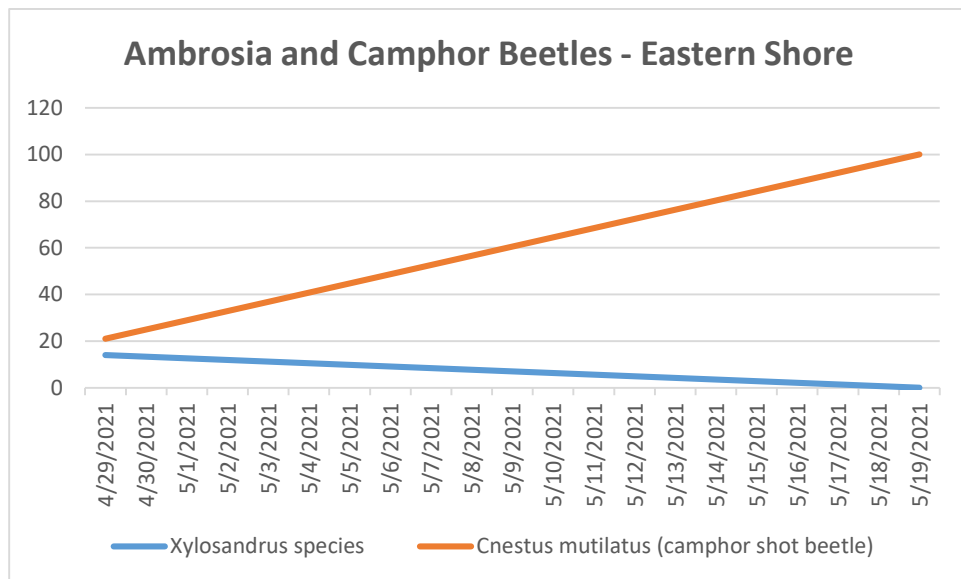
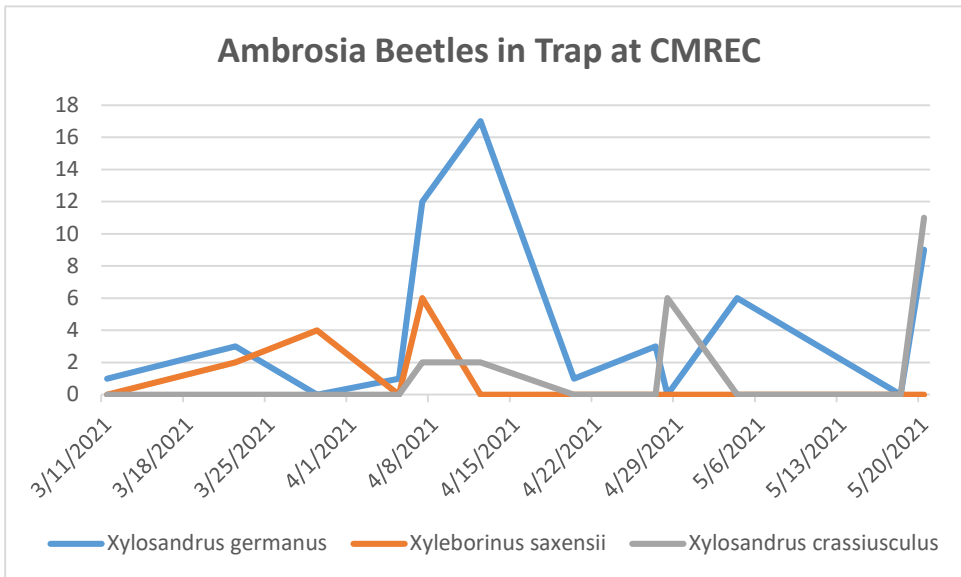
Ambrosia Beetle Update

By: Stanton Gill

We have been seeing very little flight activity last week and the early part of this week. The numbers in our Lindgren traps increased at CMREC and the Brookeville site on Thursday. With the warm weather over the next couple of days, we will likely see an increase in activity. We received a report from a New Jersey nursery that said it was hit by ambrosia beetles for the first time in several years.

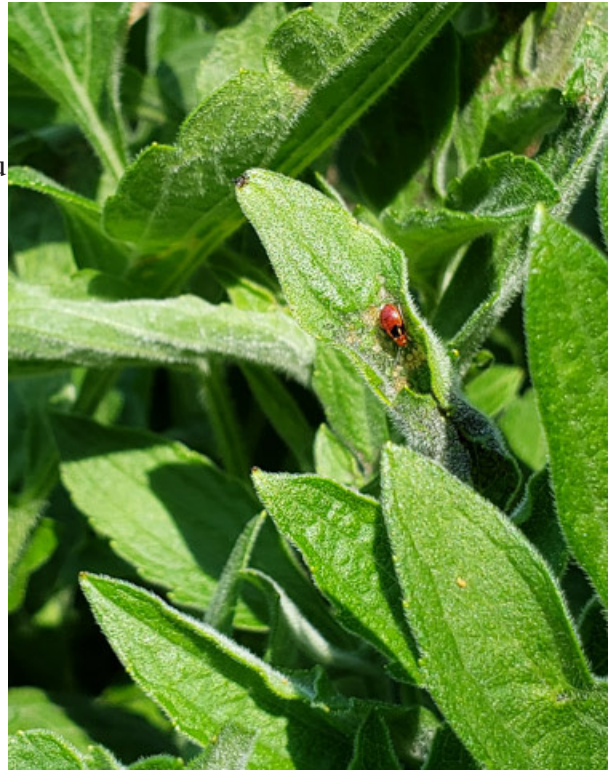
In Federalsburg, there is a site that trapped high numbers of camphor shot beetle (*Cnestus mutilatus*) on May 19. Today, there were 10 of these beetles in the trap. This species is relatively new in Maryland. On the Eastern Shore, monitor trees for oozing.

If you see activity such as damage to trees, send me an email at Sgill@umd.edu.



Four-lined Plant Bug

Marie Rojas, found four-lined plant bugs feeding on *Rudbeckia subtomentosa* 'Little Henry' in a landscape in Gaithersburg this week. These plant bugs feed on a variety of herbaceous and woody plants. As they feed, the insects inject a toxin into the plant tissue that causes the tissue to collapse and go necrotic. You end up with a series of small roundish dead spots on the foliage. Once the damage is present, there is not a lot to do about it. There is one generation per year early in the season. New foliage often covers up the old damage.



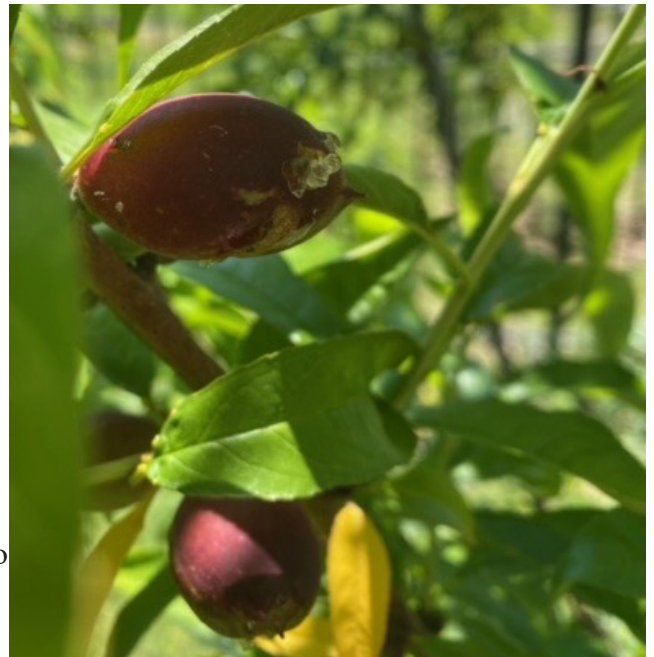
Both nymphs (shown) and adults of four-lined plant bugs cause damage on foliage
Photo: Marie Rojas, IPM Scout

Oriental Fruit Moth Damage on Nectarine

By: Stanton Gill

Last week in the IPM alert, I put in a section on damage from oriental fruit moth. This week, Jason Hipp sent in this picture of his customer's nectarine with a substance oozing out of the fruit. This is the nectarine reacting to the larvae of the oriental fruit moth that pierced into the fruit at this point. The game is over for this piece of fruit. Remove any damaged fruit. Hopefully the moth did not lay eggs near all of the fruit. The next generation flight activity is around 1000 - 1100 degree days and will be the second generation. You can protect undamaged fruit with either Avuant or Delegate. Add in a spreader sticker if it is a nectarine. The smooth skin tends to be a little harder to get the material to adhere to the surface.

Watch for the third generation at around 2100 degree days. At this point, the peach or nectarine is large and you don't want to lose it.



The oozing on this nectarine is caused by the feeding of the oriental fruit moth larva
Photo: Jason Hipp

Sawfly on Chionanthus

Request from Gaye Williams, Maryland Department of Agriculture, gaye.williams@maryland.gov

Please look at Chionanthus for foliar feeding and small spiny caterpillar-looking sawfly larvae of *Eupareophora parca*. An image can be viewed at bugguide.net/node/view/1963312.

If you find any, please send a few larvae in a small amount of ethyl alcohol, with collection data to me at MDA, Plant Protection Section, 50 Truman Pkwy, Annapolis, MD 21401. Dr. Dave Smith wants some for collection. Thanks.

Oak Lace Bug

Heather Zindash, The Soulful Gardener, found oak lace bugs on *Quercus robur* x Bicolor. If you see stippling on foliage, look on the undersides of the leaves for fecal spots and various stages of lace bugs. There are several generations of this lace bug each season. Usually, these lace bugs do not cause significant damage to warrant control in the landscape. Look to see if predators such as lace wings are present.



Oak lace bugs cause stippling damage on foliage and are found feeding on the undersides of the leaves

Photos: Heather Zindash, The Soulful Gardener

Aphids

Heather Zindash, The Soulful Gardener, found high population of aphids on *Hibiscus syriacus* this week. Monitor for predators on the plants. If control is necessary, choose a material with minimal impact on beneficials.

Leafminer on Columbine

Dave Keane, Howard County Recreation and Parks, found columbine leafminers causing extensive damage on columbines this week in Ellicott City. Look for the serpentine trails on the foliage that are created by the fly larvae feeding within the leaf. This leafminer overwinters in the pupal stage. It emerges as an adult in the spring and lays eggs at about the same time the plant starts to flower. More than one leafminer may be present within a leaf.

Control: In most landscapes, it is probably not worth trying to control this leafminer. The damage is noticeable, but usually the plant survives. For commercial herbaceous perennial nurseries where they want to sell really clean plants, then materials such as Avid or Tristar can be used. Applications need to be applied before the leafminers show up in the foliage.



More than one columbine leafminer may be present in a leaf
Photo: Dave Keane, Howard County Recreation and Parks

Minute Cypress Scale and Lecanium Scales

By: Stanton Gill

Heather Zindash, The Soulful Gardener, sent in this picture of minute cypress scale on Leyland cypress with crawlers found under the cover in the Gaithersburg area on Monday May 17th. She also found lecanium scale with eggs under the female covers on *Quercus robur*, also on May 17th.

First, the **minute cypress scale**, *Carulaspis minima*. This is the most common armored scale we are finding repeatedly on Leyland cypress. It can build to branch-killing levels in 2 – 3 years in most cases if left unchecked. The armor of females is circular to oval, white and parchment-like. In the center is a light yellow cast skin of an earlier nymph stage. The armor of the male scales is oblong and bright white. One generation per year occurs in Maryland with crawlers from now through the next 2 -3 weeks depending on ambient air temperature. The insect growth regulators, Distance or Talus, are good control materials with minimal impact on beneficials.

Lecanium scale on oaks. Female covers are humped up in May since the female body is loaded with eggs. The crawlers should be emerging very soon. Heather found eggs present



Crawlers were present under the cover of female minute cypress scale this week in Gaithersburg
Photo: Heather Zindash, The Soulful Gardener

under the covers on May 17th. Many of the crawlers will migrate out onto small twigs and leaves of the oaks in late May to early June. Control is similar with the use of Talus or Distance being good choices.



Eggs were present under the covers of female lecanium scales this week

Photo: Heather Zindash, The Soulful Gardener

White Prunicola Scale Activity

By: Stanton Gill

Cherry laurel is the most common plant we find infested with white prunicola scale, *Pseudaulacaspis prunicola*. It is commonly found on trees in the genus, *Prunus*, including Japanese flowering cherry and on many cherry laurel. We have 3 generations per summer in Maryland and by late August, the white covers often cover branches like snow flocking. The white covers are very noticeable by late in the summer.

If you have an infestation, we would love to have some samples sent to University of Maryland, CMREC, 11975 Homewood Road, Ellicott City, MD 21042. It should be very close to time, based on degree days, for crawlers to be emerging. Once crawlers emerge, Talus and Distance, again, are good choices for control materials.

Scale on *Hibiscus syriacus*

Marie Rojas, IPM Scout, found eggs being produced by a *Pulvinaria* scale on *Hibiscus syriacus* this week in Gaithersburg.



This scale is infesting *Hibiscus syriacus*
Photo: Marie Rojas, IPM Scout

Deer Tick Nymphs Are Very Active

By: Stanton Gill

I know cicadas are getting all of the focus this year, but be mindful that the nymphs of deer ticks are very active in May. I had a landscaper bring one in for ID that was embedded in his side. The deer tick (*Ixodes scapularis*) picks the bacterium up from field mice, and it is passed along to other mammals including humans. Lyme disease is a bacterial infection caused by the bite of an infected deer tick. Untreated, the disease can cause a number of health problems. Patients treated with antibiotics in the early stage of the infection usually recover rapidly and completely.

People, such as nursery operators, landscapers, and arborists who spend time in grassy and wooded environments are at an increased risk of exposure. The chances of being bitten by a deer tick are greater during times of the year when ticks are most active, which is NOW. Young deer ticks, called nymphs, are active from mid-May to mid-August and are about the size of poppy seeds. Adult ticks, which are approximately the size of sesame seeds, are most active from March to mid-May and from mid-August to November. Both nymphs and adults can transmit Lyme disease.



UMD-IPMnet

Be sure to check regularly for deer ticks after being outside

I treat my jeans with permethrin and let them dry. This provides excellent protection from ticks and lasts through 16 wash cycles. The research was done by the armed services' entomologist, and they use it to treat fatigues worn by soldiers who are out in the field.

Fruit Disease Update

By: Kari Peter, Penn State University Extension

We have experienced multiple infection events for fire blight and apple scab. Consequently, we are at the time when these infections are visible. It is important growers scout their orchards for potential infections. The earlier an infection is caught, the easier it will be to manage. The weather forecast this week will be dry, so this is an excellent time to assess disease in your orchards and take remediation steps, if necessary.

The region experienced two fire blight infection events: April 28–29 and May 4–5, 2021. If infection occurred in your orchard, symptoms would start to be visible beginning May 17. Consequently, it is imperative growers begin scouting their orchards this week and next week. The earlier fire blight infections are caught, the easier it is to manage the disease. We are nearing the end of the primary phase of apple scab. During this time, we experienced three major apple scab infection events during this season: April 9–13, April 29, and May 3–5, 2021. It is important growers scout their orchards for scab infections to determine if there are any issues that need to be addressed.

Items to keep in mind when pruning out fire blight infections:

- Do not cut out infections during wet weather since bacteria move via water.
- Cut out active infections early - before necrosis develops (limits the spread of bacteria).
- Pruning is most effective when incidence is low.
- Focus on salvaging tree structure and young high-density plantings when incidence is high.
- Bacteria can invade healthy tissue up to ~3 feet in advance of visible symptoms, which makes tool

sterilization ineffective.

- Practice the ugly stub method: cut 6–12 inches below the margin of visible infection and remove later during winter pruning.
- Ideally, infected tissue should be removed from the orchard and burned. However, if pressed for time, prunings can be left in the row middles to dry out and subsequently chopped with a mower.

Beneficial of the Week

By: Paula Shrewsbury

What eats periodical cicadas?

A few weeks ago I discussed that **predator satiation** is the main defense of periodical cicadas. This is when the cicadas emerge synchronously in massive numbers, so many that every predator that wants to eat cicadas can eat their belly full and there will still be enough that survive to carry on the population in future generations. I am often asked “what eats cicadas?” The short answer is almost everything. Over the past two months, we saw a number of lawns and landscape beds dug up as fox, raccoons, skunks, and dogs searched for and feasted on the nymphs laying just below the surface of the ground (4-8”) waiting to emerge when the soil hit 64 °F. Over the last week, there have been massive numbers of cicadas emerging (see the Cicada Update). Coincident with this, are numerous reports, videos and images of [predators eating cicadas](#). Birds are a major group of predators that eat cicadas. I have seen or people have sent images of pileated woodpeckers, grackles, fly catchers, chickadees, sparrows, mocking birds, and a hawk feeding her young. I am sure there are more. Periodical cicadas are a banquet for many species of birds, resulting in larger clutches of eggs, shorter inter-clutch intervals, higher nestling body mass, and higher fledgling success during the emergence year of periodical cicada. If you see and / or have images of birds eating cicadas, please [report birds feeding on cicadas at this link](#). Squirrels seem to be another voracious predator. A colleague reported watching squirrels on a tree in their yard from 7:00 a.m. to 1:00 p.m. eating cicadas non-stop. Other small mammals such as foxes, raccoons, possum, and non-mammals such as turtles and fish (when they land in water) readily feast on cicadas. Other arthropods will feed on cicadas such as predatory stink bugs, and I have seen carpenter ants feasting on numerous cicadas that did not complete their molt to adulthood successfully. There are also all the pets, dogs and cats, that go a little crazy eating cicadas. It is not a problem if your pet eats cicadas, they are not toxic or poisonous, but they should not eat too many or they might end up with digestive issues. Many humans are consuming cicadas too. Entomophagy (insects as food) has long been



A grackle feeding on a cicada.
Photo: D.S. Gruner, UMD



Squirrels spent hours munching down cicadas on this tree.
Photo: D.S. Gruner, UMD

popular in other countries but has been slow to catch on in the U.S. even though they are high in protein and other nutrients and more sustainable to produce than many foods. Mike Raupp (UMD) and I baked a batch of cicada emergence cookies this week. Cicadas are emerging from the ground so it seemed the appropriate time. The cookies have been a big hit. Check out the [Cicada-licious Cookbook](#) (created by Jenna Jadin, a former UMD Entomology graduate student during the 2004 emergence) for the recipe. Besides the emergence cookies, there are recipes for cicada dumplings, cicada stir-fry, El Chirper tacos, and more.

It is amazing that with so many predators eating cicadas that they continue to exist. Fortunately, millions of years of evolution has fine-tuned their predator satiation defense!



Buddy is deciding if he wants to go for a cicada snack or not.
Photo: P.M. Shrewsbury, UMD



Cicadas are emerging from the ground, so it seems appropriate to bake cicada emergence cookies (recipe from the [Cicada-licious Cookbook](#)).
Photo: P.M. Shrewsbury, UMD

Weed of the Week

By: Chuck Schuster

Temperatures are heating up this week. Cicadas have emerged in small numbers in Glenwood in Howard County. Moisture is starting to become an issue in some soils.

Pineapple-weed, *Matricaria matricarioides*, is a summer annual that is found in turf, landscape, and nursery settings throughout the United States. This weed has leaves without hairs that are finely divided into narrow segments, alternate, and arise from stems attached to the taproot. When crushed, the plants emit a pineapple-like odor, which is one of the reasons it has the common name. Yellow to greenish yellow cone-shaped flowers are produced on the ends of short peduncles (flower stems) and are between one quarter and one half inch in diameter. The petals of the flower are very hard to distinguish. Stems will be hairless and grow up to sixteen inches in height. Pineapple-weed reproduces through seed. This plant is very similar to mayweed chamomile or dogfennel, yet neither of these species emits the pineapple-like odor when the plant is crushed.



Pineapple weed reproduces by seed
Photo: J. G. Warfield

No known cultural controls have been noted for this plant. It will tolerate close mowing. It prefers a compacted soil, and seems to thrive when the desired species of turf do not. Improve overall fertility of the turf setting. Pre emergent herbicides containing, dithiopyr (Dimension), flumioxazin (Broadstar/SureGuard) and napropamide (Devrinol) work well in turf, and products containing isoxzben work well in the landscape setting; broadleaf post emergent herbicides (2,4-D and dicamba) will control pineapple weed in turf. Post emergent products containing glyphosate will control this weed as well as Prizefighter, Pulverize and Burnout without much difficulty when applied to actively growing plants.

Plant of the Week

By: Ginny Rosenkranz

Aesculus pavia or red buckeye is a lovely native that can be grown as a deciduous shrub or a small tree. It can grow 10-20 feet high in a rounded top silhouette and the palmately compound, shiny dark green leaves are often the first to emerge in the spring. In mid-May or early June, the plant produces 4-10 inch long panicles that hold bright red to red-orange tubular flowers that attract our native ruby-throated hummingbirds. To



The flowers of *Aesculus pavia* (red buckeye) attract hummingbirds

Photos: Ginny Rosenkranz, UME

keep the plants looking their best, they should be planted in moist soil in full sun to partial shade. The further south they are planted, the more reason that the red buckeye should be planted to receive afternoon shade. After the flowers are done, the plant produces smooth light brown rounded seed capsules that hold 1 to 2 lustrous brown seeds that ripen in the fall, but are poisonous and are avoided by most wildlife. *Aesculus pavia* is cold hardy from USDA zones 4-8 and possibly because they are among the first to leaf out, they are among the first to lose their leaves in September, dropping the leaves without much fall coloring.

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 363 DD (Cumberland) to DD 672 (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.

- Lilac borer – adult emergence (350 DD)
- Hemlock woolly adelgid – egg hatch 2nd gen (411 DD)
- Basswood lace bug – adult/nymph (415 DD)
- Emerald ash borer – adult emergence (421 DD)
- Fourlined plant bug – egg hatch (435 DD)
- Lesser peachtree borer – adult emergence 1st gen (468 DD)
- Maskell scale – egg hatch / crawlers 1st gen (470 DD)
- Oystershell scale – egg hatch / crawlers 1st gen (486 DD)
- Gypsy moth – egg hatch (492 DD)
- White prunicola scale 1st gen – egg hatch / crawlers (513 DD)
- Euonymus scale – egg hatch / crawlers (522 DD)
- Bagworm – egg hatch (602 DD)
- Cottony camellia/Taxus scale – egg hatch / crawlers (649 DD)
- Juniper scale – egg hatch / crawlers (694 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 May 19)

Aberdeen (KAPG)	380
Annapolis Naval Academy (KNAK)	528
Baltimore, MD (KBWI)	550
Bowie, MD	594
College Park (KCGS)	460
Dulles Airport (KIAD)	496
Ft. Belvoir, VA (KDA)	516
Frederick (KFDK)	456
Gaithersburg (KGAI)	466
Greater Cumberland Reg (KCBE)	363
Martinsburg, WV (KMRB)	383
Natl Arboretum/Reagan Natl (KDCA)	672
Salisbury/Ocean City (KSBY)	560
St. Mary’s City (Patuxent NRB KNHK)	599
Westminster (KDMW)	551

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 (CDC guidelines for Covid-19 may cause changes to the programs below.)

[Pest Management Recertification Program](#) (limited in-person program)

June 3, 2021

Location: Carroll Community College, Westminster, MD

June On-line IPM Scout Training (June 2, 9, 16, and 23 from 12 to 1:30 P.M.)

Registration Link: https://mnlga.memberclicks.net/IPMScoutTraining#

[Program agenda](#)

Eastern Shore Procrastinators Pesticide Conference on June 8, 2021

<https://www.eventbrite.com/e/2021-eastern-shore-procrastinators-pesticide-conference-tickets-150763609013>

Once the attendees pay via eventbrite, they will be emailed the link to the zoom conference.

Greenhouse Program (limited in-person program)

July 8, 2021

Location: Catoctin Mountain Growers, Keymar, MD

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