

Commercial Horticulture

July 10, 2020

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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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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)

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Japanese Beetles – Summary of Activity in Early July

By: Stanton Gill

Here is a summary of areas reporting Japanese beetle activity in July of 2020. Some places are blessed with tons of beetle this season while others are not.

Central Maryland:

Reports from Nancy, Lynn and Janet – high populations in Ashton, Olney, and Woodbine areas – Howard County and Montgomery County

Frederick area is reporting healthy populations of Japanese beetle adults but many of the nurseries are applying materials to keep numbers suppressed.

Robert Mulloy of Potomac in Montgomery County reports heavy activity

Kevin Nickle, Scientific Plant Service, report lots of activity in Howard County and Baltimore County.

David Clement, HGIC, reports heavy feeding of Japanese beetles in the Finksburg area of Carroll County. He found them feeding heavily on basil plants.

Eastern Shore:

Kate Kernan, Green Thumb Gardens, in Winchester County reports: "I see them on every job I go to (all local in my county), feeding on numerous ornamental trees and roses, mostly. In my yard alone they're feeding on several different roses, a black diamond crape myrtle, cannas, 4 o'clocks, sunflowers, chamomile, pole beans, primrose, oakleaf hydrangea, zinnias, raspberries and hyssop." John Murphy reported that beetles have been out for about a week at moderate levels on the upper Eastern Shore. John also noted that Japanese beetles are at high levels in Dover, DE.

Southern Maryland:

Ben Beale, Extension Educator in St. Mary's reports: "I would estimate we have medium pressure this year. They are present on all the typical landscape plants-roses, hibiscus, etc... Also starting to require treatment in some vegetable fields and grapes. They are also present and required treatment in several broadleaf tobacco fields."

Northern Delaware:

Claire Porterfield, retired from MNPPC, reports: "Here in Delaware I have Japanese beetles on almost everything! It's a feeding frenzy out there."

Control Options for Japanese beetles:

For organic growers try organic formulations of Azadirachtin (neem extract) which acts as a repellent for 2 or 3 days. Btg – *Bacillus thuringiensis galleriae* made by Phyllo company of CA has given us good control for 3 -5 DAT (days after application) at the high rate. Systemic insecticides that work well include Mainspring, Acelepryn (both at 8 oz/100 gal rates has given us 10-14 days of control), and Acephate.



Japanese beetles are causing heavy damage on some trees this month

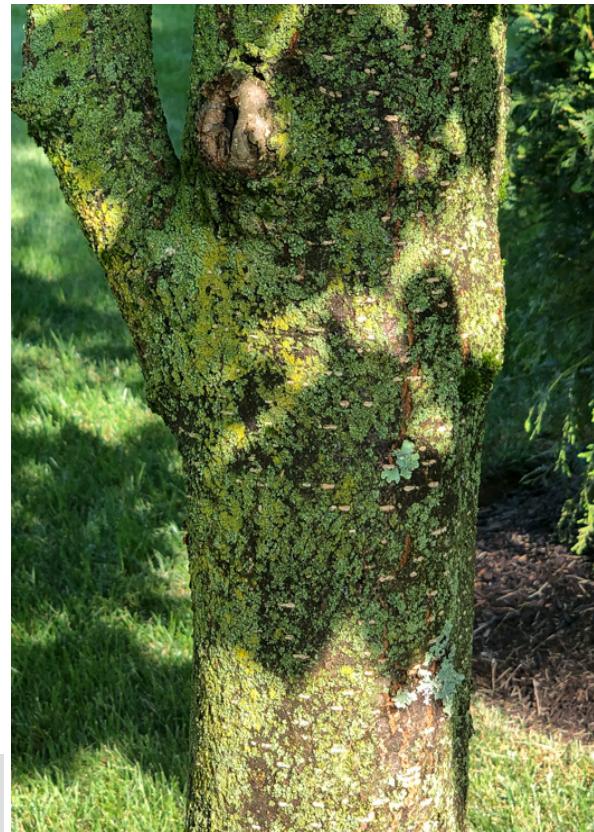
Photo: Kevin Nickle, Scientific Plant Service

Lichen on Tree Trunks

By: Stanton Gill

Mark Schlossberg, ProLawn Plus, Inc., sent in pictures this week of a tree trunk covered in lichen. Your customers may be upset seeing this growing on the trunks of trees in their landscapes, but it is harmless. Lichen pictures are sent in each season to us at CMREC. They are on the surface of the bark and do not penetrate the tree. They thrive if the part of the landscape has poor air circulation and high humidity around the trunk of the tree.

Note: There is an article on lichen by Andrew Ristvey in the [August 30, 2013 IPM Report](#).



Lichen growing on the trunk of a tree
Photo: Mark Schlossberg, ProLawn Plus, Inc.

Cercospora Leaf Spot on Landscape Roses

By: Rachel Ross & Karen Rane, UMD

Cercospora leaf spot (CLS) is a fungal disease of roses caused by the pathogen *Cercospora rosicola*. Landscape roses that are resistant to black spot are often susceptible to this leaf spot disease. Prolonged periods of warm, humid weather encourage disease development. Symptoms first appear on the lower leaves as small maroon to dark purple lesions. These symptoms will progress from the base of the plant toward the growing tips.

Older lesions tend to display a necrotic center with a purple border (Fig. 1 and 2). Lesions typically have even margins, unlike the feathered or irregular lesions of black spot, another common disease of roses.

Proper sanitation methods can help reduce the impact of this disease. Removal of infected and fallen tissue will reduce inoculum present for re-infection. Avoid overhead irrigation and increase plant spacing in order to improve air circulation and limit free moisture on foliage. Prune only when plant tissue is dry. For commercial applications, fungicides labeled for CLS include azoxystrobin (Heritage), propiconazole (Banner Maxx) and mancozeb (Dithane and others). Be sure to always follow label instructions for fungicide applications and rotate products with differing modes of action to reduce risk of resistance.



Fig.1: Lesions on rose caused by CLS.
Note the dark border with gray center
Photo: Florida Division of Plant Industry, Florida Department of Agriculture and Consumer Services, Bugwood.org



Fig. 2 Close-up of Cercospora lesions.
Photo: Paul Bachi, University of Kentucky Research and Education Center, Bugwood.org

Bagworms

Bagworms continue feeding this week. Elaine Menegon, Good's Tree and Lawn Care, found them starting to cause damage on trees in Duncannon, PA. Good control options for early instars include Bt (usually the least expensive choice) and Spinosad. Later in the season, materials such as Acelepryn or Mainspring are very effective, though more costly.



Bagworms are causing damage to trees in Duncannon, PA
Photo: Elaine Menegon, Good's Tree and Lawn Care

European Elm Bark Scale

By: Stanton Gill

Heather Zindash, IPM Scout, sent in these pictures of an interesting scale called the European elm bark scale, *Gossyparia spuria*. This is a type of Eriococcid scale. Like the soft scales, this scale produces copious amounts of honeydew. Heather took a nice picture of a female, a crawler, and settled 1st instar stage of the scale. Usually, we see first instars in early June, but the cool, wet spring delayed egg hatch until early July. She found it on a hybrid elm in Washington D.C. This scale is usually just on elms, *Ulmus* spp. but can be on Zelkova trees, which have been the replacement for many elms over the last 30 years. This scale overwinters as second instars. Immature stages feed on bark or the underside of leaves. The ones that feed on leaves migrate to bark in the fall. The insect has one generation per year.



An adult female European elm scale

Photo: Heather Zindash, IPM Scout

Distance or Talus (IGRs) will work well on this scale at this time of the summer.



A European elm scale crawler (left) and a settled first instar (right)
Photos: Heather Zindash, IPM Scout

Peachtree Borer Activity

By: Stanton Gill

We continue to pull in high numbers of male peachtree borer this week in our pheromone baited traps in the Brookeville area. Make sure susceptible cherry, plum, peach and cherry laurel plants are protected.



A container-grown ornamental cherry damaged by main peachtree borer

Lightning Damage

Jim McWilliams, Maxalea, Inc., sent in photos of lightning damage to a sweet gum tree that occurred Monday night in Baltimore County. Jim noted that this tree is being removed by the homeowners' association.



Lightning damage on a sweet gum tree

Photos: Jim McWilliams, Inc.

Red Thread

Mark Schlossberg, ProLawn Plus, Inc., is reporting that red thread won't let up this season. Mark found red thread in turf in Owings Mills on July 6. For more information on red thread, see the article by Joseph Roberts in the [May 10, 2019 IPM Report](#).



Red thread infection in turf is still occurring in Owings Mills this month

Photo: Mark Schlossberg, ProLawn Plus, Inc.

Redheaded Flea Beetle Activity

By: Stanton Gill

Shimat Villanasery Joseph and JC Juang-Horng, Georgia University Extension, put together a working group of University Extension people to attack the rising redheaded flea beetle problem in nurseries. Brian Kunkel (University of Delaware Extension) and I met with the southern nursery flea beetle working group on Tuesday morning, via Zoom, to look at what we all know about this pest so far.

Our zoom meeting was to determine priorities on what research we need to defeat this emerging nursery insect pest. It has been a big problem in nurseries to our south for several years but has moved up into and established in Maryland and Delaware. It has been reported in New York State. Our working group had reports of activity in the mid-west in container nurseries.

Several materials are being tested for a temporary fix for this insect. The big problem is the larvae migrate out of pots when placed in for treatment evaluation making larval counts very difficult. This makes the accuracy of the results difficult to analyze. Chemical applications are just a short-term solution, at best. We need to examine what practices in the nursery are encouraging this insect to build up. Factors such as watering practices and fertility management may be playing into the rise of this insect as a problem. There is basic life cycle information and degree day models that we need to develop to help growers deal with this pest. Southern magnolia and *Ilex verticillata* are in bloom this week in Maryland. These species are good indicator plants for adult emergence of redheaded flea beetle. So, monitor for adults this week in container nurseries.

We know these flea beetles are a problem on container grown plants and not a real problem in field grown nursery plants. *Itea* is a favored host and usually the first plant on which nursery operators find it. Certain hydrangea cultivars appear to be very attractive to this pest. In our zoom meeting on Tuesday, several nursery operators told us they had *Hydrangea paniculata* growing next to *H. macrophylla*. The *H. paniculata* plants were damaged while the *H. macrophylla* plants really were not damaged growing next to the susceptible plants. They found 'Limelight' and 'Quickfire' are very susceptible to flea beetle damage. Perennial salvia is being hit hard by this insect. Holly 'China Girl' and forsythia are also hit heavily by this beetle. Several nursery growers in the southeast report Weigela 'Spilt Wine' and 'Wine and Roses' is highly susceptible to redheaded flea beetle damage.

In surveying weeds near a nursery, it has been found feeding on dog fennel, pigweed, and knotweed. Keeping these weeds down near the nursery is very important.

Our group of University and Extension specialists will be developing a list of the most susceptible species and cultivars. If you are a nursery grower and see cultivars that are being damaged heavily by this flea beetle, please send me an email at Sgill@umd.edu.

If you see redheaded flea beetle, please fill out [a short online survey](#) so we can design out Extension outreach and research efforts.



Brian Kunkel

Redheaded flea beetles are becoming an increasing

problem on some container grown nursery plants

Photo: Brian Kunkel, University of Delaware Extension

Wavy-lined Heterocampa Caterpillar

Nancy Woods, MNCPPC, found a wavy-lined Heterocampa caterpillar, *Heterocampa biundata*, on July 5. This species has a wide woody host plant range.



The wavy-lined Heterocampa is one of the more commonly found prominent caterpillars in the area.

Photo: Nancy Woods, MNCPPC

Gloomy Scale

Heather Zindash, IPM Scout, found gloomy scale and crawlers (or just about to be) on red maple in DC. Look closely at the bark for the raised covers of this scale. Control options include Talus or Distance at the crawler stage.



Check gloomy scale infestations to determine if crawlers are active

Photos: Heather Zindash, IPM Scout

Growth Regulators in the Landscape - Revisited

A visit to the site featured in last week's article on the growth regulator product Trimtect has provided a better view of issues on this site. While the Trimtect rate used was significantly above the labeled rate for several of the plant species treated, resulting in undesirable stunting of foliage and flowers of sensitive species like hydrangea and aucuba (Figure 1), the issue was applicator error, not the product itself. The leaf necrosis (browning) observed on several plants, such as rhododendron, was most likely related to environmental stress factors present on the site. With careful attention to rates and plant species, growth regulator products such as Trimtect can be useful tools for landscape managers, reducing labor costs for pruning.



Figure 1. Aucuba with small terminal leaves due to excessive rate of Trimtect

Photo: Mark Lucas, Rainbow Tree Care

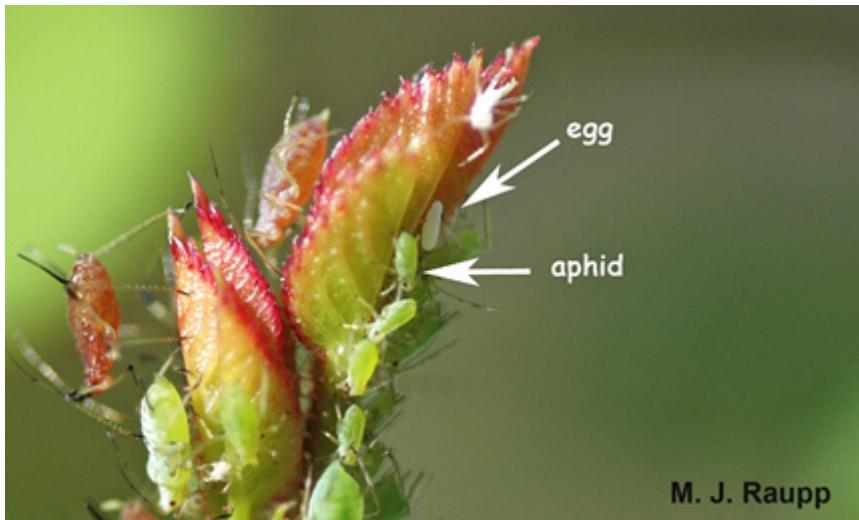
Beneficial of the Week

By: Paula Shrewsbury

Are they bees or flies buzzing around my flowers?

Here we are in the middle of summer with lots of plants in flower. As you are observing flowering plants, you will see many omnivorous natural enemies on the flowers feeding on nectar and pollen and pollinating plants. One of the more common beneficials on flowers are syrphid fly adults. Syrphid flies, also known as flower or hover flies, are beneficial insects in the order Diptera (true flies) and the family Syrphidae. There are more than 6,000 named species of syrphid flies with about 900 species in North America.

Syrphid flies have interesting biologies. For example, although they are true flies, as adults they mimic bees and wasps, with most



M. J. Raupp

Little do these aphids know that death is near when the syrphid larva hatches out of its egg.

Photo: M.J. Raupp, UMD

species having yellow and black stripes. So the question arises: *If you are a fly why would you want to look like a bee?* Many bees have stingers, which they use as a defense when threatened. Predators have “learned” that bees can sting and are less likely to try and eat them. Fly adults are defenseless (no stingers) so by looking like a bee, syrphid flies reduce their likelihood of being eaten. Evolution is great! Syrphid fly adults also behave like bees. They are pollinators and feed on the nectar and pollen of flowers. They commonly visit flowers and display a characteristic flight pattern where they hover over flowers and can quickly change their direction, hence their common names of hover or flower fly. The size of adult syrphid flies can range from 3-13 mm. To determine if you are looking at a bee or a fly that mimics a bee, the most obvious diagnostic characteristic is the number of wings. Fly adults have one pair of wings, whereas bees have two pair of wings. Also in place of the second pair of wings, flies have halteres. Halteres are a pair of small, clubbed structures found just behind the first pair of wings and they are usually a light white to yellow color. Their large eyes and short antennae also help in identifying syrphids.

There are several generations of syrphids a year. Life stages include the egg stage, 3 larval instars, pupa, and adults. Syrphid fly adults are not predacious, they only [feed on nectar and pollen](#) and are considered important pollinators for some plants. In fact, they must feed on floral resources to obtain the nutrients they need to make eggs and produce young. The larval stage of syrphid flies are the predacious stage and they are generalists feeding on a diversity of soft-bodied insects. Syrphid fly adult females cue in on branches infested with potential food for their larvae. The adult female will lay small white eggs individually on the leaves or buds of these infested plants. Once the eggs hatch, the legless maggot-like larva search for and voraciously consume prey items. Larvae vary in size (4-18 mm) and color patterns (yellow, pink, green, or brown with yellow or white markings) depending on life stage and species. The body tapers at one end and it is this “pointed” end that is the head end where the feeding on prey business is done. The larvae have hook-like mouthparts that they jab into their prey and work back and forth to assist in the feeding process. Syrphid fly larvae are important generalist predators that help to suppress many small soft-bodied insects such as aphids, spider mites, thrips, small caterpillars and other prey. If you have plants infested with aphids, within a short time period you will have [syrphid fly larvae snacking on the aphids](#). A single syrphid larva can consume about 400 aphids in its lifetime. Since adults feed on nectar and pollen, be sure to provide flowering plants to attract and support syrphids and other omnivorous natural enemies.



Syrphid fly larvae are voracious generalist predators that feed on aphids, mites, and other small insects.

Photo: P.M. Shrewsbury, UMD



Syrphid flies feed on nectar and pollen when they are adults. Note the diagnostic one pair of wings, large eyes, and short antennae on this true fly that mimics bees.

Photo: P. M. Shrewsbury, UMD

Weed of the Week

By: Chuck Schuster

Hot conditions exist throughout the region. Moisture has been limited in many areas while others have received some moisture. Soil temperatures most days start near 72 °F and many days have reached the mid 80 °F range. These temperatures have certainly helped end the season on many of last fall's germinating weeds like chickweed.

As one travels this weeks 'Weed of the Week' can be seen in many areas showing itself along the sides of roads, protected by guide/guard rails, and in areas of forest margins. Common mullein, *Verbascum thapsus*, is a biennial weed found in many locations, including landscapes and nurseries, throughout much of the United States. This plant is native to Europe, northern Africa, and Asia. This weed was introduced into the United States for its medicinal purposes, but no claims are made to the effectiveness of it. The plant may cause skin irritation to some. The seeds contain the insecticide and fish poison rotenone.

The leaves of common mullein develop as a prostrate growing basal rosette during the first year. During the second year the stem will develop with leaves growing alternately along the tall flowering stem. Leaves are covered with a fine hair, larger near the base of the plant, up to eighteen inches in length, and have an elliptical shape. Leaves become progressively smaller moving up the stem. The stem will develop during the second year of growth and may reach up to ten feet in height. The unbranched stem will also be covered with fine wool-like hair. Common mullein has a deep taproot with fibrous roots developing from it. Flowers develop at the end of the flowering stem, are yellow or pale white in color, and have five petals with a total diameter up to one inch. This weed produces many flowers on the upper section of the stem, which are evident at this time of year. The fruit of common mullein are found in downy capsules that are round and about 1/4 inch in diameter. Similar to moth mullein, but moth mullein is smaller and does not have the hairs on the leaves. The hairy leaves and stems can cause a contact dermatitis on some individuals.

Control of common mullein can be obtained using several techniques. Prevent bare soil exposure. In turf; a dense tall turf will be an excellent first line of defense. Mowing will prevent common mullein from maturing. Hand pulling can be done effectively during the first year but is time consuming. Mowing during the bolting to early flowering stage will reduce seed production. The use of a European weevil, *Gymnaetron tetrum*, has been evaluated by the USDA and has demonstrated to be an effective method to limit common mullein as the weevil larvae will mature within the seed capsule which results in destruction of up to 50% of the seeds. In landscape settings, mulch does an excellent job as a first line of defense. Finely ground mulch can be damp enough that seed that comes in contact with the mulch may germinate in wet years. The hairs on the leaves and stems of common mullein can make it difficult to get good coverage with an herbicide. Use of an appropriate surfactant is necessary to be successful. Use a 2% solution of glyphosate or triclopyr with enough coverage to wet all the leaves. Avoid runoff if possible as glyphosate will kill whatever it contacts. Prizefighter has been demonstrated to slow the progression of growth and with repeated applications (2-3) will prevent seed production.



Common mullein leaves are covered with fine hairs
Photo: Chuck Schuster

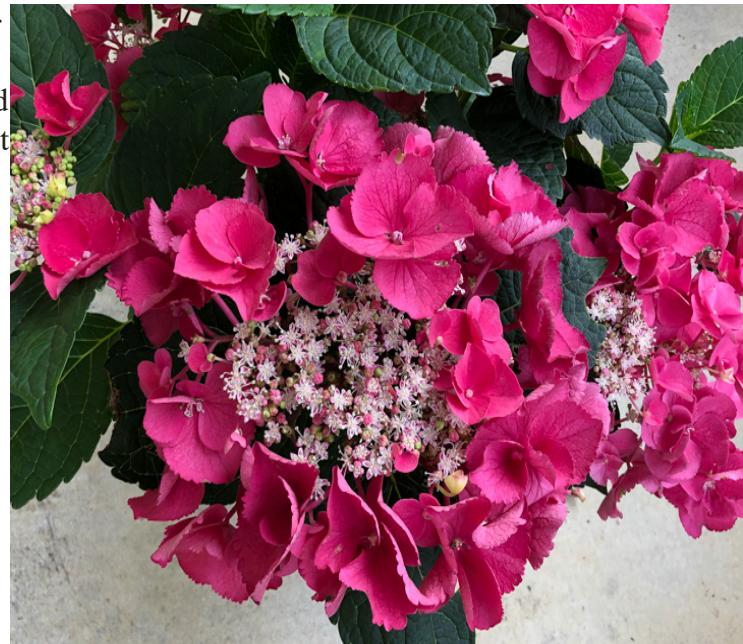


Common mullein in flower
UMD-IPMnet

Plant of the Week

By: Ginny Rosenkranz

Hydrangea macrophylla ‘Cherry Explosion’ is another of the Double Delights™ series, and combines the compact growth habit of reaching only 3-4 feet tall and 3-5 feet wide. Most *H. macrophylla* can grow 6-10 feet tall, so the smaller size makes the beautiful flowering ‘Cherry Explosion’ a wonderful option in a morning sun, small garden or in a container. The large cherry pink outer sterile florets are almost 2 inches across, while the inner circle of fertile light pink flowers look like tiny stars no more than $\frac{1}{2}$ inch across. These lovely lace cap flowers will stay the brilliant cherry pink color if the soil pH is sweetened with an addition of lime, but as the soil pH drops and becomes more acidic, the flowers move toward a lavender color. Plants will flower from June – September, especially if the spent flowers are removed. The length of bloom is due to their ability to bloom on old and new growth. The big dark green leaves of the *H. macrophylla* ‘Cherry Explosion’ are disease resistant and can change in the autumn to burgundy if the cool weather filters in slowly. Plants are hardy from USDA zones 4-9 and need at least 4 hours of morning sun, shade in the afternoon and prefer moist well drained soils. Never allow the soil to dry out totally, and it is always a good idea to add about an inch of mulch around the roots of the shrubs to help maintain soil moisture. They exhibit some susceptibility to bud blight, bacterial wilt, leaf spot, and mildew. Occasionally, aphids will visit the plants.



Hydrangea macrophylla 'Cherry Explosion' reaches 3 -4 feet tall

Photo: Ginny Rosenkranz

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 **1241 DD** (Cumberland) to **1860 DD** (Reagan National). 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.

- Fall webworm – active caterpillar tents 1st gen (1530 DD)
- Pine needle scale – egg hatch / crawlers 2nd gen (1537 DD)
- Green June beetle – adult emergence (1539 DD)
- White prunicola scale – egg hatch / crawlers 2nd gen (1637 DD)
- Obscure scale – egg hatch / crawlers (1774 DD)
- Orangestriped oakworm – egg hatch / early instar (1917 DD)

See the [Pest Predictive Calendar](#) for more information on DD and plant phenological indicators (PPI) to help you better monitor and manage pests.

Degree Days (as of July 8)

Aberdeen (KAPG)	1334
Annapolis Naval Academy (KNAK)	1554
Baltimore, MD (KBWI)	1647
Bowie, MD	1707
College Park (KCGS)	1553
Dulles Airport (KIAD)	1572
Frederick (KFDK)	1544
Ft. Belvoir, VA (KDA)	1661
Gaithersburg (KGAI)	1477
Greater Cumberland Reg (KCBE)	1241
Martinsburg, WV (KMRB)	1368
Natl Arboretum/Reagan Natl (KDCA)	1860
Salisbury/Ocean City (KSBY)	1634
St. Mary's City (Patuxent NRB KNHK)	1779
Westminster (KDMW)	1504

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 calculatorThresholds in: Fahrenheit °F Lower: 50 Upper: 95 Calculation type: simple average/growing dds Start: Jan 1

Hone Your Diagnostic Skills With These Upcoming LCA Webinars

Diagnostics and IPM for Herbaceous Perennials and Annuals in the Landscape

Thursday, July 23 | 10:00 am–11:30 am ET

Karen Rane, David Clement, and Stanton Gill of the University of Maryland Extension will cover disease and insect biology, lifecycle, and control options using IPM methods for herbaceous perennials and annuals in the landscape. This session will improve your diagnostic skills in solving and dealing with problems on herbaceous plant material. An audience interactive question and answer session will be held at the end of the presentation.

Tree Problems—Diagnostic and Solutions

Thursday, August 20 | 10:00 am–11:30 am ET

Karen Rane, David Clement, and Stanton Gill of the University of Maryland Extension will cover diagnostic skill building for dealing with major tree problems caused by physiological conditions, disease, and insects. Participants will learn the steps in diagnosing tree problems. The team will cover major current tree problems in 2020 in the landscape and what you do to control these diseases and pests using IPM methods based on our and other university research efforts. An audience interactive question and answer session will be held at the end of the presentation.

Go to <https://www.lcamddcva.org/> to register

Climate and Sustainability Webinars, 2020

Dr. Sara Via, Professor & Climate Extension Specialist, University of Maryland, College Park

Every other Wednesday, June 17 – Aug. 26, 3:30pm

Upcoming Programs:

July 15, 2020 Regenerative landscaping

July 29, 2020 What can the pandemic teach us about being (un)prepared for climate change and other global disasters?

Aug. 12, 2020 The power of individual choice: what can individuals do to combat climate change and how much difference will it make?

Aug. 26, 2020 Climate change is bad for your health

See the brochure for more information and a link to register.

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