UNIVERSITY OF MARYLAND EXTENSION

TPM/IPM Weekly Report
for Arborists, Landscape Managers & Nursery Managers

Commercial Horticulture **August 16, 2019**

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Pest Predictive Calendar

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 sklick@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 (Extension Educator, Montgomery County)
Cultural Information: Ginny Rosenkranz (Extension Educator, Wicomico/Worcester/Somerset Counties)
Fertility Management: Andrew Ristvey (Extension Specialist, Wye Research & Education Center)
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Deer Active In August

By: Stanton Gill

The sunny days with cool nights have increased deer activity in the last week. I see them everywhere in the evening and morning wandering near roads and grazing on people's lawns. Watch out since they are migrating into roadways, and we are seeing an increasing number laying on the side of the road after run-in with trucks and cars. Increased browsing damage is being reported by several landscapers in August.

Deer were browsing on this sedum which is not normal food for them
Photo: Mark Schlossberg, ProLawn Plus, Inc.

Commercial Cut Flower Growers Seminar

By: Stanton Gill

We have had a growing number of cut flower operations opening up in Maryland over the last couple of years. We are organizing a one day tour and field seminar on commercial cut flower production on September 10, 2019. We will be visiting **Cool Hollow Flower Farm (Hagerstown)** and **Surreybrooke Farm (Middletown)** to tour their operations. We will have a series of seminar topics in the afternoon at Surreybrooke Farm.

European Hornets Active in mid-August on Lilac

By: Stanton Gill

The emails are starting to come in asking about how to prevent European hornets from stripping bark off lilac and birch trees. The European hornet, *Vespa crabro*, is the largest hornet from Europe. It was introduced into the United States back in the 1800s and is well established across the United States. During one of our national entomological meetings in Colorado, we visited a butterfly display. The European hornets had moved in and were decimating the caterpillars and adults of several of the butterflies. They can be rather aggressive in this manner. Two weeks ago Peter Adams sent in a picture of a European hornet feasting on a swallowtail adult. The swallowtail had landed on an over-ripe fig that had burst open. While the butterfly was feeding, the European hornet nailed it and had a meal.

This giant hornet is known for making intricate paper-like nests out of surrounding plant materials and other fibers. Here in Maryland, they like to strip bark off lilac and river birch in August and September. They often build their nest in soffits or attics of houses.

Most nursery mangers spray the trunks of impacted trees with synthetic pyrethroids. A non-chemical control can be using baited funnel traps to attract in the wasp and capture them and then disposing of them. The European hornet seems to like stripping bark from large branched lilac. After the lilacs bloom, you can renewal prune them and force out younger wood. It usually takes two years before this wood produces flowers, but this pruning will keep the stems smaller and less attractive to European hornets.

A European hornet is stripping bark off a buddleia (left) and one has captured a bumble bee (above)

Two Late Season Oak Problems

By: Karen Rane

Two diseases of oak trees are commonly observed in late summer – bacterial leaf scorch and Tubakia leaf spot. Bacterial leaf scorch (BLS), caused by the xylem-inhabiting bacterium *Xylella fastidiosa*, causes leaves to develop brown leaf margins, often with a yellow or reddish "halo" between the brown and green leaf tissue (Figures 1 and 2). The disease is common on pin oak and red oak, but can also affect sycamore, elm, sweetgum and mulberry. Branch dieback occurs one to four years after initial leaf symptoms. The bacterium overwinters in infected trees and several weed species, and is introduced to the water conducting tissue by leafhoppers. There is no cure for an infected tree. Cultural practices that maintain tree vigor and reduce root stress issues can help slow the pace of symptom development. Symptoms of BLS can mimic leaf scorch from drought, root damage or other abiotic stress factors, but there are lab tests that can detect Xylella in symptomatic foliage. The best sample for diagnosis consists of small branches that have several symptomatic leaves still attached. Check out the UMD Plant Diagnostic Lab website at http://extension.umd.edu/plantdiagnosticlab for sample submission forms and contact information.

Tubakia leaf spot is a common late season disease, primarily found on species in the red oak group (Figure 3). The fungus causes dark brown or reddish brown leaf spots of variable sizes scattered across the leaf surface. Although the symptoms may be quite obvious, the disease usually has no significant effect on the overall health of infected trees, and chemical management is not recommended.

Figure 1. Bacterial leaf scorch on pin oak. Photo: John Hartman, University of Kentucky, Bugwood.org

Figure 2. Closeup of pin oak leaf infected with *Xylella fastidiosa* showing dark banding between healthy and necrotic tissue. Photo: John Hartman, University of Kentucky, Bugwood.org

Figure 3. Tubakia leaf spot on red oak. Photo: Paul Bachi, University of Kentucky Research and Education Center, Bugwood.org

Caterpillar Activity

Marie Rojas, IPM Scout, is still finding high numbers of orange-striped oakworm caterpillars feeding heavily on *Quercus phellos*, *Q. rubra*, *Q. imbricaria*, *Q. macrocarpa*, *Q. coccinea* and *Q. palustris* in Gaithersburg. Marie is also reporting that fall webworms continue to hatch out on *Ulmus* 'Jefferson', *Parrotia* 'Vanessa', *Liquidambar* 'Happidaze' and 'Gold Beacon'. Many people are reporting activity by various species of tussock moth caterpillars this week. Linda Barker, Halcyon Landscapes, noted that "lots of caterpillars mean fat and happy birds".

Banded tussock moth caterpillar is feeding on *Betula nigra* 'BNMTF' (Dura Heat River Birch)
Photo: Marie Rojas, IPM Scout

Caterpillars, like this tussock moth species, can be found on places such as siding of houses when searching for a place to pupate
Photo: Kevin Wengernuk, KW Landscaping

Here is a polyphemus moth that Elaine Menegon found on spruce in Hershey, PA. Its large green caterpillars are also active at this time of year. Ginny Rosenkranz found a coccoon from which this species emerged this week.
Photo: Elaine Menegon, Good's Tree and Lawn Care

Blister Beetles

Kevin Wengernuk, KW Landscaping Inc., found blister beetles devouring a cluster of devil's walking sticks in Severn this week. Blister beetles have chewing mouthparts that they use to feed on flowers and foliage. Blister beetles feed on a wide variety of crops including alfalfa, ornamental plants, potatoes, soybeans, and garden vegetables. Immature stages feed on grasshopper eggs and other ground dwelling insects such as solitary bees. Care should be taken to not handle them because they produce canthararadin which causes a painful blister. Never handle blister beetles preserved in alcohol because the cantharadin dissolves in alcohol and will cause blisters on the skin. Adults usually occur in loose groups or swarms that feed on leaves of certain plants. Blister beetles are highly toxic to animals, especially horses.

Control: Fortunately even though they tend to swarm into an area, blister beetles only hang around for a week or so before moving on. Neem products should act as a repellent. Permethrin or Acephate gives control.

This blister beetle is feeding on devil's walking stick
Photo: Kevin Wengernuk, KW Landscaping Inc.

Tuliptree Scale

Marie Rojas, IPM Scout, is finding tuliptree scale females on *Liriodendron tulipifera*. In August, female scales will start to swell up and produce large amounts of honeydew. Look for black crawlers to time control measures.

Look for black tuliptree scale crawlers as we move into September

Aphids

Marie Rojas, is finding aphids feeding on the undersides of oak leaves, along the midribs and veins, causing cupping. They are feeding on *Quercus coccinea* and *Quercus bicolor*. Marie noted that there were lady bird beetle adults and larvae present.

A lady bird beetle larva is feeding on aphids on this oak
Photo: Marie Rojas, IPM Scout

Oak Lace Bugs

Marie Rojas, IPM Scout, found oak lace bugs feeding on the undersides of the leaves of multiple oak species, including *Quercus* 'Skinny Genes' and *Q*. 'Pringreen'. Marie noted that there were a lot of lacewing eggs present on the leaves.

Oak lace bugs have caused significant damage to this oak; lacewing eggs were present
Photo: Marie Rojas, IPM Scout

Harlequin Bugs

Ralph Rack found harlequin bugs this week in Virginia. They pierce plant foliage, making the foliage stippled and bleached. Harlequin bugs are generalist feeds and are commonly found on snapdragon, obedient plant, cleome, salvia, and cabbage and kale. Weeds like pigweed, mustards, and lambsquarter are also plant hosts.
Control: Harlequin bugs overwinter as adults in plant debris so good sanitation can help reduce populations the following year. Insecticidal soaps or oils targeting the nymphs are good controls and have low impact on the environment. Other options include azadirachtin (e.g. Neem), acephate (e.g. Orthene), and synthetic pyrethroids.

Look for adult harlequins feeding on a variety of plants
Photo: Ralph Rack

Harlequin bug nymphs are also active now

Squirrel Management

Melissa Sharifi, Colonial Williamsburg Foundation, sent an email listing a few ways they deal with squirrels:

Give them water-they will eat melons and cucumbers when they do not have fresh water.
Feed them dried corn and peanuts away from the plants you are trying to protect-this has been our biggest success.
Rotate repellants (we generally use repels all granular, rat magic granular, I must garden ready to use spray).
Install tall T-shaped perches for hawks and falcons.
Hire a trapper *(UMD Note: check with state natural resources to find out if squirrels can be moved out of area.)*

Beneficial of the Week

By: Paula Shrewsbury

Digger wasps in abundance! Watch out white grubs!

Last week, Marie Rojas (Borders and Butterflies) shared a video with me of the insect activity on a planting of mountain mint (*Pycnanthemum* sp., likely *muticum*) at her farm. Particularly exciting, and can be seen in the video, was the abundant number of scoliid or digger wasps (specifically *Scolia dubia*, Hymenoptera: Scoliidae) busy feeding on the floral resources provided by mountain mint. This native flowering plant is attractive to a large diversity of pollinators and natural enemies such as bees, wasps, butterflies, and more. It is a great addition to conservation gardens. Note that this plant spreads by rhizomes so you have to keep an eye on it.

Scoliid wasp adults fly over turf grass in search of white grubs in the soil to serve as food for their young.
Photo: Mike Wilder, from http://www.ces.ncsu.edu

Why am I so excited about all these scoliid wasps? Because they help to suppress populations of scarab beetle white grubs and they pollinate flowers (see video by M. Raupp, UMD). There are about 20 species of scoliid wasps in North America. *Scolia dubia* is the common species active in August in MD. They are ~ ¾" in length, have blue-black wings (2 pairs like most Hymenoptera) and black bodies except at the end of the abdomen, which is reddish brown and hairy with two distinct yellow spots. *Scolia dubia* mainly attack scarab grubs of **green June beetle** and **Japanese beetle**. These scarab beetles lay eggs in the soil of turf, garden beds, nursery stock, and grassy fields. Scarab eggs hatch and white grubs are active in the root zone into October. Scoliid wasp adults are most abundant and noticeable during August. Scoliid wasps fly several inches above turf infested with white grubs often in a figure eight pattern. This figure eight flight is a courtship dance used to communicate with and attract mates. When flying over the turf, the female is amazingly able to locate a grub in the soil. She then "digs" her way down to the white grub. Once the grub is located she stabs it with a paralyzing sting. This allows the female scoliid wasp to lay an egg on the underside of the paralyzed

Scoliid wasp adult (*Scolia dubia* shown here) feed on the nectar of a variety of flowering plants.
Photo: Paula Shrewsbury, UMD

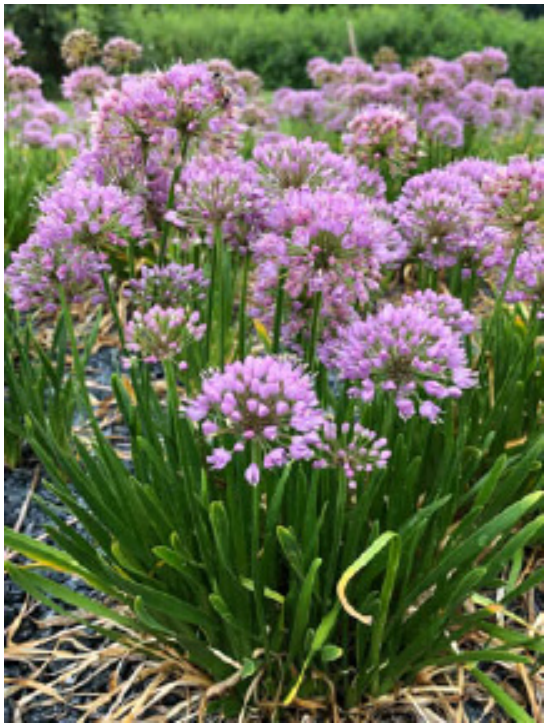
grub. The female will then construct a "cell" in the soil around the grub, the wasp egg hatches, and the not quite dead grub provides "fresh" food for the wasp larvae. Once mature, the wasp larva pupates and passes the winter in the soil within the cell. The wasp will emerge as an adult the next August. Sounds like a pretty slow and nasty death for the grub – but it is part of the circle of life.

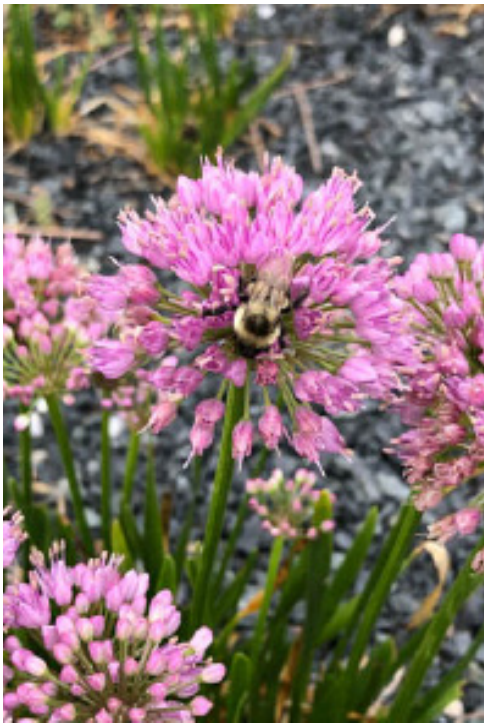
The presence of Scoliid wasps indicates that green June beetle or Japanese beetle white grubs are present in nearby turf and that turf should be monitored for grub abundance and damage. If no damage is notable, let these beautiful wasps do their thing (or sting). Although Scoliid wasps may appear a bit intimidating when first seen in large numbers flying over the turf, they are not aggressive towards humans. Scoliid wasps are beneficial and can make a significant contribution towards suppressing white grub populations, and ultimately damage to turf. In addition, adult scoliid wasps feed on the nectar of a diversity of flowers providing pollination services.

Plant of the Week

By: Ginny Rosenkranz

Allium 'Millenium' is an onion that is used as an ornamental rather than for culinary reasons. Chosen by the Perennial Plant Association as the Plant of the Year in 2018, *Allium* 'Millenium' adds color and fragrance to the late summer garden. It blooms from July to August and is cold tolerant from USDA zones 5-8. It prefers to grow in full sun and is very heat tolerant and tolerant of many soil types, but grows best in sandy soils. *Allium* 'Millenium' is a bulb which develops a stout rhizome that forms clumps that can be dug and divided every 5 years in the spring or fall. The dark shiny green upright foliage is slender, flat and grass-like and grows 6-12 inches tall and in clumps 10-15 inches wide. The flowers are held aloft of the foliage on unbranched scapes or stems that grow 18-20 inches tall. The 2 inch flowers are made up of many tiny bright rose purple florets that are on a rounded umbel. Both the flowers and the foliage have a strong onion smell that could be termed fragrant by many. Despite the strong smell, the flowers attract many pollinators, including bees, butterflies, and hummingbirds. Once the flowers have finished blooming and fade to tan, they can add color and texture to winter gardens. Plants can be used in borders, in mass plantings, on green roofs, in containers, and in cottage gardens. It also can be used as a cut flower. The fragrance does keep deer and rabbits from browsing and is considered almost pest free. In heavy wet soils the bulbs will rot. Occasional problems could include mildew, rust and thrips.





***Allium* 'Millenium' produces rose purple flowers that attract pollinators like this bumble bee**
Photos: 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 2480 DD (Cumberland) to 3373 DD (Annapolis Naval Academy). 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.

Euonymus scale (2nd generation) crawlers to settled crawlers (2235 DD)
Japanese maple scale (2nd generation) crawlers (2508 DD)
Fall webworm (2nd generation) early to late instars (2793 DD)
White prunicola scale (3rd generation) crawlers (3270)
Banded ash clearwing borer adult emergence (3357)
Tuliptree scale crawlers (3519)

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 August 14)

Abingdon (C1620)	2788
Annapolis Naval Academy (KNAK)	3373
Baltimore, MD (KBWI)	3034
College Park (KCGS)	2809
Dulles Airport (KIAD)	2878
Frederick (KFDK)	2892
Ft. Belvoir, VA (KDA)	3007
Gaithersburg (KGAI)	2761
Greater Cumberland Reg (KCBE)	2480
Martinsburg, WV (KMRB)	2646
Natl Arboretum/Reagan Natl (KDCA)	3331
Salisbury/Ocean City (KSBY)	3006
St. Mary's City (Patuxent NRB KNHK)	3191
Westminster (KDMW)	3097

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: 95Calculation type: simple average/growing dds Start: Jan 1

CONFERENCES

September 10, 2019
Commercial Cut Flower Tour
Locations: Cool Hollow Flower Farm and Surreybrooke Flower Farm
Registration information

December 6, 2019
Pest Management Conference
Location: Carroll Community College, Westminster,

December 17, 2019
Biocontrol Conference
Location: Maritime Insitute, Linthicum Heights, MD

Advanced IPM PHC Short Course
Monday, January 6 - Thursday, January 9, 2020
Location: University of Maryland, College Park, MD
Contact: Amy Yaich, Admin. Assist. II, 301-405-3911, umdentomology@umd.edu
Registration Information: https://landscapeipmphc.weebly.com/
Recertification credits will be posted on the website

January 17, 2020
FALCAN Pest Management Conference
Location: Frederick Community College, Frederick, MD

February 13, 2020
2020 Pesticide and Fertilizer Recertification Conference
Location: Rockville, Maryland

February 19 and 20, 2020
Chesapeake Green: A Horticulture Symposium
Location: Maritime Institute, Linthicum Heights, MD

Montgomery College Courses: Taught By Stanton Gill and Chuck Schuster

LNTP 215 Pest Management*, ** 3 semester hours
Hone your pest management skills with **Stanton Gill**. Explore the identification of key pests, their life cycles and control methods, with emphasis on integrated pest management strategies.
Thursday, 6:00 - 9:30 p.m. CRN 22291, CRN 22292 Lab

LNTP 190 Pesticide Use & Safety 2 semester hours (Class ends on Oct. 21)
Prepare for the pesticide application certification exam through a thorough understanding of the principles of pest control, including pesticide labeling, regulations and proper handling. Class taught by **Chuck Schuster**.

For further information about the program or courses, contact Stephen Dubik (240) 567-7803 steve.dubik@montgomerycollege.edu

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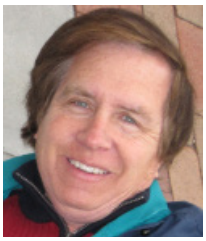
CONTRIBUTORS:



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