UNIVERSITY OF MARYLAND EXTENSION

TPM/IPM Weekly Report

for Arborists, Landscape Managers & Nursery Managers

Commercial Horticulture **September 10, 2021**

In This Issue...

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:
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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)
Design, Layout and Editing: Suzanne Klick (Technician, CMREC)

Fall Armyworm

By: Stanton Gill

We had inquiries about using Mainspring insecticide from Syngenta for fall armyworms if they show up with another generation in late September. We asked Nancy Rechcigl, Syngenta Professional Solutions, for clarification on the rate to apply; Here is Nancy's answer: "A rate of 0.1 floz/1000 ft^2 would work well." A copy of the label is available at https://www.greencastonline.com/current-label/mainspring%20gnl.

Pine Cone Oak Gall

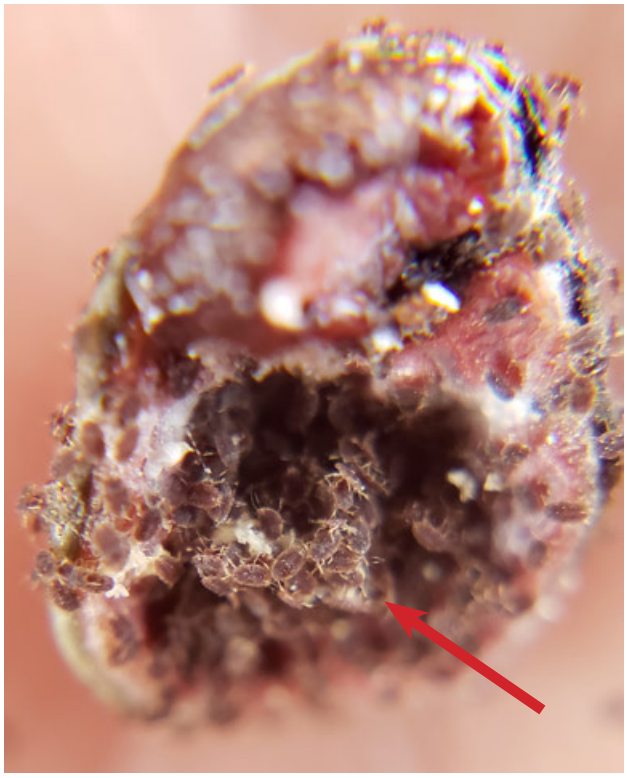
Marie Rojas, IPM Scout, found pine cone oak galls on *Quercus bicolor*. This acorn-looking gall is caused by a tiny cynipid wasp. The galls start out pink and darken to a reddish brown color.

This cluster of acorn-looking galls is caused by a cynipid wasp
Photo: Marie Rojas, IPM Scout

Tuliptree Scale

By: Stanton Gill

Last week in the IPM Alert, we wrote about tuliptree scale. This week, Marie Rojas, IPM Scout, found crawlers starting to hatch under female covers on a tulip tree in Gaithersburg on September 8. Now is a good time to apply Distance or Talus.



If you have an infestaton of tuliptree scale (above), check to see if crawlers (right) have hatched at your location
Photo: Marie Rojas, IPM Scout

Orange-striped Oakworms

Nicholas Shively, JL Tree Service, found orange-striped oakworm caterpillars on a black oak in Burke, VA this week. This native caterpillar feeds on oaks, chestnut, birch, hazel, hickory, and maple. Many caterpillars in the area are the late instar stage and finishing up with feeding and looking for places to pupate. Larvae feed in clusters and initially skeletonize leaves. Larger caterpillars are defoliators and only leave behind the leaf mid-rib. The caterpillars will feed en masse and completely defoliate whole branches. There are predators and parasitoids that feed on these caterpillars. Control is best when caterpillars are in the early instar stage. Control options inlcude Bt, Spinosad, Acelepryn, and Mainspring.

These mid instar orange-striped oakworms are feeding on a black oak
Photo: Nicholas Shively, JL Tree Service

Redheaded Pine Sawflies

Marie Rojas, IPM Scout, found redheaded pine sawflies on a Japanese red pine in a landscape in Gaithersburg this week. This native sawfly feeds on pines including jack, red, shortleaf, loblolly, Japanese black, and mugo. Other hosts include deodar cedar and Norway spruce. The larvae feed gregariously. A group of larvae can defoliate whole sections of a pine very rapidly in late August to early September.
Control: Prune off tip growth on which they are feeding and destroy. Conserve insecticide will also give control.

Redheaded pine sawfly larvae feed on plant tips
Photo: Marie Rojas, IPM Scout

Lace Bugs

Lace bugs are still active in late summer. Marie Rojas, IPM Scout, is reporting that lace bugs are still feeding on pyracantha in a landscape in Gaithersburg. Wendy Kinsey is finding them on lindens in Annapolis. Look on the undersides of leaves for black fecal spots and the different life stages. Lace bugs cause white stippling on the upper side of the foliage. There are several generations a year.
Control: Plants should be monitored regularly for signs of a lace bug infestation. Get good coverage of horticultural oil on the underside of foliage to reduce populations. Systemic insecticides will give control. Many products are labeled for lace bugs.

Look on the undersides of leaves for lace bugs and black fecal spots
Photo: Wendy Kinsey

Invasive Species Publication Available

The 6th edition of **Plant Invaders of Mid-Atlantic Natural Areas** will be printed soon. **To place a bulk order for one or more boxes (50 books per box)**, go to https://docs.google.com/forms/d/e/1FAIpQLScLMxIeiafe3aJd6VFxFVMYBbxXYPEOSoYTcRGL08jM07xZvw/viewform. ***Note that this is for bulk orders only, not individual books. You will be able to buy single copies later on.***

When following the link, it lists Friday, September 14th as the deadline for ordering. The deadline is Tuesday, September 14th.

Downy Mildew Weather

By: Stanton Gill

We are seeing a lot of activity from downy mildew damaging susceptible varieties of basil in our trial plots. The weather has been perfect for infection. Your customers may notice problems with this disease if they are growing non-resistant basil plants, such as Aroma.

Basil 'Aroma' is infected with downy mildew in our trial plot; there are 3 other cultivars surrounding it that are not infected
Photo: Stanton Gill, UME

Why are My Plants Turning White?

By: David L. Clement, Extension Specialist in Plant Pathology

The fall season is the opportune time of year for powdery mildew fungi that typically develop superficial mycelium and spores on plant surfaces. Most mildews penetrate and parasitize only the epidermal plant cells of their host. However, some can colonize internal tissues as well. They can colonize most flowering plants, ferns, and grasses except for conifers. In general, the fall mildews have a lesser impact on their hosts compared with the early spring/summer mildews. Mildew spores are unique amongst fungi in that they contain a high percentage of water. So, the spores don't require rainfall before germination and can cause infection on dry surfaces. However, they tend to reproduce better during cool humid nights that form morning dew, and under shade. Mildew spores can infect in 6 hours or less, produce a new generation in 4-6 days, and continue to sporulate for several weeks. Spores are released during the day and are primarily dispersed by air.

Powdery mildew on aster. Look for late season infections on woody and herbaceous plants

Management: Fall mildew infections rarely require control measures. Select resistant plant cultivars to replace highly susceptible ones. Fungicides will not cure or remove existing powdery mildew infections. Before infection becomes too severe, several low impact fungicides that contain sulfur, potassium bicarbonate and horticultural oils can be applied as protectants according to label directions.

Allium Leafminers Are Active

Jerry Brust, UME

Landscapers responsible for growing fall leeks or garlic or other *Allium* species need to, for the next month or so (September-first freeze) be looking for the tell-tale marks left by Allium leafminer. Allium leafminer *Phytomyza gymnostoma* tell-tale marks consist of several small round white dots (made by the female's ovipositor) in a row that appear on the middle towards the end of leaf blades (fig. 1). If you had some infestation last year you will especially want to be looking for the signs of this pest now. When eggs hatch the larvae at first mine leaves and then move down to the bulbs and leaf sheathes where they feed and eventually pupate. The feeding damage can open up the foliage and bulb to fungal infections. Both vegetable garden and landscape Alliums should be inspected for this pest.

Row covers can be used to exclude this pest when Alliums are first planted. A good insecticide to use for control of the larvae is spinosad (Entrust is OMRI-labelled). Entrust is a translaminar insecticide, which means it will be absorbed into the leaf tissue of the plant and held there in an active state so when larvae feed on the foliage they will contact the insecticide. Two or three applications of the insecticide used 2 weeks apart from each other with the first one coming when **oviposition marks (white dots) are first seen** should give good control of this pest. The use of a penetrant adjuvant is recommended for better control of ALM.

Fig. 1 Onion leaf blades showing round white dots made by female Allium leafminers
Photos: Jerry Brust, UME

Parasitized Sphinx Moth Caterpillar

Marie Rojas, IPM Scout, found a parasitized catalpa sphinx moth caterpillar this week in Gaithersburg.

Catalpa sphinx moth caterpillar parasitized; note all of the white cocoons
Photo: Marie Roja, IPM Scout

Turf Burn From Pet Urine

By: Andrew Ristvey

Turf burn from animal urine may resemble disease spots
Photo: Andrew Ristvey, UME

There was an inquiry to our horticultural program team concerning turf burn from dog urine. This is a common problem in the lawns of families with pet dogs. Wildlife can also be responsible. Often times these burn spots are concentrated in groups where the family dog does its business. They are typically no more than a few inches in diameter and can resemble pathogen damage like dollar spot and brown patch (Harivandi, 2007). Typically there is a ring of darker green grass around the burn patch. The problem is associated with the high concentration of uric acid, which contains a lot of nitrogen, which causes the dark green edge. The urine is typically acidic. The concentrated nitrogen and other salts in the urine burn the roots of the grass. All turf is susceptible, but fast growing warm-season grasses and tall fescue can more easily grow out of the damage, while other cool season grasses do not. Damage is more common during hot and dry weather when grasses are transpiring water from the soil concentrating the uric acid and salts, or when the turf is not actively growing.

So, how do we solve the problem? A common answer on some gardening websites is lime and I once thought that gypsum was the correct solution. However, neither lime nor gypsum should be used. While lime can increase the pH of the soil and gypsum can be used to leach high sodium concentrations from sodic soils, both increase the salt concentration in the grass and can exacerbate the problem of uric acid, the primary culprit. I've been reading peer reviewed literature and a few good options are mentioned. After the dog urinates, irrigate the spot to dilute and leach the uric acid. If damaged has already occurred, it may be necessary to remove the affected turf and surface soil, then reseed. If walking the dog, try to find less obvious places for it to go. Some have suggested modifying the pet's diet, but little evidence has been found to show that method is effective. Puppies and female dogs tend to concentrate the urine in patches because of their stance when they void. I have found a University of California fact sheet authored by Harivardi (2007) along with a Perdue and University of Illinois fact sheet (Bigelow et al, 2006), both linked below.

https://escholarship.org/content/qt7dw6g71p/qt7dw6g71p.pdf
https://www.extension.purdue.edu/extmedia/AY/AY-327-W.pdf

Spider Mites

Spider mites have been a problem on many plants this summer. Elaine Menegon Good's Tree and Lawn Care, reported heavy damage on winged euonymus. This plant is one that commonly has high spider mite infestations.

Heavy spider mite damage on winged euonymus
Photo: Elaine Menegon, Good's Tree and Lawn Care

Boxwood Leafminer

Marie Rojas, IPM Scout, found boxwood leafminer larvae in boxwood leaves in a landscape in Gaithersburg. The larvae are feeding at this time of year, so it is time to treat infested plants with a systemic insecticide.

Small boxwood leafminer larvae are starting to feed at this time of year
Photo: Marie Rojas, IPM Scout

Bagworms on the Eastern Shore

Julie Golightly, Salisbury, University, is reporting that she is still seeing bagworm activity in Salisbury. Some bags are still fairly small.

Smaller bagworms are still active on the Eastern Shore in Salisbury
Photo: Julie Golightly, Salisbury University

Beneficial of the Week

By: Paula Shrewsbury

Lots of scales… lots of lady beetles

When I think of the key pests in our industry, scales are always near the top of the list, especially the soft (Coccidae) and armored (Diaspidae) scales. As you look over the weekly IPM reports, there is hardly a week that goes by where we don't mention at least one, usually more, scale species. For example, in last week's report, white prunicola scale, crapemyrtle bark scale, and tuliptree scale were discussed. Fortunately, scales are attacked by many species of parasitic wasps (Hymenoptera) and predators such as beetles, bugs, lacewings, and mites.

It is our friends, scale eating lady beetles (Coleoptera: Coccinellidae), that I will focus on this week. Although many species of lady beetles (a.k.a. ladybug, lady bird beetle) are generalists and feed on a range of insects, species of *Hyperaspis*, *Chilocorus*, and *Rhyzobius* lady beetles commonly feed on scales (coccidophagous predators).

Hyperaspis species are shiny, black lady beetles with a few to several red, orange, or yellow spots on the back, and most species are small in size (~2-3 mm). The adult *Hyperaspis* lady beetle seen here feeding on tulip tree scale (see image) is black with two red spots and small white patches on each side behind the head (on the pronotum). The larvae of *Hyperaspis* lady beetles are oval shaped and some species are covered with white wax (see image). To the inexperienced eye, the *Hyperaspis* larva may be mistaken for a mealybug, a pest insect. To distinguish between the good guy (predatory *Hyperaspis*) and the bad guy (plant feeding mealybug), you should flip the white waxy insect over and determine if it has chewing (lady beetle) and sucking (mealybug) mouthparts. *Hyperaspis* larvae often work their way under the female soft scale to feed on her eggs (see image). There are reports from Virginia that *Hyperaspis* is consuming and reducing populations of the newly invasive crape myrtle bark scale (Eriococcidae). *Hyperaspis* larvae also can help in monitoring for soft scales. Their white color makes them very noticeable. If you see the white waxy ladybeetle larvae on your plants look closer to see if you have soft scale too. There are also other species of lady beetles that have white wax covered larvae.

Most of the seven species of *Chilocorus* lady beetles that occur in the U.S. are predacious and feed on scale insects (armored scales preferred), 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 adults 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 ¼" in length.

An adult *Hyperaspis* lady beetle with tulip tree scale
Photo: M.J. Raupp, UMD

A white waxy *Hyperaspis* larva has worked its way under a female soft scale and is snacking on her eggs
Photo: M.J. Raupp, UMD

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 are black or grey and spiny in appearance. There are two generations of twice-stabbed lady beetles in the northern U.S. and more in warmer states. They overwinter as adults, which begin foraging for food as soon as temperatures begin to warm up. Female adults have two forms of defense to deter predators who want to eat them. They emit a noxious substance from their legs 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.

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

Rhyzobius lophanthae (previously known as *Lindorus lophanthae*) has a reddish head, pronotum and underside, and its wings are a grayish black and densely covered with tiny hairs. Adults are small, only 1/7-2/9 mm in length. It feeds on various species of scales, especially armored scale, and mealybug. *Rhyzobius lophanthae* was introduced into California from Australia in 1892 to control the olive scale and is now spread over much of the U.S. Adults and larvae are predacious and they feed on all stages of armored scales. Larva crawl under the adult female scale covers feeding on the newly hatched "crawlers" before they disperse on the branch. *Rhyzobius lophanthae* is considered an important predator of many armored scale species.

A *Rhyzobius lophanthae* adult which feeds on armored scales. Photo: M. Quin; BugGuide #1474252

Lady beetles and other scale natural enemies occur naturally in outdoor environments. Unfortunately, some management practices and urban landscape and nursery design can disrupt natural enemies, reducing their ability to suppress scales below damaging levels. Practices to conserve these natural enemies should be implemented to provide more efficient and long-lasting suppression of scales below damaging levels. In general, appropriate pesticide selection and use, management of ant populations, and habitat manipulations to favor natural enemies will all help to restore biological control of scales and other plant feeding pests.

Weed of the Week

By: Chuck Schuster

As one views many areas that are margins on the edges of turf and trees, a vine growing up can often be found. Its starts off small, but if left unattended or managed, it can grow as big as someone's arm. Oriental bittersweet, *Celastrus orbiculatus*, often called Asiatic bittersweet, is a deciduous woody perennial plant which grows very prolifically in this area. It is being noticed in many landscapes and nurseries this year, and does require attention. A problem of nursery and landscape settings, this fast growing vine can grow as tall as fifty feet or more in one

year, with a stem diameter of up to four inches. The leaves are alternate and round in shape, (Photo 2) with a finely toothed margin. Damage from this weed can be from breakage of the desired plant, as it will grow into the canopy and create either weight or a potential storm damage hazard. The spirally habit (photo1) can also choke other desired plants. Oriental bittersweet is very similar to American bittersweet, and can be distinguished by the location of the flowers and fruit. Berry location on American bittersweet is only at the tips of the vines, where with the Oriental bittersweet, the berries occur all along the vines.

1: Twining growth habit
Photo: Chuck Schuster, UME

Oriental bittersweet is an invasive plant. One reason for concern is the color and great numbers of berries produced. As birds are one of the prime methods of dissemination, a brighter red color is very attractive to the birds and with greater numbers of berries to be found, the potential of spread is much higher. To add to this problem, the seeds also seem to have a higher germination percentage than that of American bittersweet.

2: Alternate leaf pattern
Photo: Chuck Schuster, UME

3: Fast growing upright growth
Photo: Chuck Schuster, UME

Control of Oriental bittersweet can be accomplished through either mechanical or chemical means. Cutting near the base can be effective with small plants. As plants mature, immediately use a stem application of triclopyr (Garlon 4) or glyphosate (Roundup and others) at a 25% solution after cutting. Use caution not to apply the herbicide to the desired plant material, as thin barked species can be damaged or killed. In open settings, where possible, apply triclopyr and glyphosate. If possible, mow the site first to create the cut stem. Repeated applications may be necessary. The use of a basal oil and a penetrant will be beneficial and increase the efficacy. Use eye protection when doing stem applications, as some products may cause eye damage. As always read the label for proper PPE.

Plant of the Week

By: Ginny Rosenkranz

Helenium autumnale 'Helena Red Shades' is a native herbaceous perennial that is known by its common name of sneezeweed. This is not a plant like ragweed that does cause a lot of sneezes, but in the past the flowers and leaves were dried into a powder and used as snuff. Snuff was placed on the back of the hand and sniffed up the nostrils, then the user would sneeze. (I still don't see why anyone would want to use snuff!) The species, *Helenium autumnale*, has clusters of bright yellow daisy-like flowers while the cultivar, 'Helena Red Shades' has bright red ray petals tipped by burnt golden yellow on the edges that surround a golden dome-shaped button of fertile flowers. These plants thrive in full sun and moist or wet soils and are cold tolerant from USDA zones 3-8. Plants grow upright in a clump, reaching 3-5 feet tall and 2-3 feet wide with rigid stems. The dark green lance-shaped leaves are secured to the stems in an alternate fashion. The 2-inch flowers begin to bloom in August when most plants are finished, and continue to bloom into October. Pollinators love the flowers, but rabbits and deer usually leave the plant and flowers alone, possibly due to the strong scented foliage. *Helenium autumnale* 'Helena Red Shades' can be used in rain gardens as long as the soil is not allowed to dry out and in native or cottage gardens that can be kept moist. No insect pests were listed, but leaf spot, powdery mildew and rust can be occasional problems.

***Helenium autumnale* 'Helena Red Shades' begin to bloom in August, and flowers into October**
Photos: Ginny Roseknranz, 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 2991 DD (Martinsburg WV) to 3819 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.

- White prunicola scale – egg hatch / crawlers (3rd gen) (3270 DD)

- Banded ash clearwing borer – adult emergence (3357 DD)
- Tuliptree scale – egg hatch / crawlers (3519 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 September 8)

Aberdeen (KAPG)	3029
Annapolis Naval Academy (KNAK)	3454
Baltimore, MD (KBWI)	3560
Bowie, MD	3603
College Park (KCGS)	3267
Dulles Airport (KIAD)	3366
Ft. Belvoir, VA (KDA)	3402
Frederick (KFDK)	3243
Gaithersburg (KGAI)	3220
Greater Cumberland Reg (KCBE)	3006
Martinsburg, WV (KMRB)	2991
Natl Arboretum/Reagan Natl (KDCA)	3819
Salisbury/Ocean City (KSBY)	3479
St. Mary's City (Patuxent NRB KNHK)	3680
Westminster (KDMW)	3606

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

MNLGA Nursery Field Day

September 16, 2021
Location: Fieldstone Nursery, Parkton, MD
This is your chance to mingle with other nursery managers and owners and see an innovative nursery. The University of Maryland Extension and MDA will have educational stations to help you protect your plants from major diseases and insects.
Go to the MNLGA website for program and registration information

Diagnostic Session

We will be holding one more plant diagnostic session for nutrient problems, diseases, and insects on **September 22nd** at the Central Maryland Research and Education Center (11975 Homewood Road, Ellicott City, MD 21042) from 12:30 – 3:30 p.m. We encourage participants to bring samples of nutrient disorders and insect, including natural enemies, and disease problems for diagnosis by David Clement, Karen Rane, Stanton Gill, Paula Shrewsbury, and Andrew Ristvey, University of Maryland Extension.

FALCAN Truck and Trailer Safety Seminar

October 20, 2021
Location: Urbana Fire Hall, Urbana, MD
For more information
falcantruckandtrailer21.eventbrite.com

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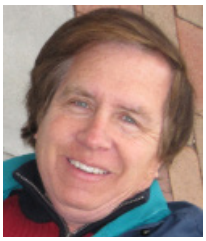

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Photos are by Suzanne Klick or Stanton Gill unless stated otherwise.