UNIVERSITY OF MARYLAND EXTENSION

TPM/IPM Weekly Report

for Arborists, Landscape Managers & Nursery Managers

Commercial Horticulture **May 17, 2019**

In This Issue...

Beneficial of the Week: Biocontrol of aphids
Weed of the Week: Shepherd's purse
Plant of the Week: Peony "Bartzella'
Degree Days Announcements

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

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), David Clement (Extension Specialist), and Joe Roberts (Plant Pathologist for Turf)
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)
Design, Layout and Editing: Suzanne Klick (Technician, CMREC)

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 430 DD (Cumberland) to 711 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:

- Emerald Ash Borer adults
- Basswood lace bug (active stages)
- Lesser peachtree borer adult emergence / flight
- Maskell Scale crawlers
- Gypsy moth egg hatch / early instars
- White prunicola scale (1st generation crawlers)
- Bagworm egg hatch / early instars
- Potato leafhopper adults
- Juniper Scale crawlers

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

LIFE CYCLE INFORMATION NEEDED for the PEST PREDICTIVE CALENDAR - PLEASE HELP!

We need information on the timing of activity of the susceptible life stages for key pest insects (ex. first crawler activity of gloomy scale, obscure scale, and magnolia scale; egg hatch of caterpillars; or first activity of two-spotted spider mite). With this information, we can increase the usefulness of our UME Pest Predictive Calendar **When reporting insects for the IPM report, please be sure to also include the following: Date, Location (city, state), insect stage (if known), and plant host.** If you are unsure of the stage or species identification, please get a sample to us. You can mail it to: Stanton Gill, CMREC, 11975 Homewood Road, Ellicott City, MD, 21042 OR Nancy Harding, 4291 Fieldhouse Drive, 4112 Plant Sciences Building, Dept. of Entomology, University of Maryland, College Park, MD, 20742.

Potato Leafhoppers

By: Stanton Gill

For nursery managers growing red maple and goldenrain trees, the potato leafhopper is very important. Heather Zindash, IPM Scout, found the first activity of potato leaf hopper in the north part of Baltimore County. Marie Rojas checked a couple of nurseries and found no activity yet at her locations in Montgomery and Frederick counties. The cool weather of the last week is delaying their activity, but when it warms up expect them to be found throughout the area. Nursery managers growing red maples and golden raintrees will want to monitor their plants this week. This pest usually arrives from the south, riding up on the jet streams. When the adult and nymphs feed on the new growth, they cause distorted foliage that looks like herbicide injury.

Leafhopper feeding causes distorted tips on trees such as maples

Pearleaf Blister Mites on *Pyrus calleryana*

By: Stanton Gill

An alert grower brought a sample into the CMREC lab on Friday of ornamental calleryana pear. The foliage was heavily damaged by pearleaf blister mites. Pearleaf blister mite, *Eriophyes* (=*Phytoptus*) *pyri*, is an eriophyid mite found on edible and ornamental pears, *Pyrus* sp. The mite is extremely small, and you will not see it unless you have at least 20 X magnification. The body is white, long and slender, striated, and with a few long hairs. Immature forms resemble adults but are smaller. Eggs are spherical and pearly white.

Pearleaf blister mites feed under the bud scales during winter and may cause buds to dry and fail to develop in spring. When buds start to grow in spring, mites feed on emerging leaves from new leaves emerging through bloom and on developing fruit. Management is often timed for the fall to treat the mites while they are in the outer bud scales. Delayed dormant applications also target the bud scales with oils. Timing during the season is best done prior to their movement into the leaf blisters after petal fall. We conducted field trials back in 1998 and 1999 using 2 % horticultural oil and obtained fairly good results.

Weather for May and Impact on Plants

By: Stanton Gill

We had a nice stretch of weather in April with 3 weeks of fairly nice, dry weather which was perfect for harvesting trees and transplanting. Last weekend, this situation all changed with excessive amounts of rain carrying though into Monday night. Rivers were swelling up to very high levels. The ground water level is high and perched water tables are very evident. This will continue to contribute to root injury on plants which again, will show up when the weather eventually turns sunny and warm.

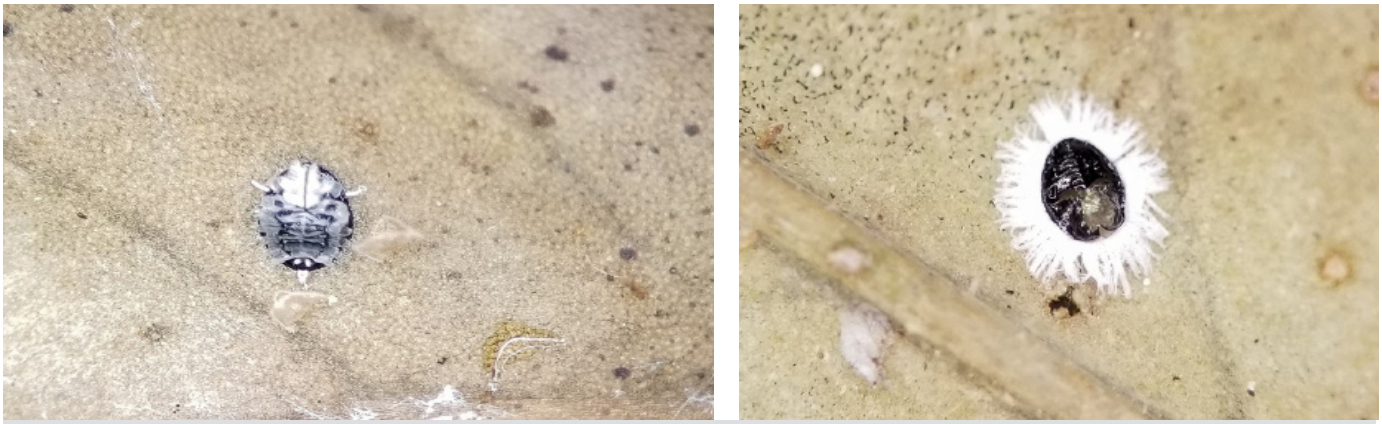
On the good side, the turfgrass looks excellent this season with the heavy rains and cool weather over the last 6 days. On the bad side, we are getting in samples of botrytis on plants at commercial cut flower operations, especially if they planted bulbs close to together so air cannot circulate during the extensive wet periods.

From Marie Rojas:
"Here is a photo of waterlogged planting holes in a nursery. This was several days after our last round of rain, but because we are now in the rainiest 365 day period ever (per the news), this just illustrates how saturated the soil continues to be. I think we'll continue to see a lot of trees dying."

Often Mistaken for a Scale on Holly

By: Stanton Gill

At this time of year, we get in several emails asking about a scale on American holly foliage. At least... it looks like a soft scale to many landscape managers. It is actually the pupal stage of mulberry whitefly. This whitefly feeds mainly on mulberry, but it is also found on American holly. It is rarely in large enough numbers to warrant control. Sarah Hughson sent in these pictures inquiring about which scale this one was on American holly in Colorado. So, this pest is not only on the East Coast, but it is also out in Colorado. It is an interesting pest on the foliage, but not worth treating to control.



The pupal stage of mulberry whitefly looks similar to some scale insects
Photos: Sarah Hughson

Euonymus Scale and White Prunicola Scale

By: Stanton Gill

Euonymus scale crawlers showed up in Meyersville this week (Central, MD). Euonymus scale, besides feeding on euonymus, can be found on boxwood and pachysandra plants. A sample of flowering cherry with a healthy population of white prunicola scale from a central Maryland nursery was brought into the CMREC lab on Thursday at the IPM Scout diagnostic session. We founds a lot of crawlers active on the sample. Now is the time to apply either Distance or Talus.

Note the small yellow Euonymus scale crawlers on the stems of *Euonymus kiautschovicus*

If cherry laurel has a white prunicola scale infestation, check for crawlers now

Deer Ticks – Very Active

By: Stanton Gill

I was visiting cut flower growers this week and noticed the day after the visits that I had a small spot on the joint of my arm and the area was swelling. I took out a 12 X magnifier and sure enough a deer tick had wedged into my skin. May is a prime time for activity of deer ticks. If you are working out in the nursery, cut flower fields, or in the landscape, check yourself a couple of times during the day for deer ticks. They are small, so it will take a little time, but it is worth it to detect them early. You do not want to experience Lyme disease. The ticks do not fly or jump. They do hang on tall plants and grass in fields. They are also active at the edge of woods where they extend their front legs and quest for CO_2 given off by mammals. When I work in my orchard, I usually wear clothing treated with permethrin to prevent problems with ticks. This time during the visit to the cut flower growers, I was not wearing protective clothing.

Be sure to check yourself and your clothes for ticks after working outside

Improving your Diagnostic Skills and Tree ID

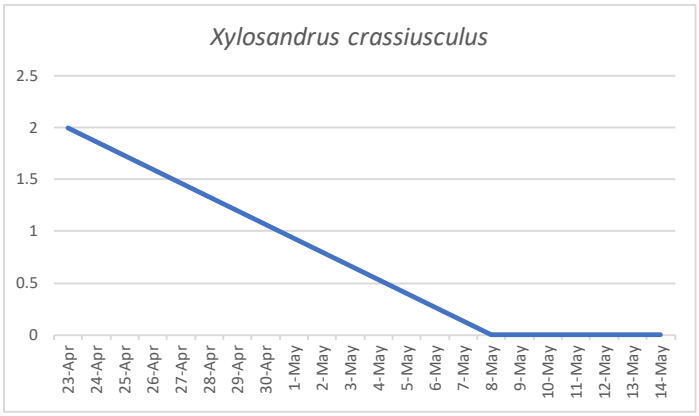
By: Stanton Gill

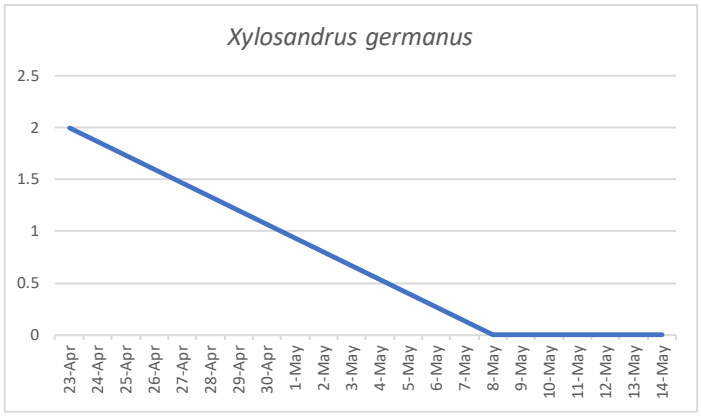
If you want to improve your diagnostic skills in disease and insect problems and identifying tree species, you will want to attend the evening session at the Woodmont Country Club on Wednesday, May 22 from 5:00 until dark. Visit the Maryland Arborist Association website for information.

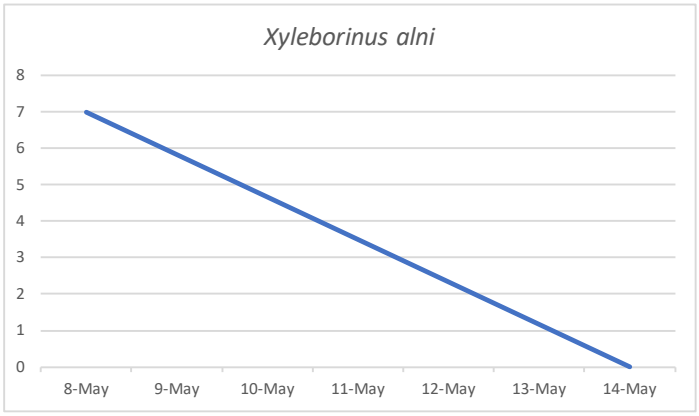
Ambrosia Beetle Update

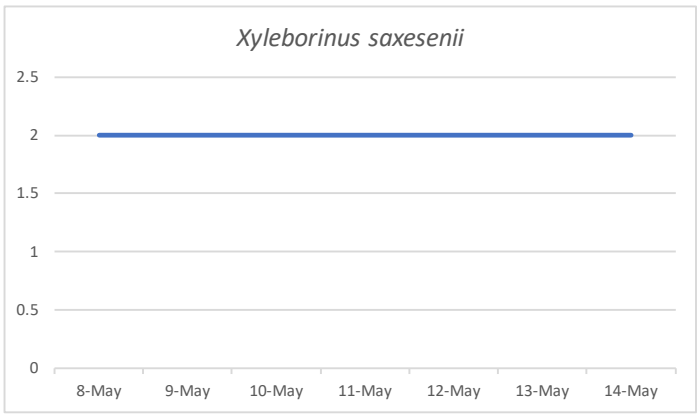
By: Stanton Gill

The cool wet weather of the last week has really slowed down the number of adult ambrosia beetles we are picking up in alcohol baited traps in Frederick, Westminster, and at the CMREC lab in central Maryland. See charts that Rachel Ross prepared that summarize the count catches.









Red Thread

An article on red thread was included in last week's report. Subsequently, we have continued to receive mutliple reports of red thread infection in the area; Marty Adams, Bartlett Tree Experts, in central Maryland, David Freeman, Oaktree Property Care, in northern Virginia, Eric Wenger, Complete Plant Health Care, Inc., in Bethesda, Bob Mead, Mead Tree Care, in Woodbine, and Mark Schlossberg, ProLawn Plus, Inc. in Pikesville. Of the turfgrass species commonly observed in our region, perennial ryegrass is known to be highly susceptible along with tall fescue, fine fescue, and Kentucky bluegrass. The pathogen is not an issue on warm season turfgrass species.

Ash Anthracnose

By: David Clement, UME-HGIC

Ash anthracnose which causes leaf and shoot blight is caused by the fungal pathogen, *Gnomoniella fraxini*. The symptoms range from blotchy black or brown lesions on leaves to deformation of leaves around the lesions, or defoliation in severe cases. This disease is worse during cool and wet spring weather. This disease usually requires no management, since it is not a serious problem for healthy mature trees unless the disease is severe for multiple consecutive years. Multiple episodes, however, can weaken the tree, increasing its vulnerability to other diseases and pests.

Ash anthracnose is worse during wet and cool spring weather
Photos: John Smithmyer, Bartlett Tree Experts

Cottony Camellia/Taxus Scale

Marie Rojas, IPM Scout, found cottony camellia/taxus scale on *Ilex* 'Nellie R Stevens' and 'Dragon Lady' in Gaithersburg and Darnestown. Heather Zindash, IPM Scout, found a heavy population of this scale on *Cephalotaxus harringtonia* in Baltimore. The sites were scouted on May 15 and eggs were found. At the Diagnostic Arborist Pest Walk in Salisbury on Wednesday, we found crawlers of this scale on yews at Salisbury State University. The shore area of Maryland is usually about 7 -10 days ahead of central Maryland. Monitor closely for the crawlers that will hatch soon.

Control: Wait for eggs to hatch and then treat with pyriproxyfen (Distance) or buprofezin (Talus) mixed with 0.5 - 1% horticultural oil.

Egg mass produced by cottony camellia/taxus scale on holly
Photo: Marie Rojas, IPM Scout

Close-up of cottony camellia/taxus scale eggs under the cottony mass
Photo: Heather Zindash, IPM Scout

Squirrel Damage to Trees

By: David Clement

We were conducting a diagnostic IPM walk at Salisbury University on Wednesday. Several of the trees had large strips of bark recently pulled off tree trunks. Squirrels are padding their nest at this time of year and will strip bark from trees. There are a lot of squirrels in urban landscapes, so you may have customers experiencing this damage this spring.

Stripped bark can indicate squirrel damage
Photo: David Clement, UME-HGIC

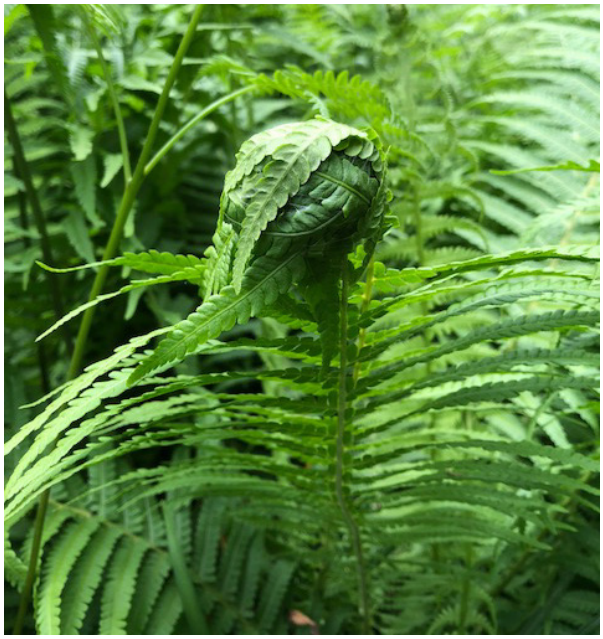
Spotted Lanternfly Hatch Update

By: Stanton Gill

I checked Friday morning with the nursery in central/southern PA where we are conducting spotted lanternfly trials to see if any hatch of spotted lanternfly egg masses had occurred. The growers examined several dozen egg masses that are viable, but had not hatched as of Friday morning. The cool weather seems to be delaying the hatch out this year. We will let you know when hatch has been noted.

Caterpillar in Fern

Marty Adams, Bartlett Tree Experts, found leaf folder caterpillars feeding on fern this week. The larvae use silk to roll the leaves over and feed within these leaf folds. If needed, control options include Acelepryn and Mainspring.



A leaf folder caterpillar gains some protection from predators by feeding within rolled over fern leaves
Photo: Marty Adams, Bartlett Tree Experts

Allium Leafminer Moving South in Maryland

By: Jerry Brust, UME

The new pest of *Allium* plants, the allium leafminer, is moving south in Maryland. It was first observed in Maryland in Cecil County in 2017, but now the fly's tell-tale marks (figs. 1 and 2) have been found in a Baltimore City chives planting. This new pest was first found in Lancaster County Pennsylvania in December 2015. Unfortunately, it is my guess that the pest is now probably in many northern/central areas of Maryland. While this pest is mostly associated with vegetables, it is possible that it will attack ornamental *Allium* species- we just do not know. The pest and its damage need to be watched for on *Allium* plantings for the tell-tale signs of the fly's damage which are several very small white dots in a row along the leaf of an allium plant (figs. 1 and 2). Penn State has a great deal of good information about the new pest which can be found at: Penn State Allium Leafminer Pest Alert page. You can cover any *Allium* plantings with row cover to keep the flies off or if needed treat with insecticides such as pyrethroids or spinosad.

Photo: S. May, Penn State

Photo: S. Spichiger,
PA Dept. of Agriculture

Figs. 1 and 2
Tell-tale marks on *Allium* leaf made by allium leafminer females

Exobasidium Galls

By: Karen Rane

Ginny Rosenkranz, UME, sent in a photo of swollen, whitish growth on a camellia (Figure 1). This is Exobasidium gall, caused by the fungus *Exobasidium camelliae*. A related fungus, *Exobasidium vaccinia*, causes similar galls on azalea (Figure 2). Symptoms begin as puffy, light green or pinkish swollen shoot, bud or leaf tissue. Infection occurs on emerging tissue, so most infections occur in the spring when leaves, shoots and flowers are developing. The galls eventually develop a white spore-bearing surface, so removing galls before they turn white is one way to reduce infection. Older gall tissue eventually turns brown and hardens. The disease does not affect the overall health of infected camellias or azaleas, and usually does not warrant chemical management.

Figure 1. Exobasidium gall on camellia
Photo: G. Rosenkranz, UME

Figure 2. Exobasidium gall on azalea, showing white spore layer
Photo: K. Rane, UMD

Eastern Tent Caterpillars and Monarch Caterpillars

Eric M. Wenger, Complete Plant Health Care, Inc., is reporting that he is "definitely not seeing a lot of Eastern tent caterpillar activity. However, we have quite a few, (more than 10), monarch caterpillars on our milkweed. Seems early, but very welcome."

Monarch caterpillars are feeding on common milkweed
Photo: Eric Wenger, Complete Plant Care, Inc.

Beneficial of the Week

By: Paula Shrewsbury

Aphids don't have a chance!

Flower or syrphid flies feed on nectar when they are adults. These true flies mimic bees. Photo: M. J. Raupp, UMD

Flower or syrphid fly larvae are voracious predators of aphids Photo: M. J. Raupp, UMD

An *Aphidius* female wasp stinging (inserting an egg) into a live aphid. Photo: Peter Bryant, from BugGuide.net

At this time of the season there are a number of aphid species active on various plant species. Most commonly at this time of year, we see an abundance of rose (*Macrosiphum rosae*) or potato (*M. euphorbiae*) aphids on roses, spirea aphid (*Spirea spiraecola*) on spirea, and spiny witch hazel gall aphid (*Hamamelistes spinosus*) on river birch. Aphids are usually found on the new growth of plants where the growth is soft and filled with amino acids that provide nutritious food for aphids. Aphids have evolved to become quite efficient at reproduction and reach high densities quickly. For example, during the summer season for many species of aphids, all the individuals are females so every aphid in the population is reproducing, they give live birth so no time needs to be spent in the egg stage, and they are parthenogenic so females do not have to mate to reproduce… pretty amazing biologically. Interestingly, even with these population building attributes chemical controls are seldom needed. There is an entire suite of natural enemies that ultimately reduce, and often eliminate, aphid populations. Natural enemies move into landscape plantings in response to increased "food" availability. There is a suite of natural enemies that are very good at finding populations of aphids and knocking back their numbers to near zero. The aphid natural enemy complex includes various species of lady beetles, predatory flies such as syrphid or flower flies and Aphidoletes midges, lace wing predators, and parasitic wasps. I frequently monitor plants for populations of aphids and their natural enemies (always interesting to watch!). The general pattern I repeatedly see is aphid populations building up to high densities, followed by the appearance of various predators and parasitoids, and then a reduction of aphid densities, often to just a few or no aphids left on a plant. Observations reported this past week were of multi-colored Asian lady beetle adults (larvae are also predacious) found in abundance on organically grown river birch attacking spiny witch hazel gall aphids (these aphids spend the winter on witch hazel and the summer on river birch). There will soon be "aphid mummies" which are aphids that have been parasitized (and killed) by tiny wasps. In addition to various lady beetle species attacking aphid populations, I often see flower fly larvae on the underside of leaves. Adult flower flies, although they are true flies, are bee mimics and feed on the nectar and pollen of flowers. They cue in on branches infested with aphids and lay small white eggs individually on the leaves. Once the eggs hatch the maggot-like larvae voraciously search for and consume aphids. It is quite exciting to watch these little guys in action. So the take home message is: Wait! Don't spray! The natural enemies should come – and they will win over the aphids. If there is a need to treat aphids (ex. high amounts of honeydew, high levels of distorted new growth) then use a

short residual product such as horticultural oil that will reduce the aphid populations and have the least detrimental impact on natural enemy populations. In addition, avoid using high nitrogen, fast release fertilizers. These fertilizers will favor aphids and lead to greater densities of aphids and their damage.

Rose aphid mummy (tan color) with a parasitic wasp in the genera *Aphidius* developing within it
Photo: M. Raupp, UMD

Aphids do have a good side to them. As I mentioned they attract a large and diverse suite of natural enemies into a landscape or nursery. Once the natural enemies consume the aphids on aphid infested plants they will then move onto other plants in the area that have food for them. For example, many natural enemies of aphids also feed on scales, spider mites, thrips, or small caterpillars providing biological control of these pests. When possible let mother nature (or her natural enemies) take care of aphid infestations and you will have the added benefit of reductions in other pest species by an abundance of natural enemies.


Spiny witch hazel gall aphid, *Hamamelistes spinosus*, on the underside of foliage of river birch
Photo: Abigail M. Parker, from BugGuide.net


Lady beetle adults feed on spiny witch hazel gall aphids on organically grown river birch. This is also a mating pair so soon there will be even more lady beetles in this landscape. The distortion on the foliage is the damage on the upper leaf caused by aphids feeding on the underside.
Photo: Maryland Nursery Grower

Weed of the Week

By: Chuck Schuster, UME

Another 2 plus inches of rain this week (Sunday through Monday). It is hard to even provide the needed mowing on turf to keep it looking good without leaving tracks or worse. Soils remain somewhat wet throughout the region.

As a follow up to our weed last week, roughstalk bluegrass, with so few real options for control I would like to learn from you how you are dealing with this weed. Let me know if this weed is a concern on your properties and if you can, your management strategies. I never share specific ideas with others, but would like to learn how you are managing this plant issue. Send them to cfs@umd.edu.

Weed emergence across the region varies greatly. Professionals may often look at the weed of the week posted and wonder why it is posted and discussed so late, while others may not see it for a week or more. Add to that the rainfall patterns, much like the soil temperature warm-up, weed emergence varies greatly. This week, I selected a weed that has a strong foothold and is greatly developed already in the warmer parts of this region.

Shepherd's purse, *Capsella bursa-pastoris*, is an invasive winter annual weed in the Mustard family. Growing from a ground hugging four inches, to as tall as a twenty-five inch in total height, this plant is getting noticed currently (photo 1). Shepherds purse will start presenting as a basal rosette, with basal leaves being lance-shaped and up to two and one half inches in length (photo 2). Stem leaves are alternate, and clasping, lance-shaped, narrow and toothed. The white to pink flowers will have four petals and are found on thin spreading stalks that produce heart-shaped flat seed pods (photo 3). Each pod can contain up to twenty seeds. Shepherd's purse reproduces only by seed. Seeds require disturbance for germination and will survive long periods in the soil. This plant prefers dryer climates but can survive on wet sites. The name for this weed comes from the small flat seeds that are produced, triangular in shape, with a seam in the middle. It is a prolific seed producer and some research shows that seeds can remain viable for up to 20 years in the soil.

Photo 1: Shepherd's purse is actively growing in the area now

Cultural control in turfgrass includes appropriate mowing height, pH and fertility management. Strong turf is an excellent deterrent to this weed. In landscape settings, the use of mulch or other barriers, mechanical hand removal or flame control. Use caution with flaming as it can cause fires in mulch.

Shepherd's purse will respond to pre-emergent applications of oryzalin (Surflan), Snapshot, and Dichlobenil (Casoron). Post-emergent control may be obtained using several selective broadleaf herbicides labeled for turf, including 2,4-D, MCPP, Dicamba and Triclopyr. These herbicides are in many of the turf broadleaf weed control products, and several can often be found together in the same product. In landscapes, this weed can be controlled with many of the non-selective translocated products.

Photo 2: Note the toothed leaf of shepherd's purse

All shepherd's purse photos by Ginny Rosenkranz, UME

Photo 3: Shepherd's purse produces flat, heart-shaped seed pods

Plant of the Week

By: Ginny Rosenkranz, UME

Peony ‘Bartzella’ is a hybrid peony, a cross between an herbaceous or garden peony and a tree peony, also known as an Itoh peony. ‘Bartzella’ blooms at the same time as the herbaceous peonies with very large deep sulfur yellow flowers with bright red center surrounding the cream to yellow stamens. The stems are strong and carry the flowers in an upright positon without requiring staking, even during heavy rains. The plants are a dark rich green growing about 2-feet tall by 3-feet wide. They prefer to grow in full sun in rich well drained soils. ‘Bartzella’ prefers a low amount of nitrogen in the spring and none in the late summer or fall. The huge almost 9-inch flowers have double to semi-double petals with a lemon fragrance. Plants are winter hardy from USDA Zone 3-8 and are said to be resistant to deer and rabbits. Diseases of peonies include Botrytis blight (gray mold), peony blotch (measles), powdery mildew, Phytophthora blight, Southern blight, viruses, and foliar nematodes. Insect pests include scale insects and thrips. Ants will often visit peonies to collect the sweet nectar the plants secrete at the base of the green sepals that surround the flower buds. While the ants are feeding on the nectar, they are also protecting the peony flowers from other insects that would like to feed on the flowers. The best time to cut the peony flowers is when they are in their soft ‘marshmallow stage’. Rinse the ants off before bringing them indoors.

Peony ‘Bartzella’ produces strong stems that do not require staking
Photos: Ginny Rosenkranz, UME

Degree Days (as of May 15)

Abingdon (C1620)	478
Annapolis Naval Academy (KNAK)	650
Baltimore, MD (KBWI)	562
College Park (KCGS)	523
Dulles Airport (KIAD)	549
Frederick (KFDK)	524
Ft. Belvoir, VA (KDA)	605
Gaithersburg (KGAI)	508
Greater Cumberland Reg (KCBE)	430
Martinsburg, WV (KMRB)	472
Natl Arboretum.Reagan Natl (KDCA)	711
Salisbury/Ocean City (KSBY)	597
St. Mary’s City (Patuxent NRB KNHK)	645
Westminster (KDMW)	574

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

MAA Pest Diagnostic Clinic for Arborists
May 22, 2019
Location: Woodmont Country Club in Rockville
Schedule and registration information is available at https://maapestwalk.eventbrite.com/

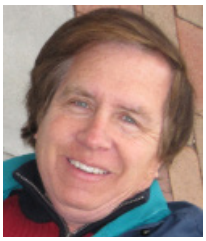
Eastern Shore Pesticide Conference
June 7, 2019
Location: Wye Research and Education Center, Queenstown, MD
https://2019esprocrastinators.eventbrite.com

Procrastinators' Pesticide Recertification Conference
June 14, 2019
Location: Montgomery County Extension Office, Derwood, MD
Registration and schedule are available at https://24th-procrastinatorsconference.eventbrite.com/

Maryland Christmas Tree Association Summer Meeting
Saturday, June 22, 2019
Location: Taylor Sines Woodlake Tree Farm, Oakland, MD
For more info contact: Joncie Underwood@410.398.1882

All Day Session on Herbaceous Perennials
July 25, 2019
Location: The Perennial Farm in Glen Arm, MD

CONTRIBUTORS:



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Thank you to the Maryland Arborist Association, the Landscape Contractors Association of MD, D.C. and VA, the Maryland Nursery and Landscape Association, Professional Grounds Management Society, and FALCAN for your financial support in making these weekly reports possible.

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