UNIVERSITY OF MARYLAND EXTENSION

TPM/IPM Weekly Report

for Arborists, Landscape Managers & Nursery Managers

Commercial Horticulture — April 17, 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 sklick@umd.edu

Coordinator Weekly IPM Report:
Stanton Gill, Extension Specialist, IPM and Entomlogy for Nursery, Greenhouse and Managed Landscapes, sgill@umd.edu. 410-868-9400 (cell)

Regular Contributors:
Pest and Beneficial Insect Information: Stanton Gill and Paula Shrewsbury (Extension Specialists) and Nancy Harding, Faculty Research Assistant
Disease Information: Karen Rane (Plant Pathologist) and David Clement (Extension Specialist)
Weed of the Week: Chuck Schuster (Retired Extension Educator)
Cultural Information: Ginny Rosenkranz (Extension Educator, Wicomico/Worcester/Somerset Counties)
Fertility Management: Andrew Ristvey (Extension Specialist, Wye Research & Education Center)
Design, Layout and Editing: Suzanne Klick (Technician, CMREC)

Freeze and Frost Damage

By: Stanton Gill

On Thursday night, central Maryland and western Maryland had a frost, and temperatures dipped down to 30 - 31 °F. I examined some fruit trees on Friday morning, and there was damage to some flowering sweet cherry and apple blooms. Pears that had leafed out had some damage to the tender new leaves.

At 9:000 a.m., I received an email from John Austin, former owner of Green Gardens: "Wanted to drop you a line to let you know that we are seeing a fair amount of what appears to be Freeze Damage to plants as they are coming out of Dormancy. Kevin reports Oakleaf and Macrophylla Hydrangeas and we have also seen damage to spirea, azalea and Osmanthus. Probably some other things out there that we just haven't noticed yet. We did notice Japanese Maples and Crape Myrtles last fall for I think the 3rd year in a row suffered frozen leaves on trees which curtailed the fall color on many plants under our care. Wondering if others in the industry are reporting this type of damage and if other species are turning up that we should be looking at."

We may see additional damage on some ornamental plants that had new growth emerging. The growth will darken up over the next week or so if it was damaged. Lilacs have new leaves emerging this week. When we get a frost like this morning, often we see bacterial problems move in on the growth. Let us know what you are seeing over the next week - Sgill@umd.edu.

Crape Myrtle Bark Scale

By: Stanton Gill

Well, the crape myrtle bark scale article stimulated a fair amount of response. Russell Bateman, Scientific Plant Service, sent in photos of a heavy infestation of the scale in Alexandria, VA. Amy Sawyer, Kings Towne Lawn Company, sent in some pictures of what she thinks is the crape myrtle bark scale in Fairfax, VA. We are waiting for closer pictures for an accurate ID, but it does appear from her pictures she sent earlier that she has this scale.

Eric Day, Virginia Tech Extension, sent me an email to let me know this scale has also been found in Prince Williams County in Virginia.

You have many clients in Maryland with crape myrtles. We are asking you to look very closely at any new plants being installed and monitor existing plants to slow down the establishment of this scale from Asia.

Crape myrtle bark scale is now being found in Maryland and Virginia
Photos: Russell Bateman, Scientifica Plant Service

Landfill Problems for Landscapers

By: Stanton Gill

Steve Horn, Gardens Remembered Landscape Company, called in on Monday. His landscape crew had taken a load of leaves, grass clippings, and twigs to the Montgomery County transfer station. The managers would not take the load unless they had a work order showing the place they cleaned up was operating in Montgomery County. The landfills in many of the counties in central Maryland are experiencing a large upswing in volume with homeowners at home cleaning out their houses. Bill Stocker reported waiting in a very long line at the Howard County landfill. In Carroll County, they have closed drop-off to the landfills to all but certified trash haulers. Steve is concerned that people may start dumping yard waste and trash on roadside sites if they cannot easily access landfills.

There are a couple of private composting facilities. Note that these places deal with professional contractors and not homeowners. In Carroll County, check with the Denalli plant on Hood Mill Road and Rt. 97. In Montgomery County, try Acme Biomass Reeducation in Olney. The number for Acme Biomass is 301-774-2968 and they are open 7:00 – 5:00 Monday through Friday and Saturdays 8:00 to 4:00. Also, try Metro Ground Covers, a Grant County Mulch Company in Clarksburg. The contact person is Rossana MacDonald at 301.540.6038. They accept clean yard waste with the following specifications: Material must be woody brush, free of metal, plastic or paper. The size of wood needs to be 2' long 18" diameter or smaller. In Howard County, you can contact Level Land in Lisbon. I talked with Matt Newbauer at Level Land on Thursday and they will take tree branches, tree stumps, and leaves but no grass clippings from commerical contractors only. Their number is 410-800-9253.

Vanessa Finney of MNLGA checked on the situation in Baltimore county. Here is what she found:

"We have not had any problem dumping yard debris at Hollins Organic Falls Rd location, there is a minimal fee of $40-$60 per load. They do not accept debris over 3" caliper and there cannot be a lot of soil mix in. Another option is Edrich Farms, they also accept yard debris at their location in Randallstown. Landscapers can also consider getting a dumpster for brush from a local dumpster company for example Benjer will haul away a brush can for $375 flat rate for a large 30 cubic yard dumpster. May be worth it to avoid dumping on the side of the road and risking a huge fine."

Ginny Rosenkranz from the Eastern Shore reported:

"I talked to all of the Lower Shore counties and they are all experiencing more yard litter but are not restricting any. Wicomico County used to compost but stopped quite a few years ago. They have limited their hours to 8 am - 4 pm from 8 am to 6 pm. Worcester County has a grinder and does compost the yard litter. The person I spoke with did not know how long the yard litter was composted, but they do sell it for $20 for 2 yards. Worcester also uses the compost for its own facility. Somerset County Landfill collects all the yard litter and uses its own facility and does not sell or give any away."

In southern Maryland, St. Mary's County, Ben Beale reports no problems with landfills accepting yard waste. Here is his response; "No change here. We have one county site that takes yard waste. They do make their own mulch for distribution. Many landscape companies will compost at their own sites and many will drop off larger material (tree care mostly) to area farms for use in high tunnels for heat."

It may be just the larger population counties that are having the large influx of waste material being dropped off at the landfills. It looks like the more rural counties are good to go.

Eastern Tent Caterpillars

By: Stanton Gill

We put out an announcement that eastern tent caterpillars were hatching last week. The report sparked a number of emails this week reporting hatching in many parts of Maryland now. Steve Clancy reported several on Kwanzan cherries they had just transplanted. Now, the small caterpillars are at a good stage to just grab the small webbing in the crotch of a tree and destroy it before they really build up.

Usually, the best management option for eastern tent caterpillars is to quickly destroy the webbing in crotches of trees

Commercial Horticulture Update

By: Stanton Gill

Daily traffic is light on the road systems lately. The exception is we are seeing a major increase in landscape trucks with trailers, many with skid loaders going to job sites. In calling around to landscape companies, I found at that most everyone is reporting they are getting a fair number of install jobs and maintenance of landscapes over the last couple of weeks. Re-wholesale yards are reporting good sales of woody plants. Demand for woody plants appears to be good at this point. Maybe, the stay at home requirement is working in stimulating people trying to improve their home landscapes while they are home looking at it all of the time.

Ambrosia Beetles

By: Stanton Gill

Cold weather prevailed this week and we have had very little flight activity of *Xylosandrus* species of ambrosia beetles. That said, a nursery in central Maryland found an ambrosia beetle drilling into a yellowwood tree. He also found one wet area on a hybrid dogwood. This activity was found during the one very warm day last weekend. I checked with Marie Rojas, IPM Scout, and her baited traps in Darnestown are empty this week. In Frederick County, there is a site that had 7 ambrosia beetle hits on two alcohol baited bolts on April 10 and 2 hits on April 13 and nothing found on April 15 and April 17. If anyone finds wet areas on their tree trunk or frass piles, give me a call at 410-868-9400.

Early indications of ambrosia beetles are wet areas and frass on the trunks of trees

Woolly Apple Aphids on Winter King Hawthorn (*Crataegus viridis* 'Winter King')

By: N. Harding and P. Shrewsbury

Woolly aphid damage (leaf curling) on Washington Hawthorn 'Winter King'.
Photo: Nancy Harding, UMD

Woolly aphids (family Aphididae, Subfamily Eriosomatinae) were found feeding on Hawthorn 'Winter King' in Bowie this week (April 12). This aphid is most likely woolly apple aphid which spends the winter on crabapple as immatures or as eggs on elm. In the spring and summer, these woolly aphids suck sap from the roots, branches, twigs and base of new shoots of apple, hawthorn, serviceberry and firethorn. The images below show the purplish-red leaf and curl/distortion damage the woolly apple aphid cause to foliage. To find this aphid you will need to uncurl the distorted leaf where you will discover early instars tucked inside (pictured below black arrow). In addition, these sap sucking aphids excrete a sticky, sweet byproduct called honeydew that ants just find irresistible. Ants will go to great lengths to defend aphid populations by keeping the predators away (ant pictured, red arrow). Woolly aphids are small pear-shaped insects that secret and cover their bodies with long waxy threads giving them a fluffy cottony appearance, an effective deterrent to many natural enemies. The accumulated degree days in Bowie on April 12 were 229DD.

Control: Heavy infestations of woolly aphid rarely occur as their numbers are kept low with natural predators like lacewings, lady beetles, hover flies, parasitic wasps, birds and even heavy rainfall will help reduce the populations. In my yard, I have seen gold finches feeding on the aphids! Look for signs of parasitized aphids: they stop producing wax and become discolored (mummified). A circular exit hole made by the parasitoid can sometimes be seen in the aphid's upper surface. To reduce large, damaging infestations, insecticidal oil or soap sprays can be used in the spring and will have minimal impact on natural enemies that will be left to keep the aphid populations at low levels.

Woolly aphid with protector ant.
Photo: N. Harding, UMD

Wooly apple aphids on hawthorn. These aphids produce abundant white wax. Note the eggs on stalks of predacious lacewings on the left side of the stem.
Photo by J.A. Davidson, UMD

Andromeda Lace Bugs

Heather Zindash, IPM Scout, reported on April 17 that Andromeda lace bugs have hatched on *Pieris* in DC.. Lace bugs have multiple generations per year in Maryland. Eggs overwinter inserted in plant tissue. **Monitoring:** Look for yellow stippling of new growth. Look on the underside of foliage for nymphs, adults, and black fecal spots. Damage on new growth indicates eggs have hatched and the new generation has started to feed. **Control:** Get good coverage of horticultural oil on the underside of foliage to reduce populations. Many products are labeled for lace bugs.

Lace bug nymphs are now active on pieris in D.C.
Photo: Heather Zindash, IPM Scout

Fire Blight Situation

By: Stanton Gill

I contacted Kari Peter, Plant Pathologist at Penn State Experiment Station in Biglerville, PA to see how we are faring concerning fire blight. Many of you have serviceberries, crabapples, and pears on which fire blight can be devastating in some years. There is good news. Here is what Kari reported on Wednesday: "According to the models, there is no fire blight risk right now through April 20. I'd have to reassess on Friday to get a feel what next week will be like."

Fruit Tree Update

By: Stanton Gill

The cold will do some damage to your customers' apple trees since most are in full bloom right now. Be sure to keep the protective fungicides mentioned two weeks ago in the IPM alert. I picked up the first plum curculio on my sticky cards this week. Only two so far, and I suspect if it warms up next week we will see their activity increase. Plum curculio damages fruit of apricots, plums, apples, and pears. For plums and pears, most have dropped all of their flower petals. Plum curculio does its injury to the newly formed fruit. Females lay eggs directly into the fruit leaving a noticeable half moon scar that shows up in May and June. Damaged fruit usually drops. Preventative sprays of either Avaunt or the high rate of Imidan timed right after petal fall will greatly reduce the damage.

Maskell Scale and Spruce Spider Mites

Heather Zindash, IPM Scout, reports that Maskell scale with eggs under the covers (left photo) and spruce spider mites (right photo) on *Cryptomeria japonica* 'Yoshino'. Information on control will be provided next week.

Photos: Heather Zindash, IPM Scout

Needle Cast Disease of Blue Spruce

By: David L. Clement, Karen Rane, and Christa Carignan

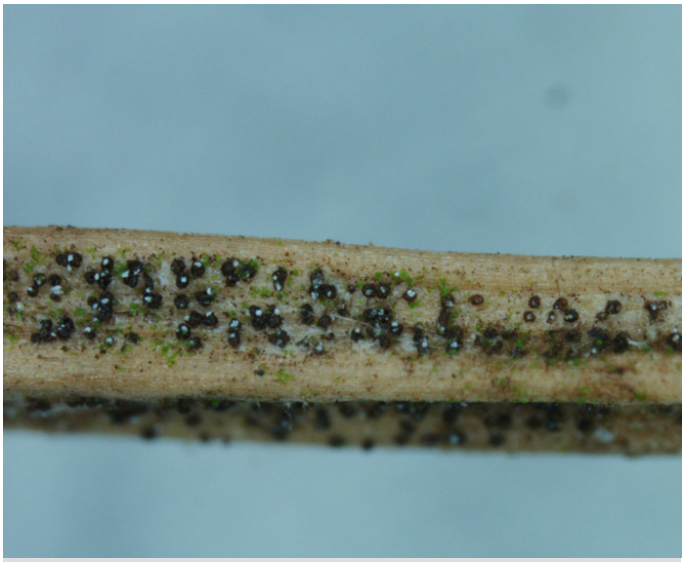
Blue spruce, although not native, or adapted to Maryland, are in high demand by homeowners, and are valued for their attractive color, and shape. However, this species suffers from a number of pests and diseases in our region. Needle cast is one such problem, and has been prevalent in Maryland landscape blue spruce trees for the past several years. Infections year after year have contributed to dieback and decline symptoms.

The needle cast fungus *Rhizosphaeria kalkoffii* is the primary needle pathogen we see in Maryland. The fungus can overwinter on fallen dead needles as well as infected needles still in the canopy. Current-year foliage is susceptible to infection throughout the first year, whenever weather is wet and temperatures are moderate. Symptoms can begin as yellowing current year foliage in late summer or fall , but symptoms may not develop until the winter or early spring of the following year. Needles will turn purplish brown or brown, and fall from the tree, as new growth is developing. Symptoms usually start on lower branches and interior twigs. Tree branches can decline and die after 3-4 years of successive defoliation.

The fungus produces diagnostic fungal fruiting bodies on the needles that can be seen with a hand lens or a microscope. They develop in early winter to late spring and appear as black spheres capped with wax along the lines of the needle stomata.

Practical management of this disease is difficult because the infection period can extend from spring through fall depending on rainfall. Infected and diseased needles can remain on the tree up to 12-15 months after infection. The pathogen can also produce infective spores on living as well as recently dead needles. These infection periods can extend over an entire growing season and follow into the next year so timely fungicide fungicide sprays are impractical for most homeowner trees. Severely diseased trees should be removed and replaced with better adapted conifers for the mid-Atlantic region.

Needle cast disease is a common problem on blue spruce
Photo: David Clement



Fungal fruiting bodies of needle cast disease are visible with a handlens or microscope
Photo: David Clement

Low Level of Twospotted Spider Mites in Strawberries

Jerry Brust, UME

I visited some strawberry fields over the last few days in Maryland. Most of the strawberry fields were on plastic, but some were matted row production and a few in high tunnels. With the cooler weather we have had of late, I was surprised to still find low levels of mites in the fields, with a few hot spots of mites in some high tunnels. There was only one species of mite found: the twospotted spider mite, *Tetranychus urticae*. Overwintering female twospotted spider mites are an orangish-red (fig. 1), and most of the mites that can be seen with a naked eye will appear reddish in color. Spider mites overwinter in the soil or leaf litter, although they may remain somewhat active in high tunnels through the winter. I found mite eggs in several high tunnel strawberries, but not in any outdoor strawberries. The light yellowish eggs are pearl-like in appearance and are attached to the undersides of leaves or stems (fig. 2). Feeding damage by mites that occurs before fruiting can cause the most loss in yield, but after the first strawberry harvest plants can tolerate much greater rates of infestation. Growers should check their strawberries for mites now, especially if you have them in a high tunnel. If mites are found now you need more than 5 mites per leaflet (1/3 of a leaf) to justify the expense of a miticide application.

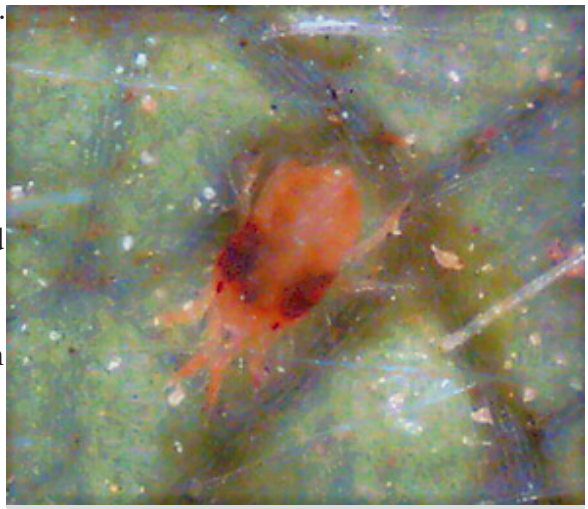


Fig1 Overwintered two spotted spider mite female with orangish-red coloration. Photo: G. Brust, UME

The most difficult thing to achieve for good control is getting adequate spray coverage. Many of the spray applications do a good job of covering the top of the leaves but do a poor job of reaching the underside of the trifoliate. The underside area of the leaf that usually sees very little chemical deposition is in the 'palm' of the leaf (fig. 3). These are the areas where mites can still be found even after a few sprays and need to be carefully checked a few days after an application. Good coverage is essential. One grower uses a leaf blower-like backpack fogger-atomizer sprayer and applies two sprays of 1% (by volume) horticultural oil 7-10 days apart. He gets excellent spray coverage on the underside of his leaves and consequently excellent control of mites. By using two applications about one week apart it is possible to control not only the adults and nymphs, but the eggs too. Oil is a good management tactic to use at this time of year as the plants are small and any possible burn from using the oil is a very low risk. An added benefit of the oil is that it is rather inexpensive. I would

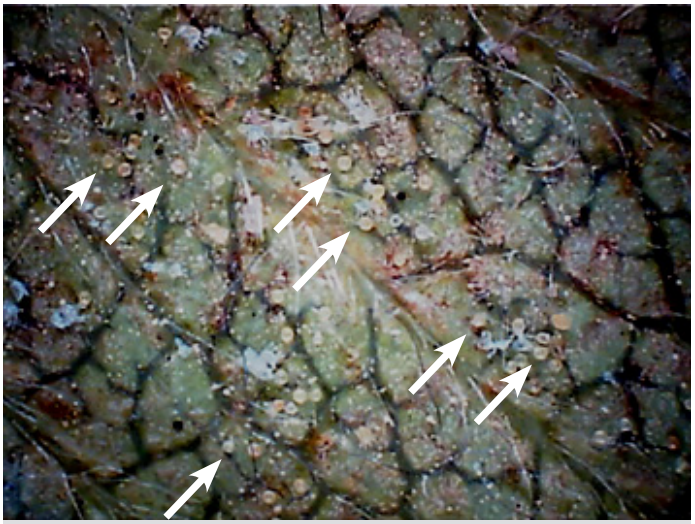


Fig. 2 Many twospotted spider mite eggs (arrows) on back of a leaf
Photo: G. Brust, UME

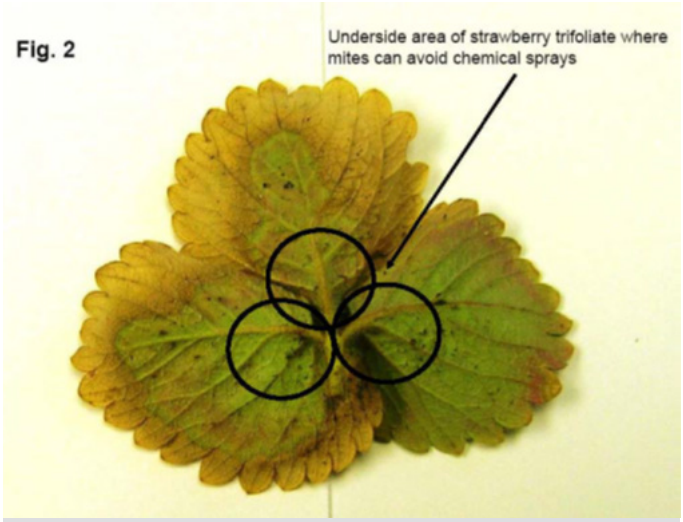


Fig. 3 Underside areas of strawberry leaf where mites can hide from spray applications
Photo: G. Brust, UME

like to see more growers use something like oil now and save the other chemicals for later in the season when plants are much bigger and there is a flare up of mites or other pests. Using oils now will also greatly reduce any development of mite resistance to other chemicals over the course of the season. If miticides are needed there are many excellent miticides available.

Note: If you are scouting perennials, be sure to check for twospotted mites on your crops and landscape plants.

Beneficial of the Week

By: Paula Shrewsbury

A predacious plant bug, Stethoconus japonicus, that specializes on lace bugs

Azaleas have started to bloom. That means it is time to start monitoring for egg hatch of azalea lace bug. Azalea lace bug overwinter as eggs inserted into leave tissue. First instar nymphs should be hatching out around 280 degree days (DD) or just after azaleas are start to bloom in your location. Azalea lace bug, *Stephanitis pyrioides* (Hemiptera: Heteroptera: Tingidae), is considered a key pest of azaleas because it is frequently found in landscapes and nurseries at densities that cause significant aesthetic and/or economic damage to azaleas. When you monitor for lace bugs, like with all pests, you should also monitor for natural enemies. Several species of natural enemies attack azalea lace bug. In the July 7, 2017 Newsletter (click here to see this article) we discussed, *Anagrus takeyanus* (Hymentoptera: Mymaridae), a very, very tiny wasp that specializes on the eggs of lace bugs.

Adult predacious Japanese plant bug, *Stethoconus japonicus*, (left) feeding on an azalea lace bug nymph (right). Note how well *Stethoconus* camouflages on the underside of the infested azalea leaf.
Photo: J.A. Davidson, UMD

Today, I would like to discuss a **Japanese plant bug, *Stethoconus japonicus*** (Hemiptera: Heteroptera: Miridae), a predator that specializes on azalea lace bug and other *Stephanitis* lace bug species. *Stethoconus japonicus* is the first host specific lace bug predator reported in the Western Hemisphere based on collections in MD in 1985, where established populations of adults and nymphs were found attacking azalea lace bugs. *Stethoconus japonicus* was accidently introduced into the U.S. as was its prey the azalea lace bug. Previously *S. japonicus* was only know from Japan. There are 8 known species of *Stethoconus* worldwide and most are predators of lace bugs or Tingidae. Studies by John Neal (USDA) and colleagues in 1991 showed that *S. japonicus* had high biological control potential for species of Stephanitis lace bugs, like azalea lace bug. I personally have spent many hours of my life examining azaleas with azalea lace bug and its natural enemies (my Ph.D. study system). I frequently observed *Stethoconus* on azaleas with lace bug but almost always only when there were high densities of lace bugs. Some natural enemies like *Stethoconus* "numerically respond" to prey populations. When prey populations are high, the predator more readily find the prey and is able to quickly build up its densities. Whereas other natural enemies may be better at detecting prey

Immature predacious Japanese plant bug, *Stethoconus japonicus*, (left) stalking an azalea lace bug nymph (right).
Photo: J.A. Davidson, UMD

when they are at low numbers. I would see adult and nymph *Stethoconus* feeding on azalea lace bug adults and nymphs. *Stethoconus* have piercing-sucking mouthparts that are inserted into its lace bug prey. Paralysis and death of the lace bug occurs quickly. *Stethoconus* overwinter as eggs inserted into the leaf petioles or leaf scars on stems. Stethoconus eggs hatch in the spring as do azalea lace bug eggs.

Stethoconus japonicus adults are mottled black and white with front wings half "leathery" and half membranous. Adults camouflage well on the underside of azalea leaves that are infested with lace bugs (also black and white) and speckled with lace bug fecal spots (see image). *Stethoconus* nymphs are white and gray with some red coloring (see image). As you are monitoring your azaleas and other plants for lace bugs be sure to be on the lookout for the predatory *Stethoconus*. If natural enemies are present take that into account when deciding on your treatment plan.

Weed of the Week

By: Chuck Schuster

With temperatures up and down over the last seven days, weeds are taking advantage of it in the turf where not previously controlled. With a low temperature of 29 °F today, soil temperatures in Central Maryland to a week's low of 47 °F. Turf growth slowed somewhat this week. Japanese stiltgrass and crabgrass have been noted in most areas which is no real surprise since soil temperatures have been in the low 50 °F most of the last two weeks. With upwards of 4.75+ inches of rainfall in some areas during the last 7 days and several days of wind, it has been surprising to me how the soil is reacting with the combination.

Once again, I want to remind you to be mindful of the watchful eyes of the public. The public is at home more than ever. Do your IPM work and applications well. I watched one applicator this week applying post emergent broadleaf products on a windy Saturday afternoon. When I looked at the ticket, the applicator noted that the wind speed was from 5 to 15 mph. With issues involving drift being one of the chief complaints to MDA Pesticide Division, we might be opening a Pandora 's Box of problems if we are not careful.

Note the diffuse root system. No rooting at nodes on this example, which is a method of distinghushing common chickweed from mouseear chickweed.
Photos: Chuck Schuster, Retired, UME

I have had several calls this week on chickweed. Common chickweed, *Stellaria media,* is a winter annual that prefers cool moist areas. Chickweed grows in a dense prostrate fashion and is found in many turf and landscape settings. Reproduction is by seed which usually germinate in late summer or early spring. Leaves are opposite, egg-shaped, and pointed at the apex. The root system is fibrous and shallow and easily detaches when the foliage is pulled. A prolific seed producer, one common chickweed plant can produce more than 2,000 seeds per year under ideal growing conditions. These seeds also seem to have long-term viability in the soil with a germination rate above 90% for more than 30 months. Several important nematode species infest common chickweed, which makes controlling this plant useful in preventing other problems.

Common chickweed can be distinguished from mouseear chickweed by noting the presence of hair on the leaf blades. Mouseear chickweed has a hairy leaf blade and will root at the nodes.

Cultural control of chickweed can be accomplished in turf by maintaining a dense thick turf, mowed at an appropriate height. Chickweed prefers a damp setting, so irrigation management is useful. It does not tolerate warmer parts of the season and dies off during drought stress periods. Prevention and control of chickweed can be achieved through either pre emergent or post emergent pesticides. To prevent chickweed germination, benefin, under trade name Balan can be used in the late summer. Chickweed in ornamental beds can be controlled with an early spring application of "Snapshot" which is a mixture of isoxaben and trifluralin but requires one half inch of rainfall or irrigation within three days to properly activate. Post emergent chickweed in turf can be controlled by many of the broadleaf herbicides. Post emergent chickweed in beds or in turf can be achieved through the use of a glyphosate product as well as products that include Prizefighter, Burnout, Pulverize and Avenger. It should be noted that glyphosate resistance is being noted in some areas.

Plant of the Week

By: Ginny Rosenkranz

Pulmonaria longifolia 'Bertram Anderson' is also sold as *Pulmonaria Longifolia* 'B. E. Anderson', an old fashioned plant commonly called lungwort. Plants grow 8-12 inches high and 18-24 inches wide, thriving in USDA zones 3-8. The semi-evergreen, dark green leaves that emerge in the spring are splashed with silver gray splotches and are long and narrow with sharp pointed ends. Bell-shaped flowers are held up on long arching stems in a rounded bouquet. The petals are bright violet pink that matures to a cobalt blue. The bright balls of flowers spread outwards over the colorful foliage creating an interesting groundcover. *Pulmonaria Longifolia* 'B. E. Anderson' blooms later in the spring than the species, bringing color to the shade garden from mid to late spring. Plants prefer full to partial shade and demand moist but well drained soils that never dry out. The foliage forms a dense clump of groundcover, and the rhizomatous roots allow the plants to spread slowly over the years brightening up a shade wooded area. Plants can also be used as an edging plant along a woodland path. The foliage will dry out if the soil is too dry but root rot will occur if the soils are poorly drained. Occasional pests include slugs and powdery mildew.

***Pulmonaria longifolia* 'Bertram Anderson' blooms later in the spring than the species**
Photos: Ginny Rosenrkanz

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 117 DD (Aberdeen) to 288 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.

- Spiny witchhazel gall aphid – adult/nymph (171DD)
- Boxwood leafminer – adult emergence (249DD)
- Spruce spider mite – adult/nymphs (276DD)
- Azalea lace bug (egg hatch 1st gen) (281DD)
- Pine needle scale (egg hatch 1st gen) (283DD)
- Hemlock woolly adelgid (egg hatch 1st gen) (300DD)
- Spirea aphid (adult/nymph) (326DD)

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 April 15)

Aberdeen (KAPG)	117
Annapolis Naval Academy (KNAK)	174
Baltimore, MD (KBWI)	212
Bowie, MD	248
College Park (KCGS)	188
Dulles Airport (KIAD)	213
Frederick (KFDK)	177
Ft. Belvoir, VA (KDA)	213
Gaithersburg (KGAI)	185
Greater Cumberland Reg (KCBE)	155
Martinsburg, WV (KMRB)	143
Natl Arboretum/Reagan Natl (KDCA)	288
Salisbury/Ocean City (KSBY)	234
St. Mary's City (Patuxent NRB KNHK)	284
Westminster (KDMW)	212

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

Phenology

PLANT	PLANT STAGE (Bud with color, First bloom, Full bloom, First leaf)	LOCATION
Prunus laurocerasus (cherry laurel)	Full bloom	Columbia (April 17)
Podophyllum peltatum (mayapple)	First leaf and bud	Columbia (April 12)
Zizia aurea (Golden Alexander)	First bloom	Columbia (April)

CONFERENCES

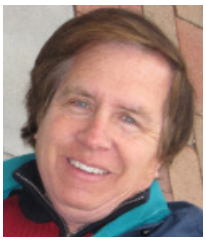
June 3, 2020
Eastern Shore Pesticide Recertification Program
Location: Chesapeake College, Wye Mills, MD

Save the Dates for the IPM Scouts' 4-Day Training Program:
June 2 and 4, 2020 at the Gary J Arthur Community Center, Glenwood, MD
June 9, 2020 at Ruppert Nursery, Laytonsville, MD
June 10, 2020 at Cavano's Perennials, Kingsville, MD

June 20, 2020 (Saturday)
Maryland Christmas Tree Association Summer Meeting
Cawley Family Farm, Denton, MD
For info contact Joncie Underwood
Maryland CTA@outlook.com

Regarding UMD Extension activities, we do not know at this time how the Coronavirus Covid-19 will impact these programs scheduled for later in the year.

CONTRIBUTORS:



Stanton Gill
Extension Specialist
sgill@umd.edu
410-868-9400 (cell)

Paula Shrewsbury
Extension Specialist
pshrewsb@umd.edu

Karen Rane
Plant Pathologist
rane@umd.edu

Chuck Schuster
Retired, Extension Educator
cfs@umd.edu

David Clement
Plant Pathologist
clement@umd.edu

Andrew Ristvey
Extension Specialist
aristvey@umd.edu

Ginny Rosenkranz
Extension Educator
rosnkrnz@umd.edu

Nancy Harding
Faculty Research Assistant

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