UNIVERSITY OF MARYLAND EXTENSION

TPM/IPM Weekly Report

for Arborists, Landscape Managers & Nursery Managers

Commercial Horticulture — April 26, 2019

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 sklick@umd.edu

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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)

2018 Rain Come Back to Haunt in 2019

By: Stanton Gill

In 2018, it started raining in March and basically continued to rain often and heavy throughout 2018. It was not only frequent rain, but many times, extremely heavy downpours. The soil remained saturated for long periods of time.

In January and February of 2019, we were already up by 10" of rain for the 2019 season. NPR, on Monday, did a podcast on the situation in the mid-west where they are experiencing record flooding in the farm belt area. This weather is severely delaying the planting of corn and soybeans. The foul weather combined with the embargo tariffs on China is going to impact mid-west farmers in 2019 in a big way. In the broadcast, they mentioned that over 1 million acres will be so late in the planting in 2019 that likely the crops will not make it to market in 2019.

Fortunately, here in Maryland, the nice weather moved in with much more reasonable amounts of rain over the last 3 weeks. Most people in the horticulture industry are happy right now. Nursery owners can finally get trees out of the ground and landscapers can install trees and shrubs. Greenhouse operations are reporting record sales of pansies and herbaceous perennial operations are humming along with sales.

Here is the upcoming problem. The supersaturated soils and areas that experienced perched water tables in 2018 had root systems damaged by low oxygen levels in the soil, resulting in heavy root loss on many plants. As we

move into the warmer weather in June, your customers will start to see branch dieback and leaf scorching from this past root injury. One nursery in central Maryland reported their largest loss of plant material in 2019 that they have experienced in over 30 years of growing from water soaked soils in 2018. In driving about examining spruce and fir trees, we are seeing major damage from needle cast that was heavy in 2018 with the frequent high moisture levels. The damaged needles are present in 2019, and many of the spruce and fir trees will continue to defoliate heavily.

I am not trying to depress you, but want to let you know the situation so you can prepare your customers for damage that will show up when the warm weather of late May and June arrives.

Look for needle cast diseases this spring on conifers such as fir (left) and spruce (right)
Photos: Stanton Gill

Rose Sawfly

By: Stanton Gill

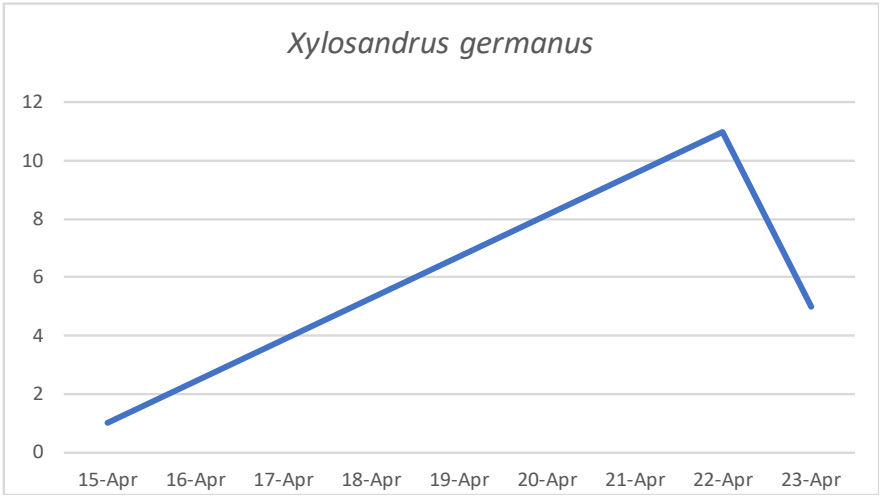
Roseslug sawflies are active in late April feeding on the foliage of roses. There are so many Knockout roses being planted everywhere, there is plenty of food for them to feed on in 2019. There are three species of sawflies in Maryland that cause damage to roses: the bristly roseslug sawfly, the roseslug sawfly, and the curled roseslug sawfly. The roseslug sawfly is the species that has only generation per year. It is active early in the season.
Control: Spinosad, Mainspring, and Acelepyrn all work very well on this pest.

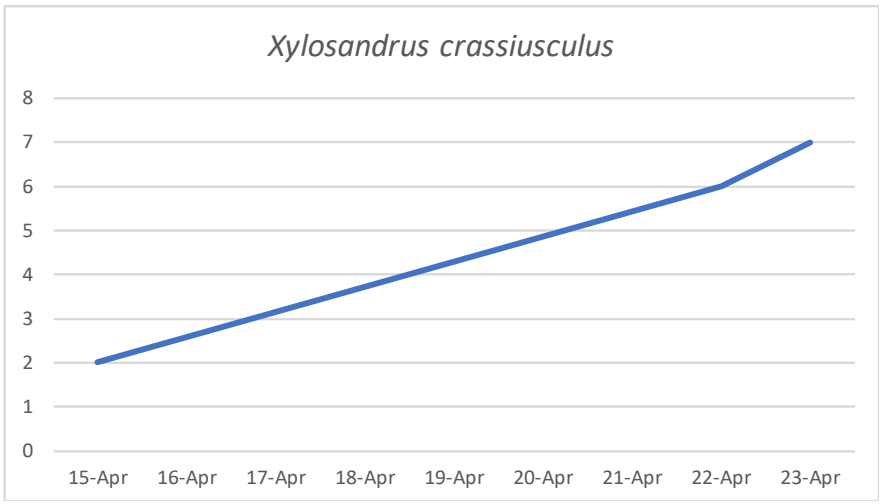
Rose slug sawflies are a common problem on Knockout roses
Photo: Christa Carignan, CPH

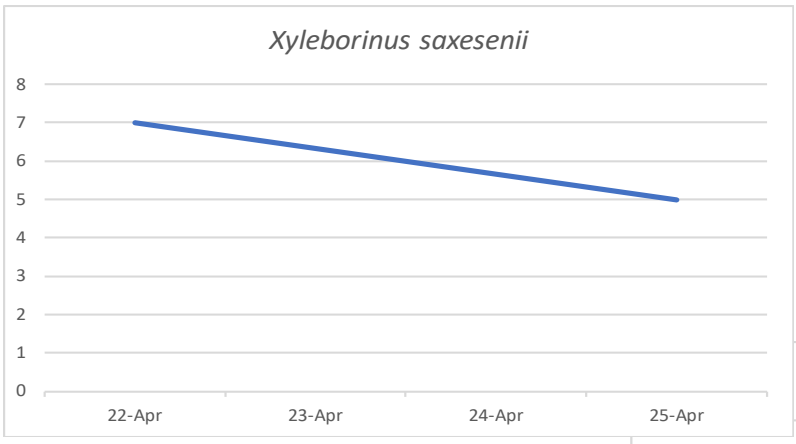
Ambrosia Beetles

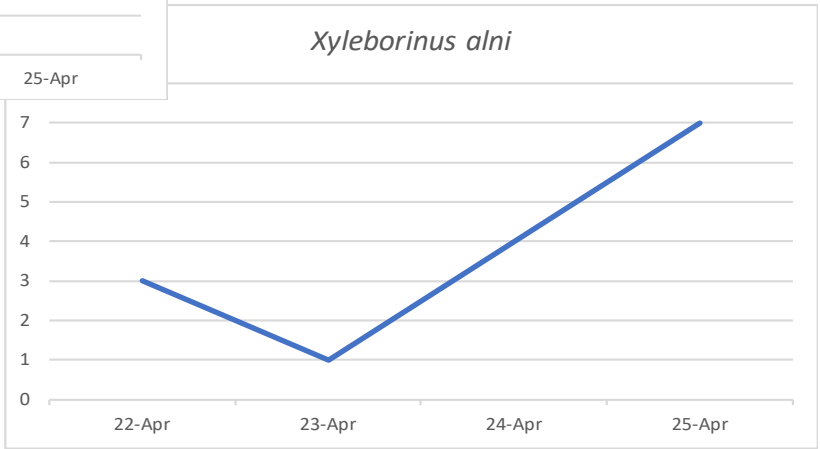
By: Stanton Gill

We are seeing increasing numbers of ambrosia beetles in our traps at CMREC, Frederick with James Becker, Darnestown (Marie Rojas), and Queenstown (Andrew Ristvey). Marie found them attacking *Cladrastis kentukea* and *C.* 'Perkins Pink'. They were only hitting those trees with trunk wounds, like cracks and cankers. I asked Rachel Ross to chart out the activity so we can see how the beetles are doing this season. In 2018, we had a very long emergence time for the 1st generation due to the frequent rains and cool weather. We want to see when we reach the peak of emergence this season. Rachel pulled our data together into a nice chart for this week so we can see the trends at CMREC with adult flight in 2019.









Lepidosphaes ulmi (Oystershell Scale) on Willow

By: Stanton Gill

Look for crawlers of oystershell scale in mid to late May

Marie Rojas, IPM Scout, noticed that a coral bark willow she was monitoring in a nursery was looking stunted. She noted that most were hunkered down behind bud scales on the stem, although a few were out on the stems. The scale is *Lepidosaphes ulmi* (oystershell scale). This armored scale feeds on a wide range of plant material including willow. Back in 1972, Garrett, working under John Davidson, published a study he conducted on this scale on willow and poplars. On the willows he reported crawler periods in late May. The females I examined did not have eggs evident yet. In another study, Garrett reported this scale on boxwood and maple and it had a slightly earlier crawler period emergence. When monitoring for this scale, you will see that the cover of the *L. ulmi* tends to be straight, unless they are crowded together, and light brown to brown in color. The females are reported to lay 18 - 30 eggs.

Control: When the crawlers emerge, then Distance or Talus can be applied.

Cottony Camellia/Taxus Scale

By: Stanton Gill

The soft scale called cottony camellia/Taxus scale has shown up on Chinese holly and Taxus yews more and more over the last couple of years. Heather Zindash, IPM Scout, found 3rd instar females. As we move into May, these females will begin to produce a bright white egg sac that will project out of the end of the scale cover. The scale tends to be found on the undersides of foliage, but can be found on stems.

Control: Systemic insecticides applied as basal trunk or soil drench work well. We have tested Dinotefuran, Altus, and Mainspring for this soft scale and they all worked well.

Look for third instar females of cottony camellia/taxus scale on foiage and stems
Photos: Heather Zindash, IPM Scout

Tuliptree Scale

Marie Rojas, IPM Scout, found immature tuliptree scale that had overwintered on *Liriodendron tulipifera*. Marie noted that they had applied oil in the fall, but still had some populations pull through. These 2nd instars look like black freckles along the stem. The scale will swell up through the spring and summer and mature late summer with crawlers produced in this area in September.

Tuliptree scale crawlers are active in late summer
Photo: Marie Rojas, IPM Scout

Minute Cypress Scale

Marie Rojas, IPM Scout, found minute cypress scale on Leyland cypress in Laytonsville this week.
Control: Use 0.5 – 1% horticultural oil or pyriproxyfen (Distance) or buprofezin (Talus) at crawler emergence. The crawlers should be active in central Maryland by the end of June.

Plum Curculio Damage

By: Stanton Gill

We found fresh feeding damage from plum curculio in Upperville, VA on Wednesday and Chuck Schuster found injury on pears on Monday in Montgomery County. The females use their mouthparts to chew a crescent-shaped wound in the fruit of plums, pears, apples, and Saskatoon serviceberry very early in the development of the fruit. They are only active for a couple of weeks in the spring.
Control: Application of a protectant insecticide such as Imidan greatly reduces this injury.

Plum curculio weevils are damaging this young Asian pear fruit
Photo: Stanton Gill

Mistaken Insect Damage on Cherry Laurel

By: Stanton Gill

Two different landscapers sent emails asking about insects chewing round holes in cherry laurel leaves. It was on the leaves in the middle and lower parts of the plants. I visited one of the sites to see the damage. It is not insect damage. This damage is tied into the rainy season in 2018. Cherry laurels become infected with several leaf spot diseases. The necrotic tissue usually occurs in roundish circular patterns. The dead tissue drops out and looks like an insect had been feeding on the foliage. New foliage looks fine at this time of year. If it becomes rainy and overcast, then the new foliage can become infected. Rain drops spread the disease to new soft tissue. Protectant fungicides can be applied at this time of year.

Leaf spot disease symptoms on cherry laurels look a lot like insect feeding damage
Photo: Stanton Gill

Willow Leaf Beetles

Marie Rojas, IPM Scout, reported that willow leaf beetles are just beginning to feed on leaves of *Salix babylonica* in Laytonsville on April 25. Adults overwinter in bark crevices or on the ground in leaf litter, and they become active when trees begin to leaf out. After feeding on early spring foliage, females lay yellow eggs on the undersurfaces of leaves – up to 750 eggs, in "clutches" of about 50 eggs each. The eggs hatch in a few days and hundreds of larvae can be found skeletonizing leaves from below – eating the tender, green tissue between the veins. Older larvae will feed on the leaf's upper surfaces. Imported willow leaf beetles have some natural enemies in the forms of parasites and parasitoids, and a few predators like Asian lady bird beetles which eat willow leaf beetle eggs, and assassin bugs, which eat the larvae. Willow trees will flush new growth and in some cases can recoup from this feeding with acceptable levels of damage. Leave the rest to the predators and parasties.

Willow leaf beetles larvae skeletonize foliage

Maryland's Industrial Hemp Pilot Program

By: Andrew Ristvey

Last year, the Maryland Legislature passed House Bill (HB) 698 to allow farmers, contracting with the Maryland Department of Agriculture (MDA) or Institutions of Higher Education (IHE) in Maryland to grow industrial hemp for research purposes. Any farmer or grower wishing to produce hemp needs to obtain a Maryland Department of Agriculture license to do so, but they must be partnered with an IHE before their application is considered. While the 2018 U.S. Farm Bill legalized Industrial Hemp (removed it from Schedule 1 Status based on the 1970 Controlled Substances Act) and will no longer require growers to partner with an IHE or state department of agriculture, this ruling will not go into effect until 2020. In every state that has adopted an industrial hemp pilot program, the partnership requirement has not changed for 2019.

The most important issue surrounding the production of industrial hemp is the legal enforcement of the tetrahydrocannabinol (THC) content, the psychoactive phytochemical. In fact, the definition of industrial hemp is related to this THC concentration which needs to be less than 0.3% THC in any part of the plant. If the THC content is above that threshold, the plants need to be destroyed.

Cannabis sativa has had a long history in the U.S. long before it was regulated and then made completely illegal under the Controlled Substances Act. Originally grown for fiber and textiles, the species was commonly grown in the U.S. In an effort to bring back a hemp industry to the U.S., the Federal Government has, step by step, lifted the restrictions on the plant. While many other countries like China and Canada have cornered the hemp fiber, seed and textile markets, U.S. farmers will mainly grow hemp to produce cannabidiol (CBD), another *Cannabis* phytochemical. Cannabidiol is a similar phytochemical to THC but it is not psychoactive. It is purported to have anti-inflammatory properties and some medical evidence shows success with childhood epilepsy syndromes. Within the medical field, there is much interest in studying this compound. Regardless of the need for testing the effectiveness and safety of CBD for human use, tinctures, salves and a great deal of other products are making their way to the market.

With that said, the main interest for hemp production in Maryland is for CBD. Knowing that industrial hemp will become a specialty crop, at least for the short term in the Free State, the University of Maryland will need to develop nitrogen fertility recommendations for nutrient management planning. Therefore, for this year, the University of Maryland Extension has partnered with 13 growers under the Maryland Industrial Hemp Pilot Program. Most will be growing the hemp for CBD. The research, necessary for farmer participation, will be looking at how different nitrogen rates effect growth, yield, and phytochemical content including CBD and THC. We are also interested in understanding phosphorus requirements during the vegetative and flowering growth cycles. Additionally, we have interest in soil nutrient removal, especially phosphorus and how we may possibly incorporate this plant into a crop rotation. We have chosen partners throughout Maryland to better understand production effects from different soil types or climate. Finally, we are very curious about the plant's susceptibility to disease and pests. If you want to know if a plant gets a disease, grow it in Maryland. While many growers have been told the plant is bullet-proof, much of the present production has been occurring in drier-climate states. However, North Carolina research has seen disease pressure on the plants. Our climate is very conducive for a variety of plant threats. Even though this crop was grown successfully throughout the mid-Atlantic region for a couple hundred years, *Cannabis* has been bred into many varieties which may not retain the same resistance as the original plants. Another issue that cannot be ignored is that at this time, the plant is not labeled for pesticide use, making this growing season a little precarious for growers. Hopefully industrial hemp will be labeled in 2020 for pesticide use.

As for University of Maryland Extension, we hope that this crop will be a money maker for growers. As with all new crops, we expect some success and some failure. Good luck to all the pilot program growers this year!
*The University of Maryland's application process for partnering in the Industrial Hemp Pilot Program is over, however there may be other IHE's in Maryland that are still willing to accept applicants.

Azalea Lace Bug: *Stephanitis pyrioides* (Scott) (Hemiptera: Tingidae)

By: Nancy Harding, UMD

Azalea lace bug nymphs (early instars) were found on evergreen azalea shrubs in Bowie on April 23. According to the uspest.org website, the growing degree days in Bowie were 311 DD on this date.

Native to Japan, the azalea lace bug is the most serious lace bug pest in Maryland. This pest is particularly injurious to evergreen azalea varieties, although deciduous varieties may also be attacked. Azalea lace bug overwinter as eggs inserted into the underside of leaves along major veins and there are 4 generations per year. First bloom of evergreen azaleas is a plant phenological indicator (PPI) for hatch of overwintering eggs.

This usually occurs in mid-April in Maryland. Early instar nymphs feed along major veins on the underside of leaves, while later instar nymphs are more dispersed. Each generation takes between 30 and 40 days to complete. Females lay groups of black eggs partially inserted into the underside of leaves, generally along the midrib but also on lateral veins. The female then covers the eggs with a drop of black frass. The fourth generation is active into the fall. In the fall overwintering eggs are produced.

Both nymphs and adults cause damage to the host plant by using their piercing/sucking mouth part (stylet) to remove cell contents of the leaf tissue resulting in yellow stippling on the upper leaf surface. Heavy feeding will cause the leaves to appear whitish (see picture).

Monitoring: The best life stage to target for lace bug management is first generation nymphs. Begin monitoring for lace bugs when the first evergreen azaleas begin to bloom, around mid-April. Look on the undersides of last year's leaves where overwintering eggs were laid for first generation egg hatch. Look for signs of yellow stippling damage on newer growth. Also look for shiny black or brown fecal spots. If populations appear high and feeding damage becomes heavy, treatment may be necessary. Monitor azaleas in open, simple habitats with low plant diversity.

Management: Biological control. There are a range of predators that feed on azalea lace bug that include lady beetles, lacewings, and other predacious bugs, in addition to an egg parasitoid. These biological control agents work best in diverse landscapes with multiple plant species and greater vegetation complexity. Biological control can be enhanced by increasing landscape diversity. Lacewing larvae (predators) can be purchased and released where there are populations of lace bug nymphs.

Chemical control. If populations are high, use insecticidal soap or oil (ensure contact with lace bugs on the underside of the foliage), or systemic insecticides that move into the plant through the soil or foliage [ex. acephate (Lepitech), acetmiprid (Tristar)]. Please be sure to follow directions on the insecticide label.

For additional information see: http://bugoftheweek.com/blog/2013/1/23/lace-bugs-on-the-attack
And/or
https://extension.umd.edu/sites/extension.umd.edu/files/_images/programs/hgic/Publications/HG95%20Lace%20bugs.pdf

Azalea lace bug nymph (yellow arrow) with black fecal spots on underside of the leaf.
Photo: N.Harding, UMD

Stippling damage on azalea leaves from azalea lace bug feeding
Photo: P. Shrewsbury, UMD

Aphids

Marie Rojas, IPM Scout, found woolly elm aphids just out and beginning to cause leaf rolling on *Ulmus americana* 'Princeton'. Christa Carignan, CPH, found an heavy infestation of aphids on *Physocarpus opulifolius* 'Diabolo' just as the flower buds are setting up. Christa noted that a sticky mess of honeydew is making the stems unusable for cut flower arrangements. Ants were tending them.There was no sign of beneficials yet on the ninebark..

Aphids are active this spring; monitor plants for beneficials
Photo: Christa Carignan, CPH

Woolly Aphids on Winter King Hawthorn

By: Nancy Harding, UMD

Woolly aphids were found feeding on Winter King Hawthorn in Bowie MD on April 23. The images below show the distortion damage the woolly aphid cause (indicated by black arrow). In addition, these phloem sucking aphids produce a sticky, sweet by-product called honeydew. Ants (red arrow) find honeydew irresistible and are often associated with woolly aphid infestations. The accumulated degree days in Bowie on April 23 were 311DD.

Control: Control is seldom necessary. Heavy infestations of wooly aphid rarely occur as their numbers are kept low with natural predators like lacewings, lady beetles, hover flies, parasitic wasps, and birds. Gold finches commonly feed on these 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 mummy's upper surface.

Winter King Hawthorn showing curled leaf from aphid feeding (on left). On the right is woolly aphid (black arrow) with protector ant (red arrow).
Photos: N. Harding, UMD

Boxwood Blight Risk Model Under Development

By: Karen Rane

Researchers at Oregon State University (Dr. Leonard Coop) and Virginia Tech (Dr. Chuanxue Hong) are collaborating to create a boxwood blight risk model, similar to models that apple growers currently use to predict apple scab and fire blight outbreaks. The boxwood blight model uses temperature and rainfall data from local weather stations along with research data on factors influencing spore development and sporulation, to create a risk index that may help identify periods of favorable weather for infection. The model assumes that there is a source of the pathogen on the site (that is, it does not predict movement of the fungus). The web-based model can be found at this link: http://uspest.org/risk/models. There is also an app version available for Android or Iphone (search on "boxwood blight" where you get apps for your device). To use the model, enter your location and choose a weather station near you. You can set a time span for risk assessment, and the results will be displayed as either a graph or table (Figure 1 shows an example of the table format). There is introductory information on the app version with symptom photos under the "Intro" tab. The model should be used as a reference only since it has not yet been fully calibrated or validated (the developers clearly state "use at your own risk"). Keep in mind that the risk models used for fire blight and apple scab prediction were developed decades ago and have many years of validation research behind them, and we don't yet have that same body of research for boxwood blight. Ongoing research will help refine this model with the eventual goal of providing excellent protection from boxwood blight while minimizing fungicide treatments. The developers are interested in getting feedback on this draft model, though, so if you have comments drop me an email (rane@umd.edu) and I'll pass them along. To find more information on managing boxwood blight, including sanitation procedures and fungicides, visit the Virginia Boxwood Blight Task Force website.

Intro | Inputs | Graph | Table

Station D9421, DW9421 Silver Spring MD, 2019

Date	Risk index	Risk class
Apr 24	0	Very Low Risk
Apr 25	0	Very Low Risk
Apr 26	92	Low Risk
Apr 27	0	Very Low Risk
Apr 28	0	Very Low Risk
Apr 29	0	Very Low Risk
Apr 30	0	Very Low Risk

USPEST.ORG for Agricultural, Pest Management, and Plant Biosecurity Decision Support in the US

Integrated plant protection center

Oregon State University

Figure 1. Example of results from Boxwood Blight Risk Model app (http://uspest.org/risk/boxwood_app) under development.

Taxus Yews Dying

By: Stanton Gill

I have visited a number of sites this week where *Taxus* yews that were well established are turning brown rapidly. The heavy and frequent rains referenced in a previous article about the 2018 weather is causing the root systems to be compromised and often root rot moves in. The sunny warm weather of the last 3 weeks is causing foliage to lose water rapidly through the foliage and the browning is showing up quickly.

Several nurseries are reporting yews have collapsed in field-grown situations. In one case, a nursery shipped off the plants and the end user noticed the foliage turning brown rapidly. The root system was damaged, and the impact is showing up now.

Yews are dying in landscapes and nurseries as a result of waterlogged soils throughout 2018
Photo: Stanton Gill

Beneficial of the Week

By: Paula Shrewsbury

Ants are diverse and play many ecological roles – Ants can be predators of pest insects

Ants are cosmopolitan. There are many species of ants (estimated 12,000 species worldwide), they are found almost everywhere, and they "do" many different things some of which are beneficial and some not so beneficial. Many species of ants are omnivorous and will consume seeds (even weeds seeds – yeah), nectar, and other insects. Most are generalist predators or scavengers. Today I would like to discuss the role of ants as predators. For example, in turfgrass environments it is estimated that ants can eat ~75% of eggs and small larvae or nymphs of pests such as sod webworms, white grubs, cutworms, armyworms, chinch bugs and others. That is a lot of biological control! Ants also are arboreal and feed on pest insects of agricultural and ornamental plants. Caterpillars such as eastern tent caterpillars make a yummy meal for ants. Ants are also major predators of termites, attacking their nests and taking eggs and immatures as food.

Ants are attacking this white grub in the soil.
Photo: Alton N. Sparks, Jr., University of Georgia, Bugwood.org

Ants are part of a complex of natural enemies (predators, parasitoids, and pathogens) and other beneficial arthropods (decomposers) that occur in ornamental and turfgrass environments and prevent many herbivorous insects from reaching damaging levels. Before trying to get rid of ants be sure to determine if they are beneficial or not.

Ants can be arboreal and attack insects like this eastern tent caterpillar
Photo: Bob Germain, https://gardening.usask.ca

Weed of the Week

By: Chuck Schuster, UME

The turf and landscape industries have to work through the challenges of the weather. The soils are drying out a great deal in many areas and some areas continue to miss rainfall while others get needed rainfall. Soil temperatures are currently above 60 °F in all of central Maryland and toward our metropolitan centers. Undesired plant material (weeds) are flourishing with the warmer than normal temperatures also. Crabgrass control is now in the post emergent phase or waiting to apply the second round of pre-emergent products to keep this weed under control.

Photo 1: Lesser celandine is only easy to find early in the season
Photo: Chuck Schuster, UME

Remember that controlling crabgrass is not just a cosmetic issue, as it is an annual, and when not managed, will fill in bare areas covering the soil in the summer. Unfortunately, it will die back in the winter leaving the soil primed for erosion and soil loss. That soil contains nutrients that are harmful to our local waterbodies.

Photo 2: Look for lesser celandine flowers from into May
Photo: Steve Dubik, UME/ Montgomery College

One weed that has been very prolific this spring is lesser celandine, *Ficaria verna*, also known as fig buttercup and pilewort. It is an herbaceous perennial flowering plant that is flowering currently. This spring ephemeral starts early in the season, often being found near forest transition areas (Photo 3) with turfgrass and creates a dense carpet thus preventing many native ephemerals that include bloodroot, wild ginger and others from surviving. This plant has a dense growth habit making it an invasive weed that competes and eliminates native understory plant species. (photo 1) This plant may be misidentified as marsh marigold *Caltha palustris*, but it does not produce the tuber found on lesser celandine. It will also compete quite well with desired species of turf and often requires appropriate management to be controlled.

Photo 3: Lesser celandine is often found on the edgeof forested areas
Photo: Eric Wenger, Complete Lawn Care

This plant will form a basal rosette of dark green and shiny stalked leaves heart to kidney shaped. The flowers arise above the leaves on a delicate stalk, are yellow in color, and occur with eight petals (rarely more). (photo 2) The center of the flower is slightly darker in color. Most flowering occurs in this region from March through May. The plant has pale, cream colored bulblets that occur along the stem axils that will become noticeable with close observation after the flowering period is complete. These bulblets make mechanical removal very difficult. Lesser celandine spreads primarily by vegetative means through abundant tubers and bulblets.

Control of lesser celandine is difficult. Manual methods can achieve success with small patches, but will take careful removal of all bulblets and removal from the site to either a landfill or other means of destruction. Chemical control can be achieved using glyphosate (Rodeo is labeled for wetland areas) products early in the season, mid-February to early April, as long as the temperature is 50 °F and no rain is anticipated within 12 hours. Waiting beyond this period of time may cause damage to many native wildflowers that share some sites. In this area, it is recommended to wait until half the plants are in bloom to start control. In turf/lawn settings, products containing at least two of these herbicides have been found to be effective. The herbicides to look for are dicamba, MCPA, and triclopyr that will control many broadleaf weeds. Use caution with these products near ornamentals as the potential for volatilization does exist. Glyphosate products are non-selective and will destroy desired species. This process will take seven to fourteen days under ideal growing conditions. Currently no post emergent products that do not harm desired turf species are available.

Plant of the Week

By: Ginny Rosenkranz, UME

Achillea millefolium 'Little Moonshine' is an herbaceous perennial that blooms from June to September with clusters of bright yellow flowers massed on a flattened bouquet about 2-4 inches across. Although 'Little Moonshine' is a compact version of the *Achillea* 'Moonshine', the flowers are the same size, just on a shorter stems and bloom about 2 weeks earlier than the species. To get the plants to rebloom, trim off the old flowers back to the lateral flower buds to encourage more flowers later in the summer. Plants grow about a foot tall

and wide and can spread by rhizomes. The species can spread aggressively by both rhizomes and self-seeding which should not be a problem with the newer cultivars. The aromatic foliage is gray green in color and feathery due to the deeply cut leaves. The specific epithet describes the foliage of thousands of leaves. Even when used as a cut flower the foliage maintains the spice aroma for quite a while. *Achillea millefolium* 'Little Moonshine' grows best in lean, dry, well drained soils in full sun. They are very tolerant of deer browsing, heat, drought and high humidity of summer, but do attract butterflies when in bloom. 'Little Moonshine' is an excellent addition to a cottage garden, naturalized areas, and can be used for fresh or dried cut flowers. Pests can include occasional stem rot, powdery mildew, or rust. Soil that is too rich may cause the plants to flop over, and strong winds and rain may cause plantings to flatten.

***Achillea millefolium* 'Little Moonshine' can be used for fresh or dried flower arrangements**
Photo: Ginny Rosenkranz, UME

Degree Days (as of April 24)

Aberdeen, MD (KAPG)	267
Annapolis Naval Academy (KNAK)	335
Baltimore, MD (KBWI)	290
College Park (KCGS)	276
Dulles Airport (KIAD)	282
Frederick (KFDK)	258
Ft. Belvoir, VA (KDA)	315
Gaithersburg (KGAI)	266
Greater Cumberland Reg (KCBE)	214
Martinsburg, WV (KMRB)	235
Natl Arboretum.Reagan Natl (KDCA)	381
Salisbury/Ocean City (KSBY)	299
St. Mary's City (Patuxent NRB KNHK)	325
Westminster (KDMW)	302

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 mapModel 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 will be posted on the Maryland Arborist Association (MAA) website.

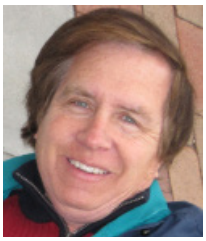
Eastern Shore IPM Pest Walk
May 15, 2018
Location: Salisbury University, Salisbury, MD
https://2019esipmpestwalk.eventbrite.com

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
Details in a future report

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

CONTRIBUTORS:



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